Conference of Dominion Beekeepers

A National Beekeepers' Association Formed.

The Future of the Industry in New Zealand.

Building up an Export Trade—The Way Paved for Important Developments.

The third annual conference held under the auspices of the National Federated Beekeepers' Association took place in Wellington on June 18th, 19th, and 20th. There was a large attendance of apiarists from all parts of the Dominion, and the evident interest which was being taken in the work of the Association came in for favourable comment from several speakers. The president of the Association (Mr. C. A. Jacobsen) occupied the chair. There were present:—Messrs. C. A. Jacobsen (Little River, president of the Federation), F. S. Pope (secretary of Agriculture), T. W. Kirk (Department of Agriculture), W. A. Boucher (Department of Agriculture), G. Westbrooke, F. A. Jacobsen, E. A. Earp, L. Bowman (apiary instructors), I. Hopkins (Auckland, (supervisor of Government apiaries), R. Walker (Lower Hutt), R. Askew (Manawatu), A. Ireland (Canterbury), W. B. Bray (Banks Peninsula), R. Holditch (Masterton), E. J. Pink (Manawatu), J. C. Hobbs (Kauwhata), J. Alton (Upper Hutt), W. E. Barker (Peel Forest), J. Irving (South Canterbury), J. Ebbett (Pahiatua), N. S. McLeod (Pahiatua), A. S. Bentley (Pahiatua), W. A. E. Elliott (Canterbury), Mrs. W. A. Elliott (Canterbury), R. Gibb (Wyndham), R. Stewart (Crookston), A. Barrett (Wainui), D. H. Lea, J. Rentoul, J. B. Adams, J. Kimpton (Greytown), R. Thornton (Wellington), S. Nicholls (Petone), E. B. Langford (Nelson), J. A. Moreland (Blenheim), E. J. Gridley (Koromiko), W. A. Baillie (Carterton), F. C. Baines (Taranaki), T. H. Pearson (Waikato), W. Hooper Teed (Thames Valley, Waikato), S. Hutchinson (Waikato), J. Allen (Southland), H. Bartlett-Miller (Waikato), J. G. Cotterell (Te Aroha), R. W. Brickell (Dunedin), E. G. Ward (Canterbury, secretary of the Federation), G. Ward (Porirua), A. R. Bates (Taranaki), H. Gilling (Taranaki), T. J. Mannex (California).

In the absence of the Hon. W. F. Massey, the Conference was formally opened by the Hon. R. Heaton Rhodes, who, in the course of his remarks, mentioned that the Association represented between 11,000 and 12,000 keepers of bees, as an evidence of the extent to which the industry had grown. During 1906 the output was valued at £22,000, but in 1913 the figures had more than doubled, the output being estimated at £45,000. "These are figures which are astonishing to me," went on the Minister. "I had no idea that so much honey was produced in this country." The export this year would probably reach 135 tons, or, as the Customs figures were usually given in lbs, 302,400lbs. The Government already did something to encourage and assist the industry by means of a staff of instructors and inspectors, and also by the grading of exports, at present at the request of shippers. He understood, however, that the Association intended to advocate amendments to the existing legislation by which grading would be made compulsory. If the members were unanimous in these desires he was sure they would have Mr. Massey's sympathy—(applause)—and he expressed regret that the Premier was in the South, and was therefore not able to be present.

Mr. Rhodes also promised his assistance in securing the legislation necessary to meet the wishes of the Association. (Applause.)

The president thanked the Minister on behalf of the Association, and added that he thought that the future would show that the beekeepers were of some importance to the community. (Hear, hear.) The dairying industry had grown to its present dimensions from a very small beginning, and in the case of the beekeepers they were now in their infancy. However, the last few years had shown material progress, and if they continued to grow as they had of late, he thought the output of honey could be increased until the beekeepers were of a very real value to the country. (Applause.)

COMPULSORY GRADING.

Mr. F. S. Pope (Secretary for Agriculture) said the Department was very pleased to see the beekeepers meeting in conference and exchanging ideas, and working for greater co-operation and combined action. He paid a tribute to the great interest taken by Mr. T. W. Kirk in the apiary division, and assured them that all matters connected with their business received the very best attention from him. The Hon. Mr. Rhodes had said that no doubt the Premier could be persuaded to take a sympathetic view of the Association's desire for legislation making the grading of honey compulsory. He (Mr. Pope) had seen Mr. Massey before he left for the South, and was glad to be able to tell them that the Premier intended to do what he could towards introducing the necessary bills and passing them during the coming session of Parliament. (Applause.)

The president, after expressing satisfaction at Mr. Pope's announcement, said he was pleased to see such a large attendance. It had been thought in some quarters that the beekeepers of New Zealand had no interest in their own business, but it was evident that when they saw that the organisation was of some practical use they attended in good numbers. The Association had made a start in its career by starting an export trade which would in time develop into a very important business. There was no doubt that the production of honey was going to be a big thing in this country, and when they got into the way of collecting all the nectar the output would be enormous; in fact, he thought it not unlikely that they would come very close to the butter and cheese returns. In the last few years the output had more than doubled, but the continued development of the industry required whole-hearted co-operation amongst the apiarists, and in order to open up the markets they must be prepared to help the Association by putting their hands in their pockets. (Hear, hear.) The industry would grow in importance according to the vigour which they put into it.

The executive, in the course of their annual report, remarked that one of the features of the year's work had been the establishment of a honey export trade. The president had had this scheme in hand for some 18 months, and had now concluded arrangements with the Christchurch firm of Montgomery and Co. for the export of honey to various parts of the world under the supervision of the Federation. They had to thank the Government, through Mr T. W. Kirk, for having arranged to grade the honey and stamp the cases with the brand of the Agricultural Department, and attaching grading figures. This would give the New Zealand product a value which would be impossible by any other means. The executive believed that the confidence of buyers would be gained thereby, and were sure it would be the means of establishing a demand for New Zealand honey, which would be of benefit for all time. The executive also expressed appreciation of the Department's energy in trying to stamp out disease. From accounts to hand, the executive knew that the work of the various inspectors was appreciated greatly, and the energy and tact of these officers had been favourably commented on by all they had come in contact with.

The balance-sheet showed the sum of £2 0/11 in hand, after deducting the various items of expenditure, but the liabilities of £4 7/0 showed a debit balance of £2 6/1. Both the report and balance-sheet were adopted without discussion beyond the chairman's remark that they could see that the executive had not had much money to handle, and that the conference would see the necessity of taking prompt steps to improve the Federation's finances, for money was necessary to accomplish their object.

The President: You can see we haven't had much to work with, but if we are well provided with money we can do a lot of work, and valuable work too, for all concerned.

After some discussion the draft of the amended constitution was read and referred to a committee of the whole conference, to report next day. The question of whether the right to vote should be limited to members of the Association occasioned some further debate, but, on the motion of Mr R. Gibb, it was finally decided that all beekeepers present at the conference should be allowed to attend the meeting of the committee and to vote.

DEALING WITH UNEXTRACTABLE HONEY.

(By I. HOPKINS.)

It may be well to explain to the uninitiated that "unextractable" honey means honey that is too dense to remove from the combs by the ordinary honey extractor without injury to the former. The bulk of New Zealand honey raised in commercial apiaries south of Auckland is chiefly gathered from white clover blossoms, but nearly all of it contains more or less of some admixture from other sources. There is no difficulty in extracting what we usually term clover honey, as it flows freely from the combs by centrifugal force when revolved at a steady pace in the extractor baskets.

Although, as I have stated, the bulk of the honey raised south of Auckland can be readily extracted, there are districts where occasionally there is much trouble and loss through more or less dense honey being gathered. The Waikato districts may be quoted as an example. Since the modern system of bee culture was first adopted there in 1880, I have known of unextractable honey being gathered; more in some seasons than in others, but it is very rare that a season passes without being troubled with some. North of Auckland I do not know of one district wherein the extractor is of any use, with the exception of the Great Barrier Island. Honey from rata blossoms and also from the Pohutukawa flowers extracts freely, and these I understand are the main sources of nectar on the Great Barrier.

FROM WHAT SOURCE IS THE DENSE HONEY OBTAINED?

It seems very strange indeed that after thirty years' experience with the evil we should still be ignorant of the source of the dense honey. Several beekeepers have their theory as to the plants from which it is gathered, each differing more or less, but no one is quite certain on the point. Did we but know we might take steps to eradicate the plant or plants if it were possible, or by watching it coming into and going out of flower try to counteract the evil in some way; but while ignorant of the source we are practically helpless.

Manuka, flax, cabbage tree and pennyroyal are some of the sources put forward. The three first plants certainly blossom about the time the dense honey is gathered, early in the season, but there are localities in the Waikato where most of the native plants mentioned have been cleared away, and yet the evil still exists in some seasons. The correct and only method for finding the source or sources is to collect the pollen grains from the chief plants in blossom at the time the dense honey is being gathered and compare them under a powerful microscope with those found in the honey—this would settle the question at once.

I have no doubt in my own mind that at least one kind of manuka (tea-tree) and flax are two sources, but I feel sure there are others; it may be weeds of some kind. When Chief Government Apiarist, I, together with my assistants, commenced to collect and preserve pollen grains from all the chief honey-yielding flora. The scheme was, to make a complete collection and then have them microphotographed on a fairly large scale and reproduced in a bulletin so that comparisons could be made at any time. About twenty different kinds were collected, when a change took place, and nothing in this line has been done since. I consider it most important that such a scheme should be undertaken as soon as possible. One would have thought that the Waikato Beekeepers' Association would have undertaken some such steps before this.

DEALING WITH DENSE HONEY.

In the first place, I would say to the prospective commercial beekeeper, make all inquiries, before settling on any district for the establishment of a bee farm, as to the bee flora about, and avoid any locality where much dense honey is gathered, and don't go north of Auckland.

There are three methods of dealing with dense honey, viz., pressing the combs, raising section honey while it is on, and storing it for food for the bees. The first is a wasteful and messy business, while the product is but a poor third or fourth-grade article. Raising section honey is cleaner and a better method, but the drawback is in getting the sections safely to market without being smashed. Another drawback is that the demand for section honey is comparatively very limited, so that the market is soon fully stocked and low prices is the result.

The third method of storing the combs meanwhile is the best, or at least we have found it so at the Government Apiary. The dense honey is brought in early in the season, and how long it will last depends entirely upon the weather. If, when clover blossoms come in, the weather is bright, and the temperature favourable for the secretion of nectar in the clover, the gathering of dense honey ceases. If, on the other hand, the weather proves unfavourable for clover, we get a longer spell of dense honey.

When the supers are getting fairly full of the dense stuff and sealed over (we allow this kind to be fully sealed before removing it) we remove the combs to the comb room and substitute either empty combs or frames of foundation. So long as the dense honey is being stored we follow this plan, and directly extractable honey begins to come in we empty the hive of all honey. We now go on extracting closely right up to the end of the season, leaving nothing extractable in the hive when the end of the season comes. Now, we simply furnish the hive with frames of the stored unextractable article for food.

In conclusion, I can only hope that the foregoing may be of some assistance to those who are troubled with dense honey, and I would suggest to the National Association the advisability of endeavouring to get the Department of Agriculture to carry out the scheme I started, viz., the collection and reproduction in bulletin form of the pollen grains from the various honey plants growing in different parts of the Dominion, so that we may have the means of determining the source of any given sample of honey.

Epsom, Auckland, N.Z.

THE RIPENING OF HONEY OUTSIDE OF THE HIVE.

(By A. IRELAND, Christchurch.)

The subject that I have to speak upon, although it may not sound so, is the most important of all the things that affect our industry, or, indeed, any industry, viz., the putting upon the market of the product in the best condition possible.

The permanent prosperity of any industry must depend upon the producers exercising all their ingenuity and knowledge in producing an article that satisfies all that the consumers expect, and more.

You must all have observed that comb honey has a certain flavour or aroma which extracted does not possess, or at least not in the same degree. The question is, Why is this so? It must be caused through some fault (if I may so call it) or process in extracting. This aroma is very volatile, and subject to pass off by evaporation. So that the longer honey is left exposed to the influence of the atmosphere before being sealed in its permanent containers, more of the aroma or perhaps all of it may be lost; and so the resultant honey is not in as good a condition as it is possible to produce it. It may still be what may be called a good honey, but it is not as good as it could have been.

Someone in New Zealand has been advocating the extracting of honey before being ripened or sealed over in the hive, and ripening by artificial means. That is by shallow tanks having a large evaporating surface. Some such process is, of course, forced upon one who resorts to artificial ripening of honey so as to get rid of the excess of moisture quickly, or otherwise it might sour and ferment. But this process is the best possible means of getting rid of the aroma which gives to honey its best quality. The means by which one can produce the best possible sample of honey, and one as nearly as possible resembling fully-ripened comb honey, is to extract the honey after it has fully ripened in the hive, so that it does not require an evaporating tank to ripen it. The best form of tank is a deep one having as small an evaporating surface as possible. The honey has been already ripened by the bees and requires no further ripening. It is put into the tank for other purposes, viz., to let the scum and particles of comb or other foreign substances it may contain rise to the surface and so be removed. This can be accomplished quicker and more completely by the use of a deep tank than a shallow one. Gravitation is the force acting. The greater the depth of liquid, the greater the force which draws the heavier substances to the bottom and sends the lighter to the top. The result of this is that the ripest honey goes to the bottom and the least ripe rises to the surface, so the great bulk of honey is prevented from contact with the air, and so it is able to retain much more of the volatile aroma than would be possible with a shallow tank with a large evaporating surface.

It is possible under certain circumstances to produce a good sample of honey that has been extracted before being fully ripened in the hive. But it requires the greatest of care and knowledge how to proceed, and in the hands of anyone but an expert is almost sure to fail more often than succeed; also, in some districts it is almost impossible to succeed. Honey has a great affinity for moisture, and where the atmosphere contains much moisture it is sure to absorb it, and so turn sour and ferment. With a dry atmosphere one may extract honey before it is ripe, and with care may often produce a good sample; but it is never so good as it would have been had it been extracted when fully ripe and exposed as little to the air as possible. Now that we are trying to develop a foreign market, it behoves us to use our best endeavour by every possible means to produce as good a sample of honey as is possible, and try to induce others to adopt the very best methods in the production of honey. I am quite certain that to advocate the practice of ripening honey after extracting it is not the wisest course to adopt, more especially the indiscriminate use of such a method, without giving warning of the risks attending it.

I propose that this conference considers that any artificial methods of ripening honey are detrimental to the best interests of beekeepers in general, and requests that the Department of Agriculture revise Bulletin No. 18 on the lines of "The Care of Extracted Honey," by Dr. E. F. Phillips Ph.D.

Mr. Ireland went on to make the following quotation from a paper by Dr. E. F. Phillips on the subject:—"It is the policy of most beekeepers to allow this ripening to take place in the hive by waiting until the honey is almost all or entirely capped, and this is undoubtedly the preferable method. It is a matter of common observation that honey which remains in the hive for a long time has a better body,' and has more of the characteristic honey aroma. By ripening in the hive honey gets its characteristic flavour to a greater extent than is possible in evaporation outside the hive. The thorough ripening of honey cannot be too strongly recommended. Honey attracts moisture, and there is always a tendency for a very thin layer to form on top of the honey, in which the water content is very high. In such a film the amount of sugar is low; the acetic-acid-forming bacteria can grow rapidly, and the honey becomes sour. In thoroughly ripened honey it is very probable that a film of thinner honey is always present; but in such a case the sugar content is so high that the bacteria cannot grow."

Mr Hopkins: Is your paper written from a theoretical point of view or as the result of practical experience?

Mr Ireland: It is from the knowledge which I have gained from practical experience.

Mr Allan agreed with Mr Ireland that too less area of honey they exposed to the atmosphere in New Zealand the better. He did not want to say anything about those cases where artificial warmth was given; but moved, "That we, as an Association, discourage the use of any system of the artificial ripening and too early extracting of honey."

