Registered at G.P.O., Wellington, for transmission by post as a Newspaper.

The New Zealand Beekeepers' Journal.

NOVEMBER 10th, 1915.

ISSUED MONTHLY
FOR
THE NATIONAL BEE-KEEPERS' ASSOCIATION OF N.Z.

PER ANNUM: **3/6** IN ADVANCE.

STONE, SON & CO., LTD., PRINTERS, DUNEDIN.

The Beekeepers' Exchange.

FOR SALE. | WANTED. | TO EXCHANGE.

ADVERTISEMENTS on this Page will be inserted at the rate of 2/- per 36 words per insertion.

PROMINENT BEEKEEPER in Taranaki requires the Services of **CADET** or **PARTNER**.

Apply, in first instance, to

EDITOR JOURNAL,
Box 572, Dunedin.

BEEKEEPERS—Are you prepared for an early flow? By using "Acorn" Comb Foundation you can save at least 20 per cent. on your Foundation Account. Book your order now with

A. ECROYD, 177 Shirley Road, Christchurch.

BEESWAX worked up into foundation at a cost of 8d. per lb.; satisfaction guaranteed; samples on request.

R. J. H. NICHOLAS,
Hawera.

FOR SALE, "EAT HONEY" STICKERS; good advertising medium; 500 for 12 penny stamps.

SECRETARY N.Z. Beekeepers' Association,
Box 572, Dunedin.

Nov. 10, 1915.]

The New Zealand Beekeepers' Journal

The Official Organ of the
National Beekeepers' Association of N.Z.

No. 17 DUNEDIN. 3/6 Per Annum.

COMPLIMENTARY AND OTHERWISE.

The report which we publish in this issue from Major Norton on the honey sent Home to Bristol by our Co-operative Association during the past season is in some respects most gratifying. It shows that the expectations of the promoters of this export scheme are being realised, and it gives promise for the future. Different grades of honey are being sent to the markets in which they are likely to obtain the very best results. One unfortunate beekeeper has had his honey on consignment in London for over twelve months. This consignment was offered to our agent for less money than he is prepared to advance at ship's side in New Zealand. Comment is unnecessary. If there are any others in a similar position, it would be advisable for them to communicate with the Secretary of the Honey Company.

In other respects the report makes us just a little ashamed that after all that has been printed and said on the preparation of honey for the market, stuff should arrive which the Major describes as "lovely rubbish," and of which he sarcastically writes: "They do not mind an occasional bee corpse, but would prefer rather a smaller quantity in future." How honey of of this description passed the graders we cannot imagine, but we presume the circumstances will be investigated by the Department in due course.

It has been suggested by some correspondents that more prominence has been given to the scum question than the subject warrants. The information published in this issue from Major Norton in this connection is a complete justification for all that has appeared. After reading this report, we are forced to the conclusion that we must find some means of eliminating scum entirely. A very simple calculation will show that the shippers are losing at least £100 per annum, and this works out at about £1 per ton on all the honey we shipped last year. The tins in general use amongst us are apparently most unsatisfactory. Numerous cases of damage in transit are reported by the Railway Department. The graders find in almost every consignment tins which have been opened up, and in many instances messed up the bulk of the shipment. Most of the trouble is caused through defective workmanship in the making of the tin. The tinsmith is chosen not because he turns out good work, but generally because he quoted a lower price than his competitors. Having secured his order, the tinsmith's next trouble is to make the job pay. He carefully chooses the thinnest tin, uses as little solder as possible, rushes the order through, and trusts to luck. The beekeeper pays the extra cost of a good tin many times over through the loss of honey in transit, and the final purchaser complains of short weight and a messy consignment. Good packages pay their small additional cost many times over.

QUEEN REARING.

By J. C. HOBBS.

In reply to "Critic," page 258, I wish to say I prefer the Doolittle method of queen-rearing. As I wish to do queen-rearing at all my apiaries, and six out of eight have no buildings in this locality, the weather is often bad when I want the cells built; therefore I use the comb of brood plan. By this method I can secure an abundance of cells even in bad weather at out apiaries. It only requires a few seconds to take a comb of brood from one hive and put it into another. Doolittle gives us the time it takes to set a batch of cells by his method as 20 minutes, and then it has to be done in a building heated to 90 deg. by artificial heat, or in a closed room with the sun pouring on it. I have grafted cells on a fine hot day out in the sun with good results. The brood and larvæ should not be exposed to the sun for any length of time. I find it a great advantage to use several methods of queen-rearing, and adopt the one that is best suited to the circumstances. I avoid as much as possible the carrying of queens and cells from apiary to apiary, so arrange to rear where they are wanted.