Mr Cottrell seconded the motion, and said that unless they produced an article which would keep and could be relied upon, they had better go out of the business. He always was of opinion that honey that was extracted before it was naturally ripened lost its aroma. The aroma was a very fleeting constituent of honey, and unless it was retained they militated very greatly against the cultivation of a taste for honey. The humid climate of the North Island would not successfully ripen their honey by exposure to the atmosphere. It was possible to do it by the use of machinery—by boiling in vacuo.

Mr T. W. Kirk said that in the revised edition of the "Bulletin," which was now being prepared, the statements on this subject had been modified.

Mr Gibb said that while in Dunedin at the University, he obtained a specimen of a certain apiarist's honey, fresh from the boxes. Analysis showed it to have a specific gravity of 1.435 and 16 per cent of free water. Three months later he bought a specimen of the same honey from a shop, and on analysis its specific gravity was found to have changed from 1.435 to 1.418, while the free water in it had risen from 16 per cent to 20 per cent, showing that it had absorbed water from the air in the meantime.

Mr. Hopkins in defending the artificial ripening process, said they had to take every short-cut in beekeeping, and honey, instead of getting dearer, would get cheaper, and they must find some way of reducing expenses. He contended that honey could be ripened outside the hive in Canterbury, Wellington and Auckland. As for the alleged loss of flavour, he thought that was ridiculous, for he had got people to test the two kinds of honey, and they couldn't tell the difference between that ripened inside the hive and that ripened outside the hive. With regard to the rising of the scum, this would not come to the surface so readily in a deep tank as in a shallow one. In the "Bulletin" he said it remained for each to please himself whether he ripened his honey inside or outside the hive, but the question was of such importance that it would be well for everyone to give each system a trial side by side and note the results.

Mr. Moreland advocated the natural ripening of honey inside the hive.

Mr. Ireland said that he could see that beekeepers were almost unanimous in favour of ripening honey inside the hive, and he was glad to see it. It was the best way, and one ran no risks.

The motion was then put to the meeting, and carried.

THE RIPENING AND MARKETING OF HONEY.

(By D. LEA.)

Mr. President, Chairman, Ladies and Gentlemen,—When Mr. Brickell did me the honour of asking me to read to this conference a paper on the Ripening and Marketing of Honey I refused. My reasons for refusing were twofold. In the first place, I felt that I was lacking in the experience necessary, and in the second place that as I owed my first knowledge of the subject to Mr. I. Hopkins, an abler and more experienced beekeeper than myself, it was he who should read this paper, and not I. But apart from these two reasons, I have little of real value to tell, and can only recount a few general experiences and experiments. However, it does sometimes happen that in the history of one man's failure lies the clue to another man's success; and if anything I can say helps others of wider experience to see daylight where I grope in the dark, then this paper will have accomplished all that I ever hope for it, and much more than I claim for it.

Compared to many beefarmers in New Zealand, my output is small, and the number of my colonies few. Circumstances pitchforked me into the business five years ago, and I was at that time absolutely ignorant of all things connected with it. The inducements I had to take up beefarming were that I was not afraid of bees and that to anyone who could use tools the business was full of opportunities for putting in one's own work. And before going further I should like to put on record the never-failing help and courtesy I have received from Mr. Hopkins and others to whom I have applied in their official capacity for information.

I will first deal with the ripening of honey, since to market honey which is unripe is folly of the worst kind. Everywhere one goes the old complaint is heard of honey blowing out the tops of tins or running out of glass jars by reason of fermentation, and it was early borne in upon me that to be able to say with confidence that my honey would not ferment would be a selling point of great value. It was not long before I found that Mr. Hopkins had in his Bulletin No 18 given to us the information I required. Here was a method of testing one's honey and of obtaining a figure to say whether it was fit for market or no. I refer, of course, to the hydrometer and its use in determining the specific gravity of honey. I have used the hydrometer now for five seasons, and though it leaves much to be desired, it is still the only reliable guide to ripeness that I know of. In his Bulletin No. 18 Mr. Hopkins gives some figures to be used as a standard of ripeness. My experience goes to show that although those figures are a reliable guide, yet they require qualifying by the statement that every beefarmer must get his own standards for his own district. This can only be done by each beefarmer systematically taking samples of his crop year by year, keeping records of the specific gravities of those samples and noting the behaviour of each with the lapse of time. I know of nothing that varies so widely in quality, flavour and texture as honey, and that variation takes place not only in areas closely situated to one another, but also month by month in any single locality. To illustrate what I mean, let me say that I have never been able in my locality to obtain clover honey of a specific gravity as high as Mr. Hopkins' standards. It caused me some uneasiness at first that I could not do so, since I have seen honey of the same specific gravity as my own, but from another locality, ferment in six months. Still time has proved to me that there were no grounds for uneasiness on my part, and further that the axiom that Mr. Hopkins lays down that "the higher the specific gravity the better," also needs explaining and qualifying. Although that axiom is probably quite true when considering the keeping quality of a honey, yet it can be wholly untrue from the point of view of honey of high specific gravity finding favour with the consumer You all know how difficult it is in cold weather to scoop honey out of tins and glass jars, and it may sound ridiculous to you to suggest that if honey can be scooped out easily as a paste which will spread like butter, it will sell more readily and at a higher price; yet such I find to be the case. And here I would point out that I speak from the beefarmer's point of view in the North Island, where the sale of honey in brichettes wrapped in paper is unsatisfactory, except for a short period in midwinter and where the honey all over seems to be of a less specific gravity than the South Island honey.

As a rule a moist honey, that is, a honey in a paste form, is looked upon with suspicion, but by means of the hydrometer each beefarmer can, if he cares to do so, put his honey on the market in that condition. It is only a question of observation and experiment to determine that specific gravity which gives a pasty graulation, and yet a honey that will keep for eighteen months. And now I come to the crux of the whole question. Can honey which is found to be when extracted of a wrong specific gravity be brought artificially to the correct specific gravity? My answer is that at present I cannot do so. But the bees can, and it is by making use of their skill and the hydrometer, that honey of any required specific gravity can be obtained. This getting control of the specific gravity of honey was the first real practical difficulty I struck. It was very interesting to test one's honey, and to realise that it was of a specific gravity that ensured its keeping, but after all, unless one had control, it was not much use from a practical point of view—at least, so I thought then, since all the honey I did extract was of a specific gravity that ensured its keeping without any trouble on my part. But later, when anxious to extract at the earliest date possible, so as to keep my bees busily and profitably employed, I have at times extracted honey whose keeping properties by ordinary observation were good, but which, on test by the hydrometer, showed as doubtful. The hydrometer is, in my opinion, very valuable, since it stopped me sending to the other side of the world honey which might have fermented (and in one case did do so) before getting on the market. The hydrometer told me to set about getting a quick local sale, so that the honey was eaten long before it thought of fermenting.

I believe that we beefarmers on the West Coast of the North Island suffer more severely for carelessness in the matter of ripening honey than do beefarmers in other and drier localities. I have noticed many times that extracted honey if left exposed even in a room on a wet day absorbs moisture from the atmosphere rapidly. The school of beefarmers who advocate ripening outside the hive assert that it is the quantity of water in honey that determines how long it will keep without fermenting. Thinking this might be so, and being fully alive to the many advantages to be derived from a method of artificial ripening, I set about trying to get information on ripening honey outside the hive. Mr. Hopkins and the late Alexander, of the United States of America, and others, are advocates of ripening outside the hive. Except from Mr. Hopkins, I received no assistance whatever, so there seemed to be nothing for it but to go ahead and try for oneself. At first it sounded very simple. "To ripen honey artificially a large surface had to be exposed to a warm, dry atmosphere." I built a new honey room on the strength of this, put in new tanks of large surface, and an oil heater, and sat back, confidently expecting to see the specific gravity of my honey increase by leaps and bounds. In reality it did nothing of the sort. It either remained exactly the same until the honey began to granulate in the tanks, or else it began to go back, so that I was glad to bottle it off at once.

During the following winter I came to the conclusion that the fault must be mine. Probably the heating plant was not sufficiently powerful; probably the honey granulated before the surplus moisture could be evaporated out, and in some way in which I did not recognise the surplus moisture became locked up in the granulated honey. And so I built yet another and a larger honey room, match-lined throughout and arranged so that I could keep it night and day at a temperature of about 90deg. F. And again I tried to ripen honey artificially, and so far from the specific gravity increasing, in some cases it decreased, although the honey was maintained at a temperature of between 80deg. and 90deg. F. day and night for a fortnight or more.

The next point I looked to was ventilation. Perhaps, I thought, the ventilation is bad, so I put in a ventilating chimney with a sliding door to control the rate. The result was exactly the same. I then made a wet and dry bulb thermometer so that I might be satisfied as to the dryness of the atmosphere, and it showed that in my honey room when it was pouring with rain the difference between the readings of the two thermometers was 10deg. to 12deg. This meant a very dry atmosphere indeed. I gave it up after that as a bad job, winding up with a test of 100lb of honey taken absolutely green from the combs and spread out so shallow that the greatest depth was about 1½in. The surface exposed to my really hot and dry atmosphere was 10 square feet. Surely now, I thought, if one can ripen honey outside the hive, this 100lb of honey will be riper than any honey ever was before. The honey lay for three weeks at 90deg. F., and again I can only say that I failed. I sent the most of the honey Home as an experiment to see how it travelled, and, of course, it fermented. I also sent a sample to Mr. Hopkins, giving the facts and asking for an opinion; but unfortunately the sample got mixed up with some others, my name was lost off it, and Mr. Hopkins informed me that the editor of the "N.Z. Farmer" had eaten it, and on the whole it was rather poor honey. I had a good laugh over this, but felt I was not much further on. It is then, as I said at the beginning of this paper, just failure after failure that I have to tell of. Still here and there things happened that needed further investigation. A smear of honey on the side of a tank set like varnish. A drop of honey hanging from a strainer dried so that it never dropped, but could be pulled off and squeezed between finger and thumb like putty and leave no stickiness behind. Judging by these facts, it was after all quite possible to evaporate honey down to a consistency so thick that it became absolutely dry and no longer sticky. If this were possible with drops of honey, one would imagine that 100lb of honey spread out in a layer only 1½in thick would at least show a tendency towards doing the same thing. It did not,

however. It did the opposite sometimes. And now again this year when I thought to read this paper I made another test under the same conditions, and the result was exactly the same. The honey would not ripen at all, and I was glad to sell it cheap for cooking purposes a month ago, with a guarantee to the effect that it would ferment in a few weeks; yet again this year I have noticed that smears and drops of honey dry up as already described, and I am completely at a loss to explain why larger quantities of honey in the same room do not at least show a tendency towards doing the same. The fact remains they do not.

In spite of the fact that the original purpose for which I put in a rather expensive heating plant is so far abortive, yet I feel convinced that it is a good thing to have. I am also convinced that to let honey that is already ripe lie in a tank exposed to a warm, dry atmosphere improves its flavour. Mr. Hopkins has called this "maturing." I can give no proof of what I say—it is a conviction born of five years' tasting and observation and praise my honey has received. The heating plant is useful also in that if cold nights come along, and the honey cannot be bottled or tinned off at the time, it can be left lying in the tanks with the certain knowledge that it will not granulate or deteriorate by absorbing moisture from the atmosphere or by overheating, but rather it will improve in flavour or "mature," as Mr. Hopkins has called it. I have then failed completely to ripen honey outside the hive. I still believe it is possible to do it to some extent, because of the drying up of smears and drops of honey already mentioned. I am also of the opinion that if it were possible to ripen honey with certainty by artificial means the gain would be enormous. I think it is also true that honey left with the bees until wholly capped is of a finer flavour than honey taken before it is all capped. It is possible to take honey long before it is all capped, given certain conditions, and to "mature" it in tanks seems to make up for the flavour lost by taking it thus early.

To those of you who handle your honey by tens of tons and your colonies by hundreds, these points may not appeal. I am speaking from the point of view of a man who goes for the very finest honey for table use, high prices, fewer colonies and closer individual attention to each, so that his colonies return to him nearly as much as three colonies would under other conditions.

Before leaving this subject of ripening I should like to digress for a few minutes into the land of theory. You must, I think, have noticed when opening a hive in the height of the honey flow the strong smell of formic acid. In just the first few seconds allowed for observation before the bees take alarm you must have noticed the peculiar working of the bodies of those bees on the surplus honey combs. You must have noticed how the bees lift their tails in the air with the sting out and formic acid hanging in drops on the sting. It seems to be one of Nature's laws that an organ which is not used atrophies. If man took no hand in the management of bees, if bees lived dotted here and there over the countryside so that even robber bees were few and perhaps non-existent, I have an idea that the bees' sting would have atrophied long ago, unless it has another purpose to fulfil. This year I tested honey just fresh in from the field and honey fully capped over by means of litmus paper. The capped honey showed the presence of some acid. The uncapped and very new honey showed no acid reaction. It was an isolated test, done in an idle moment, and may mean much or little. The same test applied to honey before it matured and after maturing, seemed to show a stronger acid reaction after maturing. I suggest for what it is worth that the exposure of honey to a warm, dry atmosphere is only one factor in the problem of artificially ripening honey, and not by any means the complete solution. By means of another practical test with which I will not bother you by describing, I proved, at least to my own satisfaction, that a bee can in a few seconds discard the surplus water in nectar and retain only a concentrated sweet matter in its honey sac. It is because of that experiment that I am of the opinion that the ripening of honey by the bees consists in not merely evaporating out the surplus moisture by the hive heat, but by the bees going over and over the honey in a cell and by means of some digestive process best understood by themselves, absorbing the surplus moisture into their lower stomach and returning the thicker sweet matter to the comb. This process is a continuous one until the cell is ready to be capped, and then I imagine, or possibly at intervals in the filling of the cell, formic acid is added, and it is that formic acid which gives that peculiarly fine flavour to honey that is capped over. Literally bees do not gather honey. They make it in the hive from nectar gathered in the field, and the whole process is, so far as I can observe, too complicated to reproduce in a honey room, although one step in the process seems to be exposure of the nectar to a warm, dry atmosphere.

The more obvious conclusion is perhaps to be arrived at not by fanciful theories, but by the fact that I have in all probability never got hold of the right end of the stick in trying to ripen honey artificially. I think that is quite likely, but one cannot write a paper of the length I have been asked to write by starting with that remark, so I have left it till towards the end.

But whether you can ripen your honey artificially or can only do it with the help of the bees, as I have to do, the next problem is how, when, and where and at what price to market it.

Knowing what good honey sells for retail on the Home market, and knowing that the Home honey is the standard by which the world's honeys are judged, I have not the least hesitation in saying that practically the whole of New Zealand honey if properly ripened might be sold wholesale in New Zealand at nearly double the present prices. Also it might be retailed at half as much again as the present retail prices. So far as I am concerned there is no argument about this. I have been doing it for five years against local competition of a fairly formidable kind, and I have sold wholesale and retail.

When sugar was invented honey became a luxury, and luxuries have got to be paid for by higher prices than everyday commodities fetch. The sort of thing that I see going on in my district is this: The beefarmer collects a lot of old benzine tins, holding about 56lb, and sells to the grocer at 3½d to 4d a pound. The grocer lets the honey candy solid, cuts away the tin, and hacks off sticky pounds of honey to his customers at 8d a pound, and so makes 100 per cent profit or more. It reminds one of the old way of selling butter before the neat 1lb pats came into vogue. Now that honey might just as easily be sold in New Zealand for 1/ a lb retail and the beefarmer might just as easily get 8d a lb instead of 4d, still leaving the grocer a 50 per cent profit, which would, were he making it on all his lines, enable him to retire in about five years. I have seen Jamaica honey, which brings 3d a lb in bulk, on the Home market, and it is a wretched, flavourless honey, bottled by a firm with a big reputation and exported under their label to New Zealand, where it fetches 1/6 per 1lb bottle. The name on the label does the trick, and these figures are facts.

We are simply being bled by the middleman at present, and we are ourselves to blame, for we have but to say that we will not sell at the present prices they offer to get the prices we name.

Holding such revolutionary ideas, I, of course, fell foul of the middleman and was laughed at. However, he laughs longest who laughs last, and I made up my mind to do my own retailing, and I have never regretted it. My first and last word to all beefarmers who sell their honey locally is to cut out the middleman. Take a high hand for once and refuse to sell to him. If we have to sell wholesale to him at 4d a lb and still make a living, then by retailing half our output at 1/ to 11d a lb in glass jars we are just as well off monetarily, and we then also have the whip hand of the middleman, since we can, being independent, dictate to him as to price on a "take it or leave it basis." We beefarmers have only got to do it to find it is done.

Last year in London honey sold at 1/6 a lb retail, and 1/ a lb retail is a very ordinary price. In this country, where materials and labour cost much more than in the Old Country, and the cost of living higher all round, we sell our honey at times as low as 3½d a lb wholesale, and the grocer retails as 3½d a lb wholesale, and the grocer retails at 7d to 8d. It is ridiculous. On the Home market we will be bled in just the same way, and our honey will, I believe, make but 4d a lb. It will, however, be retailed at 1/. The only answer that I know to that is once more. Cut out the middleman, i.e., this time the merchant, and combine to sell to the grocer direct through our own representative at Home.

It is, however, no use thinking of doing these things unless each man will guarantee that his honey will keep for at least a year. It is no good trying to sell New Zealand honey at high prices under New Zealand's name unless it is above suspicion. If, however, a man cares to run, say, 100 colonies in place of 200; if he cares to make so sure of his honey keeping that he can say, "I will refund the money for all honey that ferments"; if he dares to say to the grocer in New Zealand, "You must sell my honey at 1/ a lb under my name and label, or else I will not sell to you at all"; if he will start in and get his own connection together and give delivery himself and retail, guaranteeing satisfaction to his customers—I say if he cares to, dares to, and does do these things he will find that he is making more money with half the capital outlay and half the work in the summer, and will have something to keep him pleasantly employed in the winter months. He will find, too, that he can do it quite easily even against competition working on the lines of so many colonies that the work is a rush in the summer, and such low prices that all those colonies have to be kept to make it pay at all well. Prices are low all round because so much honey is of doubtful keeping quality.

There is, as the circular recently sent to me in connection with this conference says, an enormous latent market for honey in New Zealand. The circular goes on to say that the advertising to be done to create and develop this market must be done collectively and not individually. And that is just the point that I disagree upon with that circular. One real live man determined to retail his own honey at top prices because he can guarantee it will keep, that it is clean and of good quality, will do more useful advertising than all the collective efforts. The best advertisement that I know of good honey is to go and sell good honey personally. If the stand I advocate against the middleman were taken, and if the Home market be used for the purpose of disposing of our surplus in order that the local markets may not at any time be flooded, then I think in a very short time the importance of our local market would increase by leaps and bounds, and local prices would everywhere be enhanced. A certain amount of useful advertising can and will, I hope, be done by the association, but to get any further on each of us must principally rely on his own efforts, seeking encouragement from the fact that a paternal association is at the back of us, and is the good, solid foundation upon which each of us may build our business securely. I have now to some extent tried to answer the "where" and "at what price" of this question of marketing honey. The question of "in what form" and "at what time of year" to market honey is best left, I think, to the individual. Local conditions vary too widely to speak with certainty, or to say that one way is better than another. It depends entirely upon local requirements, and it is the local market, I think, that demands attention far more than the Home market. The latter should, I think, be used at present only in so far as it will help exploit the former.

In conclusion, I can imagine no better thing for bee-farming in New Zealand than that bee-farmers should resolve to halve the number of their colonies and double the price of their honey by doing their own retailing wherever they can. Then when the prices have advanced, as they must under such treatment, I think many of us would wonder why we never thought of doing it before. New Zealand honey is the only honey in the world that can stand comparison with the finest of Home honey, and the comparison is almost, if not quite, in favour of New Zealand honey.

Higher prices mean a chance to run fewer colonies. Fewer colonies mean closer individual attention and less disease. Financially it means half the capital outlay for the same return.

It is often the last few words that a man speaks that are remembered longest, and this fact "that the whole of the good honey in New Zealand is being sold at about half its real value by the beefarmer" are the words that I hope will haunt every one here for a very long time indeed.

Mr Lea was loudly applauded as he resumed his seat after reading his paper.

Mr Gibb congratulated Mr Lea on the excellence of his paper, and said that he believed it possible to ripen honey outside the hive, though he did not advocate it at all. Referring to the carelessness of apiarists in marketing their goods, Mr Gibb said he had seen excellent honey put up in petrol tins in Dunedin, and he proposed that the Health Department should be asked to prohibit the use of petrol tins and cases for honey.

A Voice: No, no, no.

Mr Baines had endeavoured to get into direct touch with the retailers, but found it better to deal in a large way with a merchant rather than take orders for a case or two here and there from retailers.

Mr Hutchinson also had tried selling direct to the retailers, with unsatisfactory results. Now they had an agent in the city where they did business, and the honey was the property of Hutchinson Bros. until it was sold. They sold from month to month at prices stipulated, allowing 5 per cent as well as the 2½ per cent trade discount, and found the system work very satisfactorily. What one man had done individually they could do collectively.

Mr Hobbs was another who had tried artificial ripening with indifferent success. He strongly advocated ripening in the hives. To dispose of honey locally they had gone round to the houses in various towns and sold honey direct to the consumer, and they were not troubled with bad debts because they did a cash business.

Mr Ireland did not think that petrol tins and cases should be used for the London market, but did not think they should be prohibited for sales to grocers, who bought in bulk and put it up in smaller quantities.

Mr W. E. Barker also opposed the suggestion to entirely prohibit the use of these tins.

Mr Gibb said they were all aware of the time that farmers put up butter in all sorts of contrivances. He had taken it home in a cabbage-leaf. And what was the price?

A member: Little more than the cabbage-leaf.

Mr Ward mentioned at this stage that the Pure Foods Act in force this year stopped the use of second-hand containers. (Applause.)

The President said the Association had in view a scheme by which all their honey would be attractively got up in neat packages, and handled in much the same way as they handled butter.

THE PROGRESS OF THE INDUSTRY.

An address was given by Mr T. W. Kirk, F.L.S., on "The Progress of the Industry and the Efficiency of the present Apiaries Act." Dealing with the early history of the industry, Mr Kirk said bees were supposed to have been introduced into New Zealand in 1839. In 1840 another lot was brought out by Lady Hobson. In 1842 Mr Allen introduced some into Nelson, and in 1880 the first Italian bees were said to have been introduced. Many people went in for beekeeping; he didn't say they were beekeepers, but they kept bees. In 1880 foul brood became very troublesome throughout New Zealand, and it seemed as if it was seriously to interfere with the young industry. About ten years from that time the disease had spread to practically every district. In 1905 the Department of Agriculture began to step into the bee industry. It realised that if bee-keeping was to become a considerable industry in New Zealand it was necessary to have legislation to control this disease. In 1907 the present Apiaries Act was passed, and the first officer to administer this Act was Mr. I. Hopkins. The Department was very lucky to get him. The 1907 Act was not the first attempt to place legislation to control bee diseases on the Statute Book. As far back as 1888 Mr. Hopkins and others drafted a bill, but it never got on to the Statute Book. When the 1907 Act was passed disease had become very prevalent, and those who had money were afraid to put it into the industry. Exactly the same position obtained in the fruit industry. But now things had so far improved that apiarists had confidence in increasing their stocks and their output. As an evidence of the growth of the industry, the 1906 census showed that there were 15,396 keepers of bees in the Dominion, the number of colonies they had was 74,000, the output of honey was 1,003,940lb, wax amounted to 31,682lb, and the total value was £22,235. According to the census of 1911 the keepers of bees numbered 11,002, with 71,584 colonies. The output of honey was 1,457,272lb and wax 28,060lb, with a total value of £32,113. The figures for 1913 showed 11,200 beekeepers, with 72,340 colonies. A conservative estimate of the value of the season's output was £45,000. (Applause.) Mr. Kirk went on to draw the attention of the association to the material they had to federate upon in these 11,000 beekeepers, less than 200 of whom were at present members of the association. Something should be done to alter this.

The steady enforcement of the Act, the destruction of the diseased colonies, and the great reduction of the disease-breeding box-hive had resulted in the steady increase of the industry. The increase would have been very much greater last year had it not been that many colonies were lost during winter and spring.

Touching on the question of adulterated honey, Mr. Kirk said that samples had been analysed, and in one case it was found that the specimen contained 37 per cent of cane sugar. At the same time there was no power for the Agricultural Department to take action, and the Health Department was in a similar position. He drew the attention of the Health Department to the matter, and regulations have since been issued under the Pure Food and Drugs Act by which such cases as this could be dealt with. He thought that this would effectually prevent the sale of adulterated honey on New Zealand markets in future. So far as experimental work was concerned, the Department had done a great deal of co-operative work in connection with the farmers and fruit-growers, and now the work was being extended to the apiarist.

He held it absolutely necessary to get an export trade established, and instanced the effect that it had had on the fruit-growing and dairying industries. So far as the marketing of honey was concerned, petrol tins and cases must not be used for the London markets. If they put honey in these petrol or kerosene tins there was an immediate suggestion of taint, no matter how carefully the tins have been cleansed, or the boxes the tins have been turned inside out. It would be well to lacquer all tins for export; it cost little, and was a great advantage. They could not get up their packages too well. A good get-up will frequently sell an inferior article, but a bad get-up will damn the best. (Hear, hear.) The necessity for hearty co-operation was absolute in this matter of export. He would suggest that they did not start a co-operative concern with insufficient capital. When they had it started properly they should put it into the hands of a good, smart business man, and leave him alone. (Applause.) If they would make a success of the industry they must take a lesson from the bees themselves, and work in common for the common weal. (Applause.)

Mr. Cottrell thanked Mr. Kirk for his address, and Mr. Bartlett-Miller proposed a hearty vote of thanks, not only for his address but for the continued and intense interest which he took in the industry. This was carried by acclamation.

Mr. Brickell moved that a committee, consisting of Messrs. Rentoul, Pearson, Gilling, and Gibb, should consider the Apiaries Act and report as to any amendments which might be thought necessary. This was agreed to.

HOW SHOULD WE PUT NEW ZEALAND HONEY ON THE HOME MARKET?

(By W. HOOPER TEED.)

It is self-evident that before an article can be put up for sale its worth must be appraised, and in the case of honey we say it is judged or graded. This is usually done by experts, especially if a large quantity is offered for sale at one time. We in New Zealand have two markets open to us, the home and the export one. In the present instance, however, we shall more directly dwell upon the aspects of the latter; but the New Zealand one must not be lost sight of.

John Bull is very apt to think that his way of doing things is quite the right one, and what appeals to him must necessarily appeal to others, although they may live under other conditions, and whose tastes may have been formed under different circumstances. We in New Zealand think that our taste in honey leaves nothing to be desired. This may be quite true, but we must not forget that this taste will not necessarily be shared by those who have not had the opportunity of acquiring the taste for a fine-grained honey. This fine grain is caused through the honey granulating quickly, and applies to other substances as well—sugar and salt, for instance. A fine-grained table salt is obtained through the moisture being evaporated by artificial heat, whereas in cooking salt the brine is poured into shallow pans and the moisture is driven off at the ordinary atmospheric temperature.

In the case of honey, however, it is now recognised that changes in temperature are the chief factor in producing this granulation, and the wider the range the more quickly does this come about. In the Auckland province the range of temperature is about twice what it is in England, hence our fine-grained honey; in the South the range may not be so marked, the consequence is their honey will have a coarser grain. It will be seen therefore that people who live in England have never been in a position of acquiring the taste for a fine-grained honey, nor will they in the future, for our product must necessarily be shipped in bulk, and on arrival, after it has been reliquefied and bottled, will, no doubt, on regranulation, take on much the same characteristics as honey of a similar class which is produced in the place to which it is sent. In this paper we more especially refer to clover honey grown in New Zealand, which, in its liquid form, very much resembles that grown in England; the latter, however, takes about three months to granulate, and sections may sometimes be kept eighteen months before granulation can be detected; it is therefore much coarser in grain. The consequence is most people prefer liquid to granulated honey, and no doubt a very large proportion is sold and eaten before it has had time to granulate.

The English taste in honey may be very easily gauged by visiting any county show, and for one sample of granulated honey you will see about ten of liquid, and probably the same number of sections. By way of parenthesis, we may here say that these county shows are run under the guidance of the British Beekeepers' Association, with which the county associations are affiliated, so that none but British honey is shown there. There are, however, three shows to which New Zealand could be sent; these take place in London towards the end of September, during three consecutive weeks, and are called respectively the Dairymen's, the Bakers and Confectioners', and the Grocers'. We see that the High Commissioner had a display of New Zealand dairy produce at the first-named one last year, and we think he should be approached to have honey included in his exhibit this year, and there is no reason why New Zealand honey should not be represented at the other two as well. These shows are got up by the different trades mentioned, and are exclusively for trade purposes; they are not run to make a profit out of the people who visit them; anyone who may be interested can get a free pass by applying to the right quarter—that is, to any of the firms who may have goods on exhibition.

It may be inferred from the foregoing that we are against grading in New Zealand be-

fore shipment; on the contrary, we think it would be beneficial and would prevent unsound honey being sent away; it would also be an indication as to how it should be classified on arrival. It will, however, be of no value commercially, for how is anyone to say what the honey will be like in colour and consistency when it is liquefied? To give an instance that has come under our own notice: Two honeys in their liquid form were shown at the Waikato Central Show at Cambridge in March, 1912. One was far and away the better of the two, both in colour and consistency, and was awarded the first prize. If the other had been graded according to English methods it would have been classed as medium. There are three classes—light, medium and dark. Heather honey has one to itself. The same two honeys were again shown at the Waikato Winter Show at Hamilton in July as granulated honey, but the one which had taken the first prize at Cambridge was third on the list as granulated honey, the other coming in first, but it again took the first prize as liquid honey We would point out that colour and consistency take a high place in the estimation of the British public, and if grading is to have a commercial value it must be done at Home as well as in New Zealand. We would suggest that the High Commissioner should appoint a man for this purpose; his salary or commission need not, however, come out of the New Zealand taxpayers' pocket, for the exporters could be charged so much per cent on their sales, and the High Commissioner would thus reimburse himself for the outlay. This could be easily done, seeing that it is now agreed that all New Zealand honey put on the English market should be concentrated in the hands of one firm, who would fix the price, and not leave this to the merchants, as obtains at present. The expert grader, representing the exporters, would therefore be in close touch with the brokers and could advise and consult with them as to the price to be put on the product. The reason for putting the grader under the control of the High Commissioner is obvious, for were he appointed by the New Zealand Beekeepers, they would have no hold on him, and he would probably become a law unto himself.

As already pointed out, our clover honey in its liquid state very much resembles that of England; it should be our endeavour to provide that it should also resemble it in the form in which it is offered to the British public, for, as it has often been remarked, they are very conservative in their tastes.

For this purpose it should be put up in 1lb and 4lb jars, the former being the more usually asked for. If sold to the large produce merchants they will no doubt adopt this plan and reap the advantage by passing off as English. This would not matter so much if the English honey seasons were consistent and we knew what quantity was likely to be applied for, our shipments being fairly regular; but after a good English honey harvest it is reasonable to predict that the demands on our product would considerably decrease. If, however, our jars had a New Zealand label on them, people, in course of time, would know and appreciate our honey, and as the price would be somewhat lower they would naturally ask for ours instead of the English article. The question now arises, Are we able to get these labels put on our jars? If some arrangement could be come to between our agents in England whereby the honey could be reliquefied in bulk before it was placed on the market, it would, in the first place, be much more easily graded than if a sample were taken from every 56lb tin and liquefied separately. The grader could then hand over to the bottlers the number of labels required, which in themselves would constitute certificates as to the class of honey they represented. If the honey were not considered sufficiently worthy to be classed as a table honey, no labels should be issued, and it would have to find its way to the confectioners at a lower price. We would here point out that all the South Australian honey which finds it way to England is reliquefied and bottled on arrival before being placed on the market, the headquarters being Bristol. We understand it is all taken up by one firm, but who, no doubt, have to employ brokers in different centres to dispose of it. Whether it is bottled by themselves or handed over to a firm of bottlers for this purpose makes no material difference, as, for instance, it is well known that Bass' ale and Guinness' stout are not bottled by the firms who produce them. We would also like to draw your attention that the South Australians have found out that it is more advantageous to send their honey to Bristol instead of London. The writer can bear this out in the matter of fruit grown forty miles north-west of London, for which he obtained 20 to 30 per cent more in Bristol and Liverpool than he could get in London, although he had to send it five times the distance. Mr. Lysmar, the organiser for the Bristol and Dominion Producers' Association, says: "All inquiries go to show that there is a better and more reliable market in the western cities than there is in London. There are too many associations which exist in London and assist the Londoner, but are detrimental to the producer; but these organisations do not exist to the same extent in the west."

There is also another reason why honey should be graded in its liquid form when it is sold as such. This statement is borne out by the editor of the "British Bee Journal," who about five or six years ago in answer to the question, Why should honey that has granulated be liquefied before being judged? answered: "Honey is composed of two substances, dextrose and levulose, and if the honey be new, a third, sucrose, is present in small quantities, but is afterwards converted into the other two; the dextrose granulates more quickly than the levulose, and in so doing is separated from it, and in order that the real flavour be obtained the honey should be well mixed after being liquefied." This separation is very conspicuous in some honeys where we find, after a slow granulation has partly taken place, some still liquid floating on the other. This is still more conspicuous in some cases where the honey has been previously reliquefied. Some beekeepers will say it was not ripe, and the liquid part should be drained off. To exemplify this action in granulation we may notice what takes place in cold countries where the temperature falls low enough to partially freeze a barrel of beer; the alcohol is separated from the other part of the liquor and, of course, cannot be frozen. The remainder when liquid no one has a name for.

In our opinion, England will never be able to produce, on account of her unsettled climate, the amount of honey she consumes. She might possibly be able to do so in a good year, but these good years only come on an average of one in three. It may very likely be said she could do so if more bees were kept. The answer to this is, that for a season below the average too many bees are already kept, and it occasionally takes them all their time to gather enough honey to keep them going during what should be the honey flow, and afterwards have to be fed to carry them through the winter. It is self-evident if there were fewer bees the nectar available would serve a small number better than a large one. To give an instance: The writer in 1907 had twenty-seven hives, all well stocked with bees, and at the end of the season took 40lb from the whole lot. A neighbour who lived one mile and a-half away, in the same kind of country, who had only three hives, took double the amount. Mr. Wm. Herrod, the expert to the British Beekeepers' Association, in his private apiary, eighteen miles away and in better country, with about fifty hives, had absolutely no surplus at all, and some of his bees had to be fed during what should have been the honey flow. It cannot be said his apiary was mismanged, except that he had too many bees. These remarks may, no doubt, be applied to the season of 1912, which from all accounts was equally as bad, and one or two years as well since 1907 have been considerably below what may be called an average good year.

It may perhaps be remarked that Germany, in the same latitude, produces enough honey for her requirements. Then why should not England? The answer is quite clear: Their summer is very much more settled as a rule, continuous rain being of very rare occurrence, but occasional thunder showers keep the vegetation fresh; it is also on an average warmer. The writer in his school days spent two winters and one summer in North Germany, and remembers that bathing in the river lasted from the third week in April to the middle of October.

The farming of winter forage in Germany is also different to what it is in England; root crops are mostly grown for this purpose (the mangel-wurzel originated in Germany, the name signifying the root of necessity), whereas in England grass hay is the predominating forage for this purpose. The consequence is that before the hay is gathered, especially if the spring has been at all dry, pasture forage is very scant until the cattle are turned on to the land that had been reserved for hay. When this is done, or rather as soon as one hears the whirr of the reaping machine, the honey flow is practically at an end. This is about the middle of July, and it only began about the first week in June, when the white clover comes into bloom, a matter of six weeks against that of Germany of very nearly six months.

If the proposal to exclude all New Zealand honey from export except that which, according to New Zealand ideas, may be certified as first grade, be carried out, it will place a very severe handicap on some of our beekeepers, and they will be obliged to try and find a sale for their product in a New Zealand overstocked market, but we think it has been conclusively shown that if it is graded on arrival in England as well, this need not necessarily happen, and the one market will to a great extent counterbalance the other.

This was the impression left by last year's conference. We are, however, pleased to hear this has since been modified, and it is now proposed that only unsound honey will be debarred from export.

In conclusion, we would emphasise this, also that it should be concentrated into the hands of one firm, who will then have the power to fix the price, and that it should be sent in regular shipments to a West of England port in preference to London. If this is done there is no doubt there is a great future before us, for it must be said the production of New Zealand honey, at the present time, is only in its early infancy.

The President said that the export trade which they were developing was with the West Coast of England. The honey went to Liverpool and also to Glasgow, where they had found that tea-tree honey would probably sell as well as New Zealand heather honey. It was of similar flavour as the Scotch heather honey. The association's view was not to exclude any honey, except the very poorest, but a right class of honey was to go to the port and district best suited to it. He believed that there was a great future for the dark honey of New Zealand.

Mr. Brickell, as an illustration of what takes place on the English markets, read the following letter from Mr. E. B. Sanderson, of Lower Hutt:—"On arrival here the honey is put into a broker's hands to be auctioned and sold to wholesale dealers, who then put it up into jars (glass or porcelain, sometimes in the shape of skeps). The honey is then purchased in the jars by the retailers in such small quantities as their immediate requirements warrant, and sold to the general public. Honey realises retail in, say, 2lb jars, 6d to 10d per lb. Please don't think this system is easily altered. These English people are mighty careful and very chary of anything new. The struggle for a livelihood is very keen, and if any of the dealers could be cut out they would be. I am, however, going carefully into the whole thing for myself, and may be in a position to give reliable information as to a possible plan to get a better price later on. At present it seems to me the best plan is to keep sending a good article in 60lb cans, properly made, until a market is established. Your trial shipments are only treated as job lots. After visiting the provinces, I am going over to the Continent, and the honey question will receive attention there. Narbonne honey from South France seems the pet honey here."

Mr Hooper Teed did not think the writer had seen English honey; it must have been foreign honey.

Mr J. B. Adams was of opinion that there was a large market for New Zealand dark honey.

Mr Cottrell said that by sending their shipments to one firm and letting that firm fix the price, they would soon be getting English prices. At present the competition was amongst the sellers to get rid of the honey. Let it be sent to one firm, and then the competition would be amongst the buyers to get the honey.

Mr. Hutchinson said that so far as he could see there was only one way to get satisfactory prices on English markets, and that was to get a careful grading and a bottling depot at home where their honey would be put up in glass jars. The saving on not having to import the jars into New Zealand would more than pay the expense of bottling. He did not think that selling in bulk through brokers would ever be successful. So far as dark honey was concerned, he thought that if some of their best dark honey were sent to Scotland and labelled "New Zealand Heather Honey" it would pay well. If some of the far-famed heather honey of Scotland were sent out here it would not realise 3½d.

In reply to a query as to what constituted a first-grade English honey, Mr. Bowman said they gave a fairly wide range so as not to discourage any honey. So far as the English market was concerned a dead white honey would not bring the best price; America would be the best place for a very pale honey. A creamy colour would be best for the Home market. White clover was the recognised standard and a nice, fine, buttery grain with a good, full, mellow flavour and aroma was to be aimed at. "What has really made heather honey so much talked about is the egotistical Scot." (Laughter.)

On the motion of Mr. Brickell a committee of three was appointed to frame resolutions on the question of export.

SECOND DAY.

Mr. G. Ward, of Porirua, gave a demonstration and explanation of an improved feeder, and went on to read a short paper on the question of honey export. In the first place, he considered the first and most necessary step was for the producers to combine and be of one mind as far as the export of their honey goes. It was the petty competition that tended to destroy the prices. Secondly, they should arrange for the honey intended for export to be deposited at a given centre, where it could be graded and certified by the Government experts. Honey for export should be packed only in new tins, and those of a particular pattern. A certificate of grade and quality should be affixed to each tin by the Government grader. Mr. Ward thought that the best weight for each tin to contain was 56lb. So far as the disposal of the honey was concerned, he thought the High Commissioner should be asked to select one reliable firm to take up the sole agency for New Zealand honey, disposing of the whole lot at prices which the association could stipulate. It would soon be recognised that New Zealand honey was not to be got by cut-throat competition, and a healthy trade could be established. Mr. Ward said he had retailed honey at Home at never less than 1/ per lb for extracted honey, and often as high as 1/6 in glass jars; sections at 1/3 to 1/6 each, never less than 1/.

Mr. E. G. Ward said that as regards putting their honey into the London market alone, it seemed to him that they should not limit themselves but should give attention to other centres.

The President said that the advantages of trade with the West of England had already been realised, and they had appointed Liverpool as the port for the reception of their produce. Eventually the association would have a market for all New Zealand honey, whether dark or light. They were trying to find the most suitable markets for each variety of honey.

Mr. Rentoul considered that the executive had made an excellent start, and would be able to develop their export trade into a big thing.

ITALIANISING THE APIARY.

(By ROBERT STEWART.)

I have been asked to give an article on some aspect of queen-raising at this meeting. I will first take the case of a beekeeper who has black or hybrid bees, from 50 to 150 colonies, and wants to Italianise, yet is so situated that he cannot do it by buying to advantage, and has had little or no previous experience in queen-raising.

He should start by procuring the previous autumn from five to twelve pure untested queens from some reliable breeder; also, if he is in an early district, procuring two at least select tested or breeding queens, as these will also be needed before it is safe to get them through the mails in the spring.

We will take it that the untested queens were introduced to strong colonies, and that the most of them are doing well in the spring. These are to be kept well supplied with stores, and if in any way short are to be fed up so as to be strong in bees early. About six or seven weeks before the usual swarming time each of these colonies is to have a frame of from half to three parts drone comb put in near the centre of the hive and kept well supplied with food, so that brood raising is kept going. When some of them have the first drone cells sealed over it is time to get queen cells started.

Five days previous to its being needed, a frame of bee comb that has not been bred in more than once or twice is inserted in the centre of the brood nest of the colony with the breeding queen. On the fifth day it will have a large patch of eggs in its centre, and the simplest way to prepare it is to cut out an inch strip of the comb along the outer lower edge of the eggs in it; a half-inch strip may be also taken out straight up and down through the centre of the eggs. It is round these edges that the bees will start the queen cells principally.

Here we will go back to the hive that is to receive this prepared frame. Eight or nine days before it is required, take a fairly strong colony whose queens you do not want to keep; one with from five to seven frames of brood and strong in bees will do, the stronger the better. Have a division board made of excluder zinc to fit the hive next so that a queen cannot get round or over it. Now find the queen, put the frame of brood she is on next to the outside frame on one side of the hive, put in the excluder division and crowd up all the other frames of brood next to it. On the eighth or ninth day after take out the two frames the queen is on, kill her, shake all the bees of those two frames and give them to some other colony. This leaves your colony now queenless and with no brood of its own young enough to start queen cells on, but with plenty of nurse bees.

It is now ready for the frame of eggs, which must be taken from the colony selected to breed from, prepared and inserted.

If the weather should not be fine now, or there is no honey coming in, this colony must be fed on a little sugar syrup each evening while cell-building.

If it is strong in bees and weather is fairly warm, a second prepared frame may be put in five days later.

The first one will in a day or two be having the first of its cells capped over. The cells started can be counted, and eight days from the time the prepared frame was given deprive as many colonies of their old queens as you will have cells for.

Two days later the cells can be carefully cut out with a little of the comb round their base and each one inserted in one of the colonies made queenless by cutting out a small piece of comb in one of the frames of brood and carefully putting the cell in its place.

If all goes well, these cells will hatch out in a few days, and the bees being queenless will accept them, and the young queen will herself destroy any other cells they may have begun on their own brood.

When the usual swarming season is about due all hives given cells should on the ninth day from the time of the old queen's removal be carefully examined in case of their keeping their own cells, when they would swarm if allowed to do so. In such a case, if the young queen has hatched out all right, their own cells must be removed.

If all has gone well by the time the young queens are ready to take their first flight there will be a fair number of drones flying from the colonies fed up for that purpose.

All black or undesirable colonies must be prevented from raising any drones, or as few as possible, so that a fair number of the early queens will get a chance to be purely mated. This is about the simplest way to Italianise, as no special outfit, appliances for introducing of queens, or anything not in everyday use in an apiary is required. By using several colonies to raise queens a large number of colonies can be given young Italian queens early in the season.

I would advise anyone who intends to succeed to procure some up-to-date work on queen-rearing, a small outfit of special appliances, and to use two or three colonies to experiment and work on. Also, if within reach of an up-to-date apiarist, try and get him to give a working lesson or two on the subject.

Having got Italian queens at the head of each colony, if it is a district with many black bees about, it will be found that a good many of the young queens have been mismated. This will not interfere with the working capabilities of their bees, but no mismated queen should be used to raise queens from, and as they get aged or fail in any way must be replaced by a young one from a pure mated mother.

In the selection of the queen mother will depend success or failure to a large extent.

It will usually be found safest for one not experienced to use from six to a dozen of the queens in the best doing colonies to raise his young queens from for re-queening, and to procure new stock occasionally from a reliable source, not only to introduce new blood, but to compare with what he already has.

If young queens raised from new stock are superior to his own when tried, they can be used to re-queen all inferior or failing stocks.

As a rule, it will be found best to re queen colonies with bad-tempered, mismated, aged queens, and poor stocks towards the end of the honey season. At that time it will not affect the season's honey yield, and there will be young, vigorous queens ready to go ahead the following spring.

The above should give an apiarist about to Italianise a fair idea of how to proceed.

We will now turn to the man who has mastered the idea of raising queens, but how is he going to keep up the quality of his stock and possibly improve them?

The first necessity to the production of good queens is to have good stock as a foundation, and to have the right conditions when queen-rearing. During the swarming season these conditions are easily obtained.

A colony to raise good queens must be strong in nurse bees, have abundance of honey and pollen coming in. With such conditions cells can be started in a colony deprived of its queen and all brood over seven days old, either on the natural comb, as previously outlined, or prepared artificially, and also in the top storey of any colony that is preparing to swarm.

In using a strong colony to start cells that is not making any attempt to swarm or build cells of its own, lift four or five frames of brood into the top storey and put a half-storey in between top and bottom so that the top is cut off from the queen below by an excluder and the combs of honey in the half-storey. In a few days they will start cells in the top almost as readily as in a queenless colony, so long as honey is coming in plentifully. A separate entrance to the top storey will also assist if it has been in use some little time previous by the bees.

In handling frames with queen cells or the cells themselves they must never be jerked about or roughly handled in any way. If the bees have to be taken off such frames, brush them off with a feather, and never allow cells with young queens to get the least cold or chilled.

From the day the egg is laid by the queen mother to the time a young queen is ready to mate there must be no chance of chilling allowed even for a minute.

Chilling is one of the most prolific sources of inferior and short-lived queens.

In procuring his first Italian stock the apiarist will be well advised to get them from someone of established reputation. Later on he can try different breeders if he has a mind to.

In getting queens by mail it must never be lost sight of that they may be, and sometimes are, permanently injured, in some cases by rough usage, but principally by get-

ting chilled. Even if a queen breeder does his best, the result in such cases is disappointing.

If, however, the damaged queen is bred from, her young stock will be all right and not in any way adversely affected, but she herself will never be as good as formerly. If valuable, young queens should be raised from her as soon as possible, as damaged, such queens are apt to and generally die suddenly in a few months' time, sometimes sooner.

The best way to improve is to breed for it by selection, and this requires constant attention and observation over every colony.

First, note all colonies with serious faults, such as mismated, badly marked, with too much inclination to swarm during the season;

Any that are always strong in bees but do not store honey in proportion to their numbers during honey flow;

Any that easily allow other bees to rob them;

Any that seem to have a larger proportion than the average of small-sized bees or drones in their hives;

Any that are vicious without cause;

Any colonies slow in getting on to forage at a distance;

Any with too little brood during the breeding season to keep the colony populous;

And also any colonies that show larvae replaced by eggs in any large proportion of their unsealed brood.

All with these faults and characteristics are to be ruled out.

Then, to select your **breeders**:

Note the colonies whose bees come in with the heaviest loads of honey during the honey flow;

Those which show plenty of old workers amongst their numbers all through the season;

Those that have a regular brood nest closely packed with young, the sealed brood with a few empty cells through it;

Those that do not stop work when the hive is opened, but are going as usual in a few minutes;

Those that are out early and in late on all fine days during the honey flow;

Those that are amongst the first to get on to honey at a distance;

Those that as long as they have combs to fill and plenty of room do not attempt to swarm during the honey flow;

Those that, other things being equal, are the first to start sealing up honey when the flow comes on.

Use your oldest queens that are best in these points to breed from.

If several young queens during their first season show exceptional promise of good qualities, raise a small number of young queens from each of them. You can judge the next season whether the good qualities are likely to show up in their stock or not.

We now come to the queen herself. She should when a virgin be active in her movements, large-looking round the thorax, with abdomen rather long and tapering, with good lengthy wings. Queens with very short wings will give bees of poor flying powers.

After starting to lay, her abdomen should fill out and show full and well rounded while she is in full laying.

Queens showing a taper-ended abdomen while fed up for laying will give bees of poor honey-carrying capabilities, and always remember that the more generations of good qualities there are behind a queen the surer are these of transmission to her descendants.

In selecting for non-swarming a few words may be useful.

First, there must be always sufficient room given to prevent overcrowding for any length of time, and especially during the honey flow, so that bees are always in full work.

When bees prepare to swarm note all those colonies that slacken in their work or are prevented by removal of cells from swarming, for such will be persistent swarmers.

Raise your queens and drones from colonies that either do not swarm, or when forced to swarm keep at full work piling in the honey right up to the minute of coming out.

Mr E. G. Ward expressed his keen appreciation of Mr Stewart's paper, which contained some very valuable information concerning queen rearing. He had given lines on which the amateur and the experienced man could both work with confidence and success.

Mr I. Hopkins also appreciated Mr Stewart's paper, and added that he did not think anyone who knew anything about the rearing of queens could have written a better paper.

Mr Allan said they knew Mr Stewart in the South as a careful and painstaking apiarist, who had done great service to the industry. "When I tell you he has cured foul brood with a knife it will astonish you, but he has done it," went on Mr Allan. Mr Stewart was well warranted in giving those opinions as the result of his wide experience.

Mr. W. E. Barker and Mr. Ireland also complimented Mr. Stewart, the last-named referring to the remarks concerning the injury to queens by chilling. Root Bros. had frozen queens until they were in a solid block, and after they were thawed they had been quite lively.

Mr. Hobbs said he had found that they could rear queens that were almost immune to paralysis or foul brood.

Mr. Hopkins said there was one thing he would like to say in the interests of commercial queen rearers, that when a queen was slightly injured in transit the bees were pretty sure to supersede her as soon as she commenced to lay. Sometimes mismating followed, and they were blamed for selling mismated queens. As soon as a person got a new queen her wings should be clipped and then they would be able to see if she had been superseded. Unless this was done they couldn't tell whether she had been mismated until they found hybrid bees in the hive, and then they would go for the commercial breeder.

Mr. Stewart said he had experimented with the chilling of queens, freezing them until they practically couldn't move. He had sent some queens to Gore, a distance of some thirty miles from where he lived, and owing to the cold they arrived at their destination as stiff as a poker. They were sent back to him with the intimation that he had sent dead bees. Mr. Stewart put them in his pocket, under his arm, and on arriving home the bees were thawed and alive. He kept a queen for a time and she seemed all right, but one morning she was dead That was the way they always went after chilling, sooner or later, but certainly within three months. He had proved it time and time again by practical experience.

A NEW CONSTITUTION.

The draft of the amended constitution was considered by the Conference in committee, and in its new form was adopted on the motion of Mr. Ireland. The new constitution read as follows:—

1. The organisation shall be known as the National Beekeepers' Association of New Zealand.

2. The objects of the association shall be the improvement of the conditions of the beekeeping industry, furthering the interests and the prosperity of the beekeepers throughout the Dominion.

3. Membership shall be extended to any beekeeper who is in accord with the aims and objects of the association, and who forwards the annual subscription fees: up to 15 colonies, 5/, 16 to 50, 10/; 51 to 100, 15/; 101 to 200, 20/, and 5/ extra for each additional 100 colonies. Honorary members' subscriptions shall be one guinea per annum.

4. Local branches of the association may be formed wherever there are seven members of the association desirous of forming a branch. The secretary-treasurer shall provide the local branches with reports of the meetings of the executive, pamphlets and other printed matter which may be published from time to time. (a) It is specially provided that any existing beekeepers' association may automatically become a local branch of the National by the passing of a formal resolution adopting the National constitution subject to the provisions of clause 3. (b) When a local branch is formed the local secretary shall notify the general secretary-treasurer of the formation of the branch, and the general secretary-treasurer shall pay one-quarter of the local branch members' fees annually to the secretary-treasurer of such branch.

5. The executive shall consist of a president, vice-president, secretary-treasurer, and four members (two being from each Island), who shall be elected at the annual meeting. Should any vacancy occur during the year the executive shall fill the vacancy. The duties of the executive shall be:—The general control of the associations' business in furthering the interests of the association; the publication of reports; advertising and marketing of honey and any other business which may be deemed advisable in the general interest of members.

6. The president shall preside at all meetings of the executive, and also sign all cheques. He shall have a deliberative as well as casting vote.

7. The vice-president shall occupy the chair in the absence of the president, and in the event of the office of president coming vacant he shall act until a new president is appointed.

8. The secretary-treasurer shall collect all money due to the association, keep such books and accounts as the executive may require, countersign all cheques, conduct the correspondence, keep the minutes of the meetings, and do any other such work as is necessary or the executive may direct. He shall also write the annual report and prepare the balance-sheet, which must be signed by the auditor.

9. The annual general meeting of members shall be held in June or as near thereto as may be deemed advisable for the purpose of receiving the report and balance-sheet, the election of office-bearers, and the appointment of auditors for the ensuing year, the discussion of any subjects of interest to the beekeepers which may be brought forward, and general.

10 It is specially provided that should any question arise which in the opinion of the executive should be decided by the members, they shall issue to each member of the association and to the secretary of all the local branches a clear statement of the position, and provide a voting paper so that members may vote on the question by mail. The voting shall close not less than thirty days from the date notices are posted. The voting paper shall state the date on which the poll shall close.

11. This constitution may be amended or dissolved at any annual or special general meeting called for that purpose, provided that sixty clear days' notice of the proposed amendment or dissolution be given by circular calling the meeting to each member of the association and to the local branches.

The question of the formation of a co-operative scheme was, on the motion of Mr Bray, referred to the incoming executive to report within six months.

FINANCIAL ASPECTS OF EXPORTING.

(By W. B. BRAY.)

There are no difficulties in the way of the National Association doing the exporting for the members if the methods of the Dairy Associations are followed. The financial responsibilities that would be incurred are very small, and some of the items would be directly charged to the individual shippers. The following outline of the way in which dairy produce is shipped will make it clearer:—

The association have arrangements with firms at the shipping ports to see to the consignments being sent to the grading store and afterwards to the ship's side, and to making out the bills of lading and passing Customs entries. Each shipper makes out a bill on the London agent, and when the bills of lading are made out they are attached to this bill, which is then discounted at the bank. A thrity days' sight bill is discounted at 17/6 per cent, which practically amounts to 4½ per cent interest. The consignment arrives at the same time or soon after the bill is presented by the bank. When the agents accept the bill for payment (in thirty-three days) they receive the bills of lading. If when the bill matures there has not been matter if the consignors of honey were satisbill, interest is charged on the balance, but the rate is very cheap, London rates.

In drawing on the agents there has to be some understanding as to the amount to which the agents are prepared to accept bills

for, but there should be no difficulty in this matter if the consignors of honey were satisfied to draw 2d per lb. Later on as the market became more stable the margin could be increased.

Insurance.—The association have arrangements with an insurance company to insure the total consignments for the season. The association makes itself liable for the total charge, and they charge each shipper with his or their share. The rate is about 15/ per cent, and arrangement can be made for the policy to come into force at any particular point.

Commission is 3 per cent on the gross returns. The produce is usually sold on terms allowing two months' credit; bills at two months are tendered and discounted. The London rate of discount is very cheap, varying between 4 and 5 per cent.

Landing charges vary a good deal, being from 10/ to 30/ per ton. If the produce is sold ex ship the price it is sold at is slightly lower, as the buyer bears the cost of landing.

The consignor is liable for any shortage in the final returns, but in shipping without recourse the agent bears any loss and the consignor receives any surplus. Not many firms care to handle consignments without recourse, but it is the best arrangement for the consignor, as the agent is bound to sell for enough to pay the draft. Some factories do not care for the method, as they consider that the agent will sell for the amount of the advance and no more, but actual returns show that a surplus is obtained as a rule.

ON THE PROBABLE ORIGIN AND SPREAD OF FOUL BROOD.

(By W. E. BARKER, Peel Forest.)

(Read before the N.Z. Federated Beekeepers' Conference, Wellington.)

All Nature is one and undivided; it differs only in degree.

Gentlemen,—As I have been asked to present a paper to this conference, I have thought I could not do better than contribute a few remarks on the probable origin and spread of foul brood—a recapitulation, in fact, of some letters on the subject I contributed to the Apiarist Column of the "Otago Witness"—in the hopes that it may lead to an instructive discussion on this somewhat over-dreaded disease, and the best means to cope with it. Beekeepers have got into what I consider a (perhaps a wholesome) panic, and certainly a dangerous, incorrect and detrimental habit of talking to the "oi polloi" of foul brood honey, etc., almost as if the poison lurked beneath each honeyed cup, instead of being carried in the body of the bee. The somewhat disjointedness of this short paper is to be accounted for by its having been compiled from the aforesaid letters. I may state I am very far from being a beemaster, other occupations preventing me from devoting that attention to them I should like; keeping them at first mainly for the purpose of the fructification of a large orchard, so that what remarks I may make are more from the standpoint of the science of bacterial disease. It has seemed to me often absolutely childish the way the majority of queen breeders advertise "all yellow" golden queens R5, banded Italians, etc; one might as well choose one's wife by the number of feathers she wears in her hat as a queen by the number of rings on her abdomen. Remember, if you breed for feathers you will get feathers, but at the expense of some other attribute. In point of fact, the appearance or encouragement of hairs or feathers always points to the preponderance of the male element or the preponderance of the male element or gamete in Nature, and the corresponding degeneracy of the female. What we want is strong constitution. Bacteria cannot find lodgment in man or bee if the constitution is strong enough to resist their invasion; but if once the constitution becomes weakened by inbreeding (by trying to breed bees true to colour, for instance) effete matter collects in the fluids of the body suitable to the sustenance of bacteria; then they appear to consume it. This holds good whether it be the consumptive bacillus of man, or the bacillus of foul brood that decimates the constitution of the bee. It is my strong opinion that it is the sickness of the infected bees that makes some refuse to clean up dead larvae, and that that is one of the wherefores of the McEvoy treatment being so successful—by forcing the bees to consume the bacteria in their body fluids in their endeavours to make wax. That Italians as a race are more immune than blacks has not been my experience altogether; for years I had blacks and no foul brood. Then I foolishly introduced Italians, and next season foul brood appeared, since when I have observed that some colonies were immune and some not; some with a little assistance could resist the attack and some succumbed, necessity forcing me at that time to follow out to some extent Darwin's theory of the survival of the fittest. No bacterial disease will ever be swept out of existence by treatment only, and my present belief is that the modified McEvoy treatment is preferable and sufficient. I am convinced that the breeding of a foul brood resisting bee is not altogether chimerical. If we drop the colour line and breed for constitution only—I mean, roughly, if a colony is noticed to clean up diseased brood without assistance, as any observant beekeeper will often find, breed from that queen, because those bees have a good constitution able to cope with and resist the "foreign" invasion of bacteria. If I am not misinformed, Mr. Stewart's bees (of Crookston), whose success in coping with foul brood has been often spoken of, have a strain of the Carniolan in them, which may help to account for his success in combating foul brood. Beekeepers talk in an absurd way of "carrying infected honey and feeding it to larvae." If the honey did not come out of the honey sack of the bee there would be no bacteria in it. The bacillus is a foreign subject in the honey—that is, it does not multiply itself in it as it does in the fluids of the bee host or its larvae. Why it is so fatal to the larvae is, of course, because, like a baby fed upon tuberculous milk, it has not yet attained its natural resistant powers. Let us think. What becomes of the larvae that survive the attack of the bacillated honey? Surely no one holds that every larvae that is attacked must die. They hatch out and become the disease carriers of the coming unborn millions—here comes in the second wherefore of the success of the McEvoy system. When we shake the bees on to bare foundation the hatched brood would become the feeders of the hatching; the affected, living, debilitated young bees speedily die, leaving only the healthy and older field bees to feed the new brood. It is rather significant that foul brood is seldom reported to have been observed in bush bees. It is what one would expect—given time: Nature always preserves an equipoise, one seldom sees in feral life such disaster as sometimes runs through an apiary, as man in his blindness often contravenes some law of Nature. Even in dealing with American foul brood, one is beginning to have an uncomfortable feeling, as is the case with European foul brood, that we may be killing "the other fellow." However, if the method is sweeping enough to kill the whole lot, we need not bother ourselves whether it is bacillus larvae, bacillus pluton, or bacillus alvei, or bacillus X, Y or Z. What is in a name? But that foul brood comes with the power of a new invasion to the black bee and that it succumbs unless crossed with the Italian, which has become to a certain extent immune, is certain, and I believe that by careful breeding for constitution only this immunism could be greatly strengthened, if not perfected, somewhat on the lines carried out by Mr. Stewart. Of course, the trouble of dealing with foul brood is that thousands of affected bees die away from the colony, Nature having taught them to leave the hive to die, and if one looks carefully one often finds them dead with their tongue protruded. My opinion is that from these dead bees the main infection comes, either from other bees directly robbing the germ-infected honey as the contracting body forces it up, or when the body gets desiccated sufficiently for the germs to be wind-blown. For this, of course, there is no remedy. Wherefore the necessity of attacking the seat of the disease by raising a disease-resisting stock, either by the rough and ready plan of close observation, or some day, I trust, the more sure, but at present somewhat chimerical, one of feeding the bees on an attenuated form of virus. Surely it would be something to have attained to be able to feed a syrup containing an attenuated virus or a toxin to a colony of bees, and so preventing or anticipating the attack of a vagrant or foreign invasion of foul brood germs by making the body fluids of the larvae inhospitable to bacteria.

I must own to a weakness myself for the golden bands, and love to watch a well-marked golden beauty alight on the alighting board, but the fact remains that too close breeding always means a weakening of stamina, and from that standpoint our inability to control the male element is not altogether a fault to be deplored. That the bacteria in the fluids of the bees do make their way into the honey sack by osmosis is, I think, an undoubted fact. There is another fact about the known history of bacteria that is, I think, worth taking into account, i.e., their abhorrence of light. For instance, you can write your name with them by making a strong culture on a microscopic slide and then placing over it a stencil plate and exposing to strong sunlight. On removing the plate all the bacilli reached by the rays through the perforations are killed. Therefore, I think that it is probable that by giving the colony as much light as possible in the summer months help may be given. Very few living organisms, it should be remembered, rightly or entirely digest their food, hence a certain amount, especially as age increases, is left unconsumed in the body fluids—this is "effete matter," and is what attracts bacteria. The toxins or poisons which all bacteria excrete whilst living in an organism make in time that organism immune to any outrageous increase of future bacteria. How long this lasts we don't know, but we do know that a naturally strong constitutioned animal can and does deal with, by consuming them, a moderate invasion of bacteria, should what is called their "opsonic index" (i.e., the average percentage of white corpuscles or phagocytes in their blood) be normal. It is the absence of these toxins in the fluids of the black and bush bees that I consider makes them such ready victims to a first invasion to foul brood. The object of modern medical men in treating their patients for bacterial diseases is to increase their opsonic index, i.e., their natural resisting power to such invasions, and then to inject the necessary toxin to cut short the attack. The object of the modern beemaster or queen rearer should be the same; though, of course, his path is beset by still greater obstacles. I do not suggest that he go about with a syringe and inject a virus into each bee, but as apparently the honey bee is able by osmosis to infect the honey in its honey sack with bacilli, I can imagine that future bacteriological investigators may find a feasible way to introduce by doctored honey or by spraying an attenuated form of the dreaded foul brood bacillus. Remember, it is not the bacilli that do the damage in bacterial diseases so much as the toxins or poisons they excrete. This fact of the bacillus being in the resting stage and having to be fed by the young bees direct to the larvae from their honey sack has caused many expert beekeepers to hold that the disinfecting of hives and frames is a work of supererogation—the chance of infection being so remote. This, however, is short-sighted policy when we consider the enormous rate of increase of even a single bacillus when it finds itself in a suitable environment. If a young bee happens with its foot pads to tread on a dorpens with its foot pads to tread on a dormant spar, the first time it lifts that foot again to wipe its mouth with its handker-chief, or, to be more precise, to cleanse its tongue with its wonderful notched-like comb, it is easy to conceive how occasionally a germ may thus be transferred to the larvae. Therefore, all hives and frames should be disinfected with strong Bordeaux or other suitable germicide. The secret of success in dealing with foul brood is to keep your colonies piping strong; if you find, however, that notwithstanding your endeavours they continue to dwindle and languish, then shake them unmercifully according to the McEvoy plan. I prefer myself, where possible, natural swarming. I know Tiener Edwards and many other authorities look upon it as an obsolete habit, a kind of atavism that should be bred out, but I think they are mistaken and that back of it is a little-understood psychological instinct. Perhaps the queen bee, like her modern human degenerate sister, begins to argue "Why should I thus sacrifice myself for the good of the

community? I will 'limit my family' and go to the dance." Then the "spirit of the hive" (the socialistic spirit), stepping in, says, "Then go," and drives her forth. Anyway, sure it is she returns a chastened character, and a certain stimulus is given to the whole swarm that is seldom attained by the made colony. At least that is my experience. Some American beemasters who go in for made colonies, in fact believe in a form of artificial stimulation and go round the apiary and kick each hive. Though very fond of experimenting, I have never tried this plan myself.

Gentlemen, my paper is finished, and knowing that it contains much that is somewhat original and revolutionary, I sit down stoically and await being hung, cut down and quartered by my friends, many of whom, however, no doubt, have not given as many minutes to its consideration as I have months. 'Tis but the ordinary fate of those who suggest some new departure from the ordinary. In conclusion I would say it is the very rapid transmission of the foul brood bacillus from one bee bee back to another that accounts for its exceptional virulence. It is this fact that also gives to me the hope that careful bacteriological experimenting may prove that foul brood will lend itself exceptionally well to the anti-toxin treatment. I should very much like to see our Government Bacteriological Laboratory take up a series of experiments to this end, and would recommend that a motion to that effect be passed by this conference, as such experiments cannot be carried out satisfactorily by private individuals, they not having the means, the time, the apparatus, or the ability at their disposal to produce what Pasteur not ineptly calls a "virus fixe."

FOUL BROOD.

Dealing with "The Scientific and Practical Aspects of Foul Brood," Mr. R. Gibb said the disease had been known almost from time immemorial, for Aristotle refers to it over 2,000 years ago in Italy. The disease, in the course of time, had killed out the weaklings in Italy, and possibly that was one of the reasons why the Italian bee was a better resister than others. As Mr. Kirk had said, it was about the year 1888 that foul brood was introduced into New Zealand. Mr. Gibb went on to say that he had examined many colonies of New Zealand wild bees, and found that where the bees were in a state of nature in the bush, away from centres of infection, they were clean, and not affected by disease. It went to prove that New Zealand was clean to begin with until in 1888 the disease made its appearance and swept through the country like a plague. All the bees at the time were black, and had not been subject to any brood disease. It was the real foul brood they had in New Zealand, and not black brood or any other disease. This had been established beyond doubt by the tests conducted by Dr. Phillips from specimens sent from this country. When they got right down to the lowest forms of life it was hard to tell which was vegetable and which animal, but he believed that the cause of foul brood was a vegetable growth, a lowly kind of fungus. They might have got it in New Zealand through the importation of honey from infected areas or countries, and he had heard it hinted that it came from the imported Italian bees, but did not know about the truth of that. No doubt the means by which it was spread throughout New Zealand was by the assistance of the now much-condemned box-hive. Mr. Gibb went on to deal with some of the many cures which had been advanced to cope with the disease, and said that the crux of the whole thing was to get to know just what each man's idea of rottenness was. The McEvoy treatment, with its variations, was probably the best means of coping with the disease that they had.

Mr. Hopkins described his experiences in dealing with foul brood, and mentioned their success in stamping it out.

Mr Ireland thought the McEvoy treatment of the disease was the best extant.

Mr Cottrell mentioned some examinations of wild bees which he had made in five of the South Pacific Islands, each widely separated, and not in a highly civilised state. The bees were in a state of nature, but were badly infected with the disease.

The President did not think it advisable to allow the bees to clean out infected cells. It was best to do away with them.

Mr Langford asked what the results were of the experiments being conducted by the Department.

The President said the results would later on be published in detail, but so far there had been no signs of the disease from foundation wax made from badly-diseased combs. The same colonies would be kept next year to see if they still kept clear of disease.

Mr E. G. Ward said he had supplied some of the diseased comb to make the foundation wax, and it came from one of the rottenest foul brood colonies they could wish to see.

Mr Hutchinson said that in Professor Cheshire's experiments it had been found that foul brood would stand being boiled for eight hours. He would not be too sure of the result of the Government experiments until the colonies had had another spring.

Mr Gibb reiterated that, contrary to Mr Barker, he had found Italian bees more immune to disease than the black. When Italian bees were being treated they worked along the same lines as the apiarist did, but the black bees did not. The germ could only be carried from one hive to another through the honey; if it could be carried in the air, there would be no hope for apiarists. In a microscopic examination of foul brood, he had found that the germs of disease were so thick that the longer one looked the more one could see. Therefore, he said that the bees could not clean out the cells properly. There must be a distinct break when they wanted to get rid of foul brood. (Hear, hear.)

On the motion of Mr Brickell, a hearty vote of thanks was accorded to Messrs Gibb and Barker for their papers.

AN ANOMALY IN FREIGHTS.

Mr Brickell made some interesting comparisons of the rates charged by the Railway Department between honey and butter and beehives and butter boxes. Over 100 miles one ton of honey was conveyed for £1 6/6, and one ton of butter over the same distance for 14/6, leaving a difference of 12/ in favour of the butter. Moreover, the honey was conveyed in any trucks, while special conveyances had to be provided for the butter. In Australia honey was carried 100 miles for 14/11 per ton. The measurement of a ton of honey was approximately 33ft, whilst the measurement for butter was approximately 50ft. This meant that for every four tons of butter that each truck would carry, six tons of honey could be packed in the same space. Beehives were conveyed at £1 13/7 per ton, as against butter boxes at £1 0/9, though they were made of the same timber and there was not much difference in their value. It might be pointed out that the value of butter was nearly three times the value of honey, and if there was any difference, it should be in favour of the honey.

It was decided that a deputation, consisting of Messrs Brickell, Hutchinson, Allan, and Gilling, should wait on the Minister for Railways asking for a revision of the freight rates.

AMENDMENT TO THE LAW.

Mr Bartlett-Miller said it was a well known fact that upon the success of the Apiaries Act depended, more or less, the success of their industry. However, some extensions and amendments were necessary. Mr Kirk had drawn up certain draft proposals, which met the case most adequately. He had indicated a number of verbal amendments to the existing act, and, in addition, Mr Kirk intended to have an entirely new Act introduced, which would be of very great importance. By this bill it was proposed that the Governor might from time to time, by Order-in-Council gazetted, prohibit absolutely, or except in accordance with regulations under the Act, the introduction into New Zealand, either generally or from any specified colony, country, port, or place, of any bees, honey, comb-foundation, appliances, or any other thing which was likely to introduce any disease into New Zealand. The proposed amendment also provides by the same means against bringing into any specified portion of New Zealand from any other portion of New Zealand anything which was diseased or likely to spread disease. Power will be given to appoint any specified ports to be the only ports of entry for bees, honey comb-foundation, appliances, etc., and also to prescribe the manner in which infected packages shall be treated, cleansed, destroyed, or otherwise disposed of. Provision for the registration of all apiaries and the amount of fees are also provided for. All regulations shall, within 14 days, be laid before Parliament, if sitting, or, if not, then within 14 days after the next succeeding session. Mr Bartlett Miller went on to say that they should endeavour to get the Government apiaries transferred from the control of the Fields and Orchards Division to that of the Apiaries Division. He also called attention to the urgent need for equipping the inspectors with motor cycles.

Mr Adams thought that in the amendments to the Act provision should be made for apiary inspectors to have power to deal with honey produced under insanitary conditions. This work should not be done by the Health Department, but by the apiary inspectors.

Mr Gibb said he thought that possibly Mr Kirk might instruct his inspectors to report such things to the Health Department. Then, if no action were taken, the Association could complain.

Mr Adams' motion was then put, and carried unanimously.

It was also decided that Messrs Bartlett-Miller Allan, Cottrell, and Gibb should wait on the Premier, and ask his assistance in getting these proposed amendments on the Statute Book.

Mr Bartlett-Miller, on behalf of the president, then moved that the Minister's attention should be drawn to the resolution passed at the last annual conference, i.e., the compulsory registration of apiaries, but that the fee of 2/6 therein proposed be raised to 5/, this money to be spent upon an up-to-date experimental bee farm with an official in charge who is an up-to-date qualified queen-raiser.

Mr Hutchinson opposed the motion, thinking that they should not be taxed to pay for an experimental station when other industries got it out of the consolidated fund.

The President said they were trying to get the Government apiary under the control of the Apiary Division. Under present circumstances, it might as well be in America for all the good it was to them.

After an amendment by Mr Bray affirming the principle of a registration fee had been put and declared lost, the motion was carried, and the Conference adjourned.

DEVELOPMENT OF THE LOCAL MARKET.

(By R. W. BRICKELL.)

There is perhaps no part of a bee man's activity which causes him such a lot of worry and anxiety as the disposal of his crop.

You are all producers, and know your business thoroughly from hiving to swarm, through all the various stages till the extracting is over. Some of you go further than that, and pack your product so that your honey can take its place with other foodstuffs of the community, and reflect credit on the producer.

The securing of the highest possible price for the honey is a matter of vital interest to the beekeeper, but how to obtain it is not generally understood.

To many beekeepers the market is a vague sort of a place, and, I am afraid, to most of them it consists of the nearest commission agency. The honey is sent in in various sorts of packages along with a few onions, poultry, potatoes, and so on.

Most of us also have a vague sort of idea that honey will sell of itself, and if it doesn't, we blame everyone except ourselves, instead of making an effort to keep it moving.

What would you think of the jam manufacturer who sent his jam in in 60lb. tins to a commission agency, along with the onions, as we send our honey? Do you think you would like to see it on your breakfast table? And what has honey done to warrant such treatment?

I venture to say that if the same system, or want of system, were followed by the manufacturers and producers of other foodstuffs their sales would almost entirely disappear.

The wonder to me is that honey is used as much as it is. At the present time I do not believe that one person in five uses honey at all, and I am quite sure that not one in 20 uses it as an article of diet regularly. If you think I am exaggerating, call on your friends in and around the town, and ask them what is their consumption of honey per annum.

Have you ever thought of the possibilities of the New Zealand market alone? There are, roughly, 200,000 homes in this Dominion. Is 1lb. of honey per week an extravagant estimate? Perhaps. Then cut it in half, and say ½lb.—threepence per week per home of an average of five people, and this for one of the most delicious articles of diet that Nature in her bounty has provided.

This small estimate of ½lb. of honey divided amongst five people per week, means that 2,500 tons of honey are required annually for home consumption. Just think of it. Yet some of our friends are worrying over export.

Our business as producers is to tell the people we have honey to sell, that it is a good article of diet, healthful and cheap.

Here in New Zealand we have plenty of beekeepers, plenty of honey, but not much market. Now, my appeal to you is pool your funds, advertise, and remedy the unsatisfactory state of affairs.

The direct result of advertising is always an increase in consumption, generally followed by a substantial increase in the return received by the producer. Is not this worth working for?

In Canterbury, quite recently, large quantities of honey could be bought as low as 3½d. per lb., and I have it on reliable authority that some producers offered their crops and received less than 3d per lb. Canterbury honey would hold its own with any honey in the world.

Advertising can be undertaken in many different forms. For the first year I would suggest to the incoming executive the following forms to commence with. As the National grows in numbers and in strength other phases can be undertaken with advantage.

First, I would suggest that a large portion of the funds at the disposal of the executive be set aside absolutely as an advertising fund. As soon as this fund is known the executive should appoint some advertising expert, tell him what is wanted, tell him how much money there is available, and he will suggest a scheme.

I wish to emphasise here that it is useless for anyone without expert knowledge to conduct an advertising campaign with any hope of success. It is better to do no advertising at all than to add to the mass of ineffectiveness which passes current as advertising in many of our daily papers.

The advertising scheme would probably consist of the regular publication of articles on the use and value of honey as an article of diet, and not, as at present, a luxury.

Also the regular publication of little pithy paragraphs in the advertising columns of our newspapers, and the regular publication of the various incidents connected with the life of the bee.

Another phase of advertising would be undertaken which would not cost much money. It is that the Executive use every endeavour to induce every bee-keeper who has honey to sell to show at our Agricultural, Pastoral, and Floral Shows. At the present time most of the societies give prizes, and nearly all of those who have not honey on their schedule would place it there if there was any competition likely.

It is regrettable, however, that two or three entries is, I am afraid, above the average, whereas there should be thirty or forty for every class.

Enter any show and watch the people in front of a good exhibit of, say, bacon. See how each one says "I like that," another likes another, and unconsciously bacon and eggs flit before the mind's eye. There is the suggestion of the large industry involved that everybody uses bacon. It is popular.

Follow the crowd round to the honey exhibit. Two or three small pots is all that is seen. The people pass on without taking much notice. There is none of that comparison and suggestion of how delicious it looks which large exhibits convey.

The details of these exhibits could be worked out by the general and local secretaries, who would send out a notice to all the members of the displays, ask for nominations, enter the exhibit, receive it, stage it and repack it, and send it back. All the beekeeper would have to do would be to fill his bottles and consign forward. The publicity of this form of advertising is invaluable.

Now as to funds. Of course, the work of the secretary and the payment of the advertising charges would cost some money. Each and every beekeeper here present should elect himself a voluntary canvasser for members of this Association.

From the Census reports and the reports of the Agricultural Departments there are thousands of beekeepers scattered throughout the Dominion. It ought not to be difficult to get a membership of five hundred at least, if all will do a little work.

This membership would give the Executive sufficient funds at least for the first year. If we can increase the general price of honey even 1d per lb it means £2 6/8 extra profit for every ton produced. It means, further, that for every 5/ the beekeeper spends on subscription to the Association, he has a very good chance of getting £2 6/8 in return.

There is another point in the development of the local market which requires serious consideration by this Conference, and that is the wholesale and retail price.

Such is the condition of commercial life, we cannot get away yet awhile from the middleman.

Until the beekeepers as a whole realise that there are three distinct classes of people to whom they can and do sell their honey, and treat each class differently, there is not much possibility of any really useful work being done.

The classes of buyers are the wholesale merchants who sell to shops and stores only, retailers who sell to the public, and the general public.

When the merchant buys he expects to make a profit on his purchase somewhere in the vicinity of ten per cent from the storekeeper, and the storekeeper in turn expects to make a profit of 20 to 25 per cent from the general public.

Unless the beekeepers protect the merchant by charging the retailer an advanced price, the merchant will not handle; and if the beekeeper does not further protect the storekeeper by charging the retail price, the storekeeper will not handle.

If you can retail, by all means do so, but get the merchant's and the storekeeper's profit in addition to your producer's profit, thereby giving other beekeepers a chance who are not so fortunately situated as yourself.

Here let me tell you what has taken place in Dunedin within the last few years. When we handled honey first we sold our own sections at 7/6 to 8/ per dozen wholesale, that year by year the wholesale price has steadily fallen, until quite recently sections were offered and sold as low as 5/ to 5/6 per dozen. Do not think for a moment, however, that the public are reaping the benefit. One shop at least still maintains its price, and during the greater part of the season gets 1/ each, 12/ per dozen, for these same sections, though I must confess that the majority of the stores sell from 9d to 10d. Within the last week or so sections have been in short supply, and I am pleased to be able to say I cleared my last line at 7/3 per dozen.

Another important point in developing the local market is the standardising or grading of our product. In all communities there is a multiplicity of tastes. Some like strong dark honey, others prefer the light delicate flavours. The label on each package should clearly state just the kind of honey the package contains, or, better still, the packer, be he producer or merchant, should have different labels for different grades of honey. When a woman buys, say, the XYZ brand and likes it, she should be able to get exactly the same quality the next time she purchases it. If none of the same grade is available she may try another grade, but by all means familiarise her with the standard line under a standard label.

Honey is equal in value to jam, and it should be sold at about the same rate as our high-grade jams. Of course there are lower grades of honey which would not command the same rate, still they would not have any effect upon the market.

The retail price should never be less than 7d per lb in packages of 5 to 10lbs, and what may be termed "fancy" packages, that is, pots, tins and glass bottles, 7d per lb plus the cost of the package.

In Colorado the Honey Producers' Association has increased the price of honey over fifty per cent.

Here in New Zealand we can do just as good work if each and every one will, like the bees, be loyal to the other and to our head, the Executive of the National.

From time to time the Executive will ask you to co-operate on some given line. Do not say that's no good.

Give their scheme a trial, they are all commercial beekeepers. Remember, they are working for you and trying to conserve your interests, and deserve your hearty support.

FOSTERING THE HOME MARKET.

(By J. ALLEN.)

Mr. Chairman.—At the present time the beekeepers of New Zealand, through the National Federated Beekeepers' Association of New Zealand, assisted by the Apiaries Division of the Agricultural Department, are making an effort to open up an export trade in honey. While hoping that this effort may prove successful, and that the trade may develop at prices satisfactory to the beekeepers of New Zealand, I think it would be a mistake of the first magnitude, so far as our industry is concerned, to neglect to foster the Home market. We cannot afford to do that. It is right to do our best to establish on satisfactory lines the outside market. It would be fatal to neglect the market at our own door. Of the two markets I regard the latter as being very much the more important, and I do this for the following reasons; in the first place it is at our own doors, it is our own market, there is no import, we have as it were the ball at our own feet; in the second place it would be admittedly for the good of our nation to develop along the lines of a very much larger use of honey as a sweet; and in the third place it is capable of a development that it would be folly even to try to guess at—a development that if it were to take place suddenly would make the export market unnecessary for many years to come. I will not say anything further with regard to the importance of fostering the Home market. We are probably all agreed as to that. I will rather try to indicate the best means to accomplish it. What I have to say will not be long and will not unnecessarily delay the meeting and can be grouped under two headings. The first of these is its

INTRINSIC VALUE.

Just as each variety of fruit that grows in our gardens has its own colour and flavour, so honey partakes of as much variation as there are varieties of flowers to gather from, each variety having its own characteristic colour and flavour and consistency. While this is so, however, there are in most localities a few principal sources from which the bees gather their honey, and probably in most localities these are limited to not more than two or three that count. In my own district of Wyndham, beginning as early as bees can fly in the spring, they have kouini to start with, and then till clover time a succession of bush flowers. It is, however, very rarely that any surplus honey can be stored from these. They are there, and known to the beekeeper, but only to serve the very useful purpose of being manufactured into bees. It is not till near Christmas that my bees get fairly on to clover. This lasts practically alone until about the first of February. Then almost suddenly there is a change of colour, and I know that the bees have started on ragwort. For intrinsic value you have in these two honeys clover and ragwort, the best and the worst, and you can get any degree of goodness or badness you like.

according to the mixture that the bees make of the two. Now, what I want to point out to you is this, that if the beekeeper is going to create a demand for his honey in his portion of the home market, then he must know his locality, and know what his bees are doing, and further know when to extract and when to leave it alone. If any one wants to test this matter for himself, let him supply one of his customers with clover honey, and another with ragwort honey, and watch the results. It will be a lesson as to how the law of demand affects the market. You can readily understand how foolish it would be in my own case if at the end of the clover season, with, say, several tons of clover honey in the hives, I were to put off extracting until several hundredweights of ragwort had been added to it—enough to flavour and depreciate the whole crop. New Zealand is favoured in that it may be said that from end to end of the Dominion the principal source of honey is white clover. As all beekeepers know, this is the finest of all, and it lies with the beekeeper to harvest it as pure as possible. If this is done, then he has an article that will create its own demand: an article which put on the market in proper form will find its way into every home; an article which will find a place as a regular line in every grocer's shop, and have its price regulated according to the supply and demand. That is what we want. We want the honey to sell itself; to become a necessity on every table; to take the place it deserves as Nature's finest sweet. Now I come to my second heading, and that is putting it on the market in

PROPER FORM.

I believe some of our honey is finding its way on to the market in old kerosene and other sorts of old tins. This is madness. I don't like to see good clover honey meant for Home trade put into new tins, let alone old ones, and glass bottles are no better, rather worse. Some seven or eight years ago I was running a small dairy factory making butter, and the question suggested itself to me, Why not put up honey the same as butter? At the time we were putting the butter up in 4lb pats for the Dunedin market, and it seemed to me that honey put up in the same way would meet a ready sale. Out of that suggestion has been evolved what is known in the South as the pat system of putting up honey. As a result of that system the Dunedin market has taken all my honey for the last seven years at an average of 6d a pound with a ready sale, while formerly, when I put it up in 60lb. tins, it had a dragging sale at 4d. In the one case with a greatly increased value to me it is creating a demand for itself; in the other it simply was not wanted, most of it probably being bought by retailers to repack in glass or tin and sell retail—a much depreciated article at a much enhanced value. I am not, however, going to occupy your time lauding the pat system. I am told that in the North honey does not granulate hard enough to be so dealt with, and I can easily understand that in any case where the apiarist has had no practical experience in wrapping, it will seem tedious and laborious. What I wish to uphold is this; that we should adopt a package suitable to both retailer and consumer. Here is the crux of the position. Tin and glass suit the retailer well enough, they do not suit the consumer, and that is fatal. Glass is too expensive. Tin is cheaper, but you cannot take the honey from it and put it on the table in a presentable form. The consumer soon finds this out and so its consumption is limited. Notwithstanding this difficulty, however, a good deal is being done in some markets with 2lb. tins. I understand that this package has had a ready sale on the Invercargill market and that there is a good demand for it there. I venture to say that if instead of 2lb. tins 2lb. paper pots had been used, the demand would have been very much increased, and that at a greatly enhanced value to the beekeeper. Beekeepers should look into this matter. In paper we have paper pots, Aiken honey bags and parchment wrappers, and they are all of them superior to the old tin and glass packages. They are superior in several ways; they are better as a package, they are very much cheaper, and it will be found that they suit the consumer very much better.

Perhaps it would not be out of place for me to particularise with regard to these three packages. The paper pots taking the 2lb. size add ¾d per lb. to the honey. Compared with 2lb. tins there is a difference of about ¾d per lb. or £2/3/6 per ton in favour of the pots. If the difference were the other way as to cost I should still expect best results from the paper pots. In shape they resemble a small flower pot, being closed with a paper disc, very easily put in place. The honey requires to granulate before being shipped. The Aiken honey bags are probably known to most beekeepers, having been on the market for a good many seasons. They add (taking the 2lb size) just ¼d per lb to the cost of the honey, or less than half the cost of the pots. They are more tedious to handle than the pots, as they require to stand in trays to granulate before being folded up. As a package, however, they are very suitable, and will, I am sure, receive the approval of the consumer. With regard to the parchment wrappers, I cannot speak with the same freedom. Their cost is ¼d per lb for 1lb size, but, as I have already said, they have not been a universal success. In my own case, with two assistants, I can take off the moulds, cut, wrap, and pack ready for market at the rate of one cwt per half-hour or 16cwt per day. I would very much enjoy a race so far as speed is concerned with either the pots or the bags; yes, or the tins either. You have before you a sample, and you must judge for yourselves as to the suitability of the package. The moulds for storage for granulating cost £4 per ton of honey, and, with ordinary care, would last a lifetime. I make them much more simple now than I did at first. They have this merit, that they are as handy as 56lb tins at extracting time, they can be filled and stored away quite as quickly, and, if anyone is interested, I think I can show that the honey can be got ready for shipping after it leaves the moulds at as nearly as possible just the same price as if it were put into 56lb tins.

There is one thing which I must not fail to mention. I don't know that it will be the case with pots; but with bags and parchment, if the honey is exposed to a moist atmosphere, it will attract moisture, and, as we sometimes say, it will weep.

Now, sir, let me repeat, as far as the Home market is concerned we have the ball at our own feet. We have no opposition from outside, and if we will make up our minds to study both the consumers and the retailers' wants, but principally the consumers', then we will increase the demand by leaps and bounds. Honey will become a staple article on every table, as necessary as butter, sugar, or any grocery that has become a necessity, and let me add that this will be a benefit not only to the beekeeper, but to the consumer as well. There are many other ways in which we could do something towards increasing the demand for honey, but I hold that in the end we must depend principally on the intrinsic value of the article itself, and on placing it on the market in a form suitable to those who have got to use it. We can make our honey sell itself. I was speaking to a friend once about our Southland climate—it was snowing at the time. His remark was, we do not require to praise it, it speaks for itself. That is what we want our honey to do. Place on your own or your friend's table a nice pot of granulated honey beside a plate of scones and a pat of butter, and unconsciously you will find the saliva flowing in your mouth. The honey will quickly disappear; but the demand for it will not disappear. The children will want it—the whole household will want it, and that is the best of all reasons for impelling the housewife to purchase it.

In conclusion: In what practical way can our National Association help the beekeeper in so far as these two necessary things are concerned? In asking this question, I am fully alive as to the fact that only the beekeeper himself can do what I ask. There are, however, means by which the Association can help us. The first is by bringing pressure to bear on the Agricultural Department to have our honey graded for the local as well as the British market, to enable us to sell in the local market under a grade mark. I am aware that this means difficulty (probably greater difficulty than any of us just now can measure), but it will never be easier than now, and I consider that the Association should at once go into this matter and sift it to the bottom. The other method by which our Association can help us that I wish to draw your attention to is through our advertising scheme. If we can get an official pronouncement as to the value of the honey, and can then use the name of our National Association in connection with a grade brand, it seems to me that we can in some measure standardise our honey and thus make it easier for the consumer, in buying, to follow his taste. I think it will at once be admitted that such a result would be of infinite importance to our industry.

Mr. Allen then moved that it should be an instruction to the new executive to confer with Mr. Kirk as to the possibility of grading honey for local consumption.

The resolution was carried unanimously.

Mr Hopkins, referring to the pat system, said he had brought some honey in this form from Oamaru to the North. He took every care to keep it cool, but before reaching Auckland the honey had melted. The climate in the North militated against the success of such a system of packing.

Mr Bartlett-Miller said that some of them had put honey in Aiken paper bags, and it kept well for some three months, and then began to weep at the corners. By giving it another coating of paraffin wax at 110 degrees, however, the corners were sealed over, and he had the packages for over two years, and they were still as good as ever.

Mr E. G. Ward: You practically hermetically seal the package by doing that.

Mr Rentoul said there could be no question as to the advisability of developing the local market. The association which he represented was very strong on the matter of exporting, and he thought this should be taken up with any scheme propounded for developing the local market. The Canterbury beekeepers had been up against a dead market for so long that they wanted to promote an export trade.

Mr Gibb, referring to Mr Brickell's remarks, said he did not think they did enough advertising. So far as the pat system was concerned, he had found it an excellent one, though it had its drawbacks, for the packages were inclined to "weep" if left in the store after September. At the present time he was wavering between the 2lb tin and the pats.

Mr Pearson thought the fostering of the local market and the development of an export trade went hand in hand. On behalf of the association he represented he moved that the association be advised to write to all large beekeepers, inquiring what they were prepared to give towards the cost of an advertising scheme, and also that the Conference empower the incoming executive to expend 15 per cent of their revenue on local advertising. Mr Pearson added that this percentage could be moved up or down.

The motion was seconded by Mr Langford.

Mr Brickell: I think it should be 75 per cent at least. In reply to the president he said that he did not think the export scheme would cost the executive much. The cost of exporting must be borne by the shipper, and no one else. In his opinion it would be well to withdraw the motion, leaving the matter for this year in the hands of the executive.

Mr Bates: How do you propose to raise the funds?

Mr Brickell: The registration fees under the constitution will give the fees.

Mr Pearson agreed to the course suggested by Mr Brickell, and the motion was withdrawn.

Mr Baines said it seemed to him that until they could tell the merchant that they could get a better price by exporting, the buyers could give what price they liked. At present the merchant could play one producer off against another in the local market.

Mr Kirk said that their experience in other lines of produce had been that once they had established the export trade on a sound footing, the local trade would take care of itself. If they wished to get a good price on the local market, they must first create a good export trade. Touching on the question of co-operative organisa-

tions, Mr Kirk urged the strictest loyalty. He had seen the life of one or two co-operative associations endangered by the disloyalty of its members. In the matter of advertising, he instanced its value from the example set by the tea exporters of Ceylon. Their industry was nearly dead when they decided to put a small export duty on every pound of tea. The money was collected by the Government, and handed to the Planters' Association, by whom it was spent for advertising purposes. That was why on every railway station, and, in fact, everywhere they went, they were continually coming across "Ceylon tea." So it should be with New Zealand honey—not Smith's nor Brown's honey, but "New Zealand honey." (Hear, hear.)

Mr Ireland agreed with Mr Kirk as to the relation between export and local trade. So far as the local market absorbing anything like 2,000 tons per annum, nothing was ever developed up to its fullest possibility, and the difficulty would be to get every one of these 200,000 families to take their half-pound of honey each week. They had to export their surplus in order to harden the price on the local market. So far as the marketing of honey was concerned, he disposed of most of his crop wholesale in 60lb tins, the merchants putting it up in such packages as suited their trade best. A good deal had been said about the use of petrol tins as containers of honey. He had never used them until the season before last, but he knew that a number of Canterbury beekeepers had adopted that system. It was not so attractive, but he had not found that it injured the honey in any way. He would not advocate the use of petrol tins except in the case of selling wholesale to merchants who put the honey up in small packages afterwards.

Mr Askew gave an instance of where a co-operative association was absolutely killed by the disloyalty of its members. With regard to the pat system, his idea was that it would not do for the trade. Many storekeepers had no facilities for keeping the honey in a cool place.

The President hoped the new executive would follow out the advice of Mr Kirk, and foster the export trade, a commencement in which had already been made by the Association.

Mr E. G. Ward was satisfied that if he was to do any good work with bees in the future, he must be able to send his honey out of the country, to, when necessary, relieve the local market. "If you are going to kill the export trade, the best thing for me to do will be to drop out of the industry," he concluded.

Mr Brickell, in reply, said he was thoroughly in accord with the advocates of export, but was of opinion that it was not needed. In his opinion they had a sufficient local market if it were developed. Mr Kirk had instanced the success of the Ceylon tea planters, and if they had New Zealand national honey in every shop window, would not the consumption go up? Instead of the beekeepers all rushing their crops on to the market at one time, supplies should be distributed and regulated to suit the demand. Co-operation and co-operative selling was too big a thing for them yet. Honey in a second-hand tin carried with it the suggestion of a second-grade article. "Like the bees, who are loyal to their head," he went on, "let us be loyal to our head, the executive of the National." (Applause.)

Mr Allan said that nothing had pleased him more than to find that the National Association was so sure of its grounds in creating an export trade, but it did not take an iota from the necessity for fostering the local market. He believed that they must rely most on the intrinsic value of their honey and its get-up for market. He believed advertising had a great future before it, but they were not ready for it yet. They must be able to put on the market a package bearing not only the brand of the Association, but the brand of the Department of Agriculture as well. (Hear, hear.)

Mr Bartlett-Miller: Impracticable.

Mr Allan did not think so. Any scheme which was going to allow any person to put up poor honey under the Association's brand would not do.

The following contributions were in the order paper of the Conference, but, owing to pressure of time, were not read:—

BEE FARMING IN POVERTY BAY.

1878—1913.

(By G. STEVENSON.)

My first acquaintance with bee farming was made in 1878, when, on arriving at Gisborne, I was surprised to find a large apiary of 500 or 600 hives at Roseland Gardens, a few miles from town, and probably the first commercial apiary established in New Zealand. It was owned by John and Thomas U'Ren, both of whom have now joined the majority. At that time the frame hive had not reached New Zealand, and the hive in use was much smaller than the Langstroth, and consisted of two boxes, provided with slots, from which the combs were built, the honey being cut out of the upper box and strained. By this method, considerable quantities of beeswax were also obtained.

My own start in the industry was made at Ormond in 1884, with 50 box hives, bought at 5/ a hive. These I transferred to Langstroth hives, of which I had purchased 100. The season was a poor one, and what honey I got was gathered chiefly from a flourishing flax swamp near by. I ran the honey into kegs, and shipped it to London, with the result that I received a debit note for 1/6, which, I regret to say, I still owe.

Next spring I removed to a better site at Waiohika, and there I have remained ever since. My next essay on the Home market was more successful, a ton I sent to Edinburgh yielding £43 net, which was very satisfactory. At that time comb honey was much in demand, and for a year or two I received excellent prices for 1lb sections, 10d and even 1/ in Wellington. Gradually the price got lower, and when only 6d could be got I gave up the trade, especially as extracted honey was beginning to fetch higher prices, and I am much indebted to Messrs Moritzson and Co., of Dunedin, for the sale of many a ton of my honey at a price of 4½d and 5d a lb.

About 1890 a stir in the honey business was made in Auckland. A Beekeepers' Association was formed, with a paid secretary, a quantity of bee literature was printed and circulated among the members, and consignments sent to the secretary for sale. An excellent bee journal was also published by Mr Hopkins. But, somehow, the Association did not last long, whether from dissatisfaction at the result of the consignments or other reasons. Anyhow, the Association became defunct after a year or two.

Up to the year 1886 or 1887, foul brood was unknown in Poverty Bay, when it appeared in the most virulent form. The Roseland Apiary, then leased to Mr Knight, was first attacked. Being quite ignorant how to treat the disease, he threw the rotten combs into a heap in the yard, thereby spreading the contagion, till the whole apiary of 600 hives was wiped out of existence. The same fate befel another large apiary of box hives owned by Mr I. Hammond, near Ormond. Though situated between the two, my own apiary remained how to treat the disease, he threw the clean until the following spring, when, on opening the hives, I found the brood in the centre combs affected. These I removed and destroyed, and had a good crop of honey that season; but in the following spring nearly all the hives were affected, and many had succumbed. Meantime, I had written to Mr McEvoy, the American inspector, whose method of getting rid of the trouble I had read of, and received a long and very courteous letter in reply, giving me full directions how to proceed, which I forthwith carried out. It was a tedious job, but proved efficacious. Since then I have been careful never to harbour a single case of foul brood in my hives; but I am sorry to say that notwithstanding Government inspection, there are many hives in the district affected, though the disease has never again assumed the virulent form of its first appearance. One notable feature of the outbreak was the effect of running water in checking the spread of contagion. A large apiary of box hives at Te Aral, owned by Mr T. U'Ren, and situated on the other side of the Waipaoa River, entirely escaped, and it was by purchasing bees from him that I restocked my apiary.

Up to recent years I had a number of excellent customers among the leading grocers in Napier, Wellington, and Auckland. Almost all of these I have now lost, as they get their supplies of honey from local beekeepers. The Gisborne trade also, which for many years I had in my own hands, is now so cut into by new beekeepers as to be worth very little, while the London market is very much in favour of many other beekeepers besides myself, it is time something was done to place the industry on a better footing, and I look hopefully on the efforts of this Conference to the attainment of that end.

I may add that I have been a very successful exhibitor of honey, having received a silver medal for my exhibit at the N.Z. Industrial Exhibition of 1885, with a request to exhibit at the Colonial and Indian Exhibition of 1886, which I did, and also paid a visit to the Old Country and the Exhibition. A very fine exhibit of extracted honey was shown by a Waikato firm. The honey was not so white in colour as our R.E. honey then was, but I was told it was the class of honey best liked at Home. I also attended a splendid show of honey at the Crystal Palace, where I saw honey of every shade of colour, from water-white to nearly black. I was also introduced to several of the leading English apiarists, and visited a large fruit and bee farm in the south of England. It struck me, however, that we had not much to learn from English beekeeping.

Later on, I exhibited at the Melbourne Exhibition of 1888 and the Dunedin Exhibition of 1890, and gained first awards from both.

THE SURVIVAL OF THE FITTEST.

(By A. JOHNSTONE.)

I have been asked to write a short paper on some subject in connection with the beekeeping industry.

The subject I have chosen, "The Survival of the Fittest," is one which is not very often discussed amongst bee-keepers. Nevertheless it is a natural law, and is of importance in the modern apiary. I am sure there are amongst you men who have noticed how strong some colonies are in defence of their hives, and also how weak others are—in fact, some will give in sooner than put up a fight, and make no resistance whatever to the removal of their stores by robber bees. These weak colonies are, in my opinion, degenerates, and it is simply a natural law that is being carried out—the survival of the fittest.

Is it in the interests of the industry to try and protect these "wasters" in any other way than by re-queening?

I say, No. But there are beemen who evidently think otherwise, as shown by a case that came before the Supreme Court in Christchurch recently, wherein a man claimed £1000 damages from a patent agent, owing to this agent having allowed a patent device for the protection of weak colonies of bees to lapse. This device was simply a revival of the old soldier's one-bee way theory, in which the bees were supposed to be all waiting inside the hive to bayonet the robbers one by one as they came through the device. The advocates of the device—and there were some experienced men among them—maintained that this device would be of great value to the industry, and, notwithstanding it would require the immediate attendance of the beekeeper, it would enable him to save these weaklings with profit to himself.

My experience is just the reverse. About twenty years ago I introduced into the district the yellow race of bees, and I was up against trouble at once in the apiary. The bees we then had were all black or brown, but usually called blacks, and had been here for about fifty years. During that time nothing had been done to improve them for utility purposes, but, on the contrary, the old practice of sulphuring the heaviest and most energetic, with the result that we had a large percentage of degenerates in any given number of colonies. Now, as I always got fairly good results from my bees when this new race of bees got fairly going, they soon found out these colonies which would not put up much opposition, and of course cleared them out of stores, and not only mine, but for miles round my

apiary the small farmers complained that bees did not do so well as they used to, and were dying out.

Now, if we just had some of these devices, some men would say, and could save these farmers' bees for them, it would be good work, but to me it appears an effort to oppose one of Nature's laws.

In my own apiary I tried everything to save my colonies, the bulk of which were fairly strong, until I could re-queen them, and one of the devices I used was the one-bee way, but I soon found out that where one bee could get out a good number could get in. On one occasion I tried to hide a hive at night amongst the fruit trees, but in the morning several little fellows were waiting there for me to give them a one-bee way. That evening, however, I gave the weak colony a frame of brood and bees from an Italian colony, and there were no more robbers in that hive, and by adopting this method with all other weaklings, it effectually stopped any further pilfering, and enabled me to requeen without the loss of a single colony.

And I consider all our efforts should be directed to improve our race of bees for utility purposes, and we should not waste our time in a blundering effort to appear clever by meddling with one of Nature's greatest laws.

At the present time, with the race of bees I have, there is no robbing of stores. There are, of course, attempts, but in all cases the resistance is effective.

It is my custom every spring to make up about 100 two and three-framed nuclei for mating purposes, and, with a two by three-eighths of an inch entrance, there is never one of these robbed, although some are left oneeless right into the spring. (This is in the case of their queens being removed at a time when it is too late to requeen, and I do not think them worth uniting.)

The selecting of the breeding queen is of great importance in the organising of a good race of bees, and perhaps the mating of the young queens is of as great importance.

In regard to the young queens, I get the best results in midsummer, when there is a good force of drones flying in the apiary. Some beekeepers advocate very early mating from selected drones, but after trying this method for a few years I had to abandon it on account of some swarming strain of bees in my district having drones long before I could get them. There was also a disadvantage with late queens, but in this case the trouble was uncared-for queenless colonies with drones flying very late. I find that, taking midsummer as the time, almost all queens are mated purely, and that with plenty of drones there is little danger of queens getting away from the apiary, but I have witnessed only one act of fertilisation there. It is essential from a utility point of view, however, that all the queens in the breeding apiary should be of the very best, and a man is lucky who has one or more out-apiaries from which he can choose his queens for this purpose.

I would close my remarks by again drawing your attention to this idea of improving our bees for utility purposes, so that, instead of tampering with Nature's laws, it may follow as a natural consequence of the "Survival of the Fittest" that we shall perpetuate a race of bees which will be a credit to New Zealand.

Christchurch.

THE OFFICIAL REPORT.

The publication of an official report of the Conference had been brought up at an earlier stage, when it was decided to ask for some assistance in having the papers printed. Mr Kirk, who had made inquiries as to whether the Department had any funds which could be used for such a purpose, stated that the Department would grant the sum of £10 towards the cost.

The President moved a vote of thanks to Mr Kirk, which was carried by acclamation.

WATER CONTENT OF HONEY.

Mr Gibb pointed out that the regulations under the Pure Food and Drugs Act allowed honey to contain 20 per cent of free water. It was thought that a man might buy honey containing only 16 per cent of water, liquify it, and raise the water percentage. They, therefore, suggested that the figure should be reduced to 22 per cent, and he moved, "That this Conference of beekeepers would like, in order to prove their contention that New Zealand honey obtained in any part of New Zealand, does not naturally contain such a high percentage of water as 26 per cent, to ask Mr Kirk to instruct his apiary inspectors to collect as many samples of honey as possible and submit the same to the Government Analyst for his analysis."

Discussion was deferred until a committee had interviewed the authorities, and, later on, Mr Gibb announced that the matter had been brought under the notice of Dr. Frengley. The suggested drop to 22 per cent had been mentioned, but it had been decided to defer fixing the percentage until the analyses were made, when an average would be struck.

The original motion was seconded by Mr Hopkins, and carried unanimously.

CO-OPERATIVE EXPORT.

Mr Cottrell read a report from the committee set up to consider the question of co-operative export. The committee, having regard to the importance of obtaining reliable data on which to base an extensive co-operative export scheme of honey from New Zealand to other parts of the world, suggested that the executive of the Association should be asked to obtain this information from two already successful honey producers' associations conducted in the United States. The committee further suggested that upon the receipt of this information the Executive should be instructed to formulate and put in force for next honey season a workable scheme as to the best means of obtaining the highest possible price for New Zealand honey on an export basis. In inaugurating the scheme, it was further suggested that the executive of the Association should approach the organisers of two New Zealand prospective co-operative concerns, with a view to working in with them on the best terms available.

The report was adopted.

Mr Cottrell then moved that the executive be instructed to formulate a workable co-operative export scheme on the lines of the committee's report dated June 20.

Mr Brickell seconded the motion, which was carried.

MISCELLANEOUS MATTERS.

On the motion of Mr Allan, it was decided to ask the High Commissioner to include honey in his weekly report of market values.

Another resolution, moved by Mr W. Hooper Teed, drew attention to the desirability of honey figuring with dairy produce in the exhibit arranged by the High Commissioner in the Dairymen's Show in London next September, and also at the Bakers' and Confectioners' and Grocers' Shows, which take place on consecutive weeks before or after the first-mentioned event. This was seconded by Mr Askew, and carried.

On the motion of Mr Allan, seconded by Mr Bartlett-Miller, the confirmation of the adoption of the constitution was agreed to.

On the motion of Mr Pearson, it was decided that the executive should consider the advisability of holding the next Conference at Auckland during the Exhibition.

Mr Bray moved a formal resolution confirming the resolution passed at the last Conference regarding the compulsory grading of honey for export. This was seconded by Mr E. G. Ward, and carried.

ELECTION OF OFFICERS.

The election of officers resulted as follows:—President, Mr J. Allan (moved by Mr Bartlett-Miller and seconded by Mr Cottrell); vice-president, Mr J. S. Cottrell (proposed by Mr Bartlett-Miller and seconded by Mr Gibb); secretary and treasurer, Mr R. W. Brickell (proposed by Mr Gibb and seconded by Mr Bartlett-Miller). Messrs Ireland and Gibb were elected members of the executive for the South Island. Messrs Hutchinson, Gilling, and Bartlett-Miller were proposed for the North Island, and, a ballot being taken, the first-named two were elected. Mr Baines was elected auditor.

On the motion of Mr Adams, a hearty vote of thanks for past services was accorded to the late president and secretary. It was also decided that the sum of £10 and his expenses to the Conference should be voted to the late secretary (Mr Ward).

RAILWAY FREIGHTS.

Mr Allan reported that the deputation appointed by the Conference had waited on the Minister for Railways, and had received his assurance that their representations would be taken into consideration during the revision of freights which was to take place shortly.

At a later stage, Mr Allan reported that another deputation had waited on the Premier with regard to the proposed amendments to the Apiaries Act, to emphasize the need for equipping the instructors with motor cycles, and also with regard to the need for a chance in supervision of the Government apiary—to bring it under the control of the Apiaries Division. They were favourably received by the Premier, who had promised to see that these things were, as far as possible, carried out. (Applause).

N.Z. PRODUCE IN ENGLAND.

An address was given by Mr W. D. Lysnar, the organiser of the Bristol and Dominions' Producers' Association, Ltd., on the advantages to be gained by shipping to the West of England ports in preference to London, and he also explained the objects of the co-operative association which he represented, and the methods by which it was intended to handle New Zealand produce in London.

A hearty vote of thanks was accorded to Mr Lysnar for his address and the retiring officers of the Association, and "The Press" were accorded similiar compliments before the Conference closed.

"N.Z. Farmer" Print.—1694.