If I fail to produce as many young laying queens at an apiary as are required for the honey season, I take a few full colonies from an apiary that has done extra well, and that balances things. I rarely ever introduce a queen to a colony. (The method used for shifting bees is very safe, and not much trouble.) As 90 per cent. of my colonies are hybrids, and hybrids are the worst bees in the world to introduce queens to, no queens are given them, only cells. I have found in the past that black and Italian bees that are pure will accept queens nearly every time, but hybrids hardly ever. They seem bent on rearing their own or going queenless. To illustrate my point, let me say a farmer may prefer to have his cows milked by a kind and gentle woman, but, having a large herd, he is compelled by circumstances to use men and milking machines.

Dr. Miller, in "Gleanings," one of the most successful comb honey producers in America, uses the comb of brood method, and so do American beekeepers whose fingers are too awkward to graft larvæ, which also requires good eyesight and plenty of light. I know by experience that good cells can be procured by the comb of brood plan when it would have been impossible to use the Doolittle plan at all. What I strive for is to do the best under the circumstances rather than do nothing at all.

If I have queens that are laying 2,000 to 3,000 eggs a day, I let them alone in their useful occupation. A queen is never destroyed until she fails or shows signs of failing.

I have hives with the 1913 season queens, who have about 50 square inches of brood, 50 bees to the inch, 2,250 bees for three weeks' work for a queen. The queen is thus laying about 170 eggs a day. On my last visits through the apiary these colonies were marked, indicating that the queen required attention.

As soon as I set cells these queens are killed, and on the next visit their own cells are destroyed and a good cell reared

from Italian brood is given to each of them. In three weeks time there are usually three combs of larvæ and eggs in the hives. By giving these colonies one or two combs of brood from extra strong colonies that might contract the swarming fever, the young queen is helped forward and the other colony held back. It will be seen that the loss of bees, instead of being 44,000, is only about 2,420, which is quickly made up by the young queen, especially if she is assisted with a few combs of hatching brood. Why anyone should think of superseding a queen laying 2,000 or 3,000 eggs a day, I don't know. My bees usually begin to supersede and swarm about the 1st of October. I then start and rear early queens. It is best and most economical to mate early queens in full colonies or very strong nuclei hives, so that the young queen can get to work straight away and lay to her full capacity, and her bees be ready for the main honey flow, about Christmas time here.

There are usually plenty of cells from Italian larvæ or brood at my apiaries in the swarming season, as I have provided for them as described in my last article on page 239, and not by trusting to chance. I often set two or three colonies for cells at an apiary at one visit, so as to have plenty of pure Italian cells from my breeding queens at my next visit. My breeding colonies never swarm, as the taking away of occasional combs of larvæ and eggs holds them in check, and yet they are always strong enough to give an average extracting when that time comes.

I occasionally have pure Italians that not been used for breeders. If these start cells, their cells are also used. I do not tolerate hybrid cells and queens, but destroy them all. My early nuclei are always worked up to full colonies as rapidly as possible; their queens are too valuable to run any risk by introducing them to full colonies.

I cannot see that there is anything gained in keeping an old queen in a nucleus hive "doing a little" while you are raising a young queen in her old hive. Why not have two young queens coming on, and run no risk of losing your one young queen by uniting strange bees with her? Old queens lay only about 200 eggs a day, or often stop laying altogether, or become drone layers, which is even worse.

Kill your old queens, I say; make plenty of strong nucleus hives, and build these up for the honey flow with brood from strong colonies that want holding back. These built up colonies with young queens rarely swarm, and gather large crops of honey should conditions be favourable.

If the day looks kinder gloomy
An' your chances kinder slim;
If the situation's puzzlin'
An' the prospects awful grim,
An' perplexities keep pressin'
Till all hope is nearly gone—
Just bristle up and grit your teeth,
An' keep on keepin' on.

NOTES AND COMMENTS ON NEW ZEALAND HONEY.

By MAJOR NORTON.

(Being extracts from letters sent to his Office in N.Z.)

You will be pleased to learn that we are making splendid headway with the honey business. "New Zealand Honey Producers' Association" brand honey may now be had at the leading stores in London, including the Army and Navy Stores, Harrods, Ltd., and Civil Service Stores, and hundreds of leading grocers throughout the United Kingdom. We are turning out from 800 to 1,000 vessels daily, which is our full capacity, and at this find difficulty in keeping pace with the orders.

I always read the N.Z. Beekeepers' Journal with interest. In the issue of June 23rd, on page 211, you will notice, "Revenge when the purchaser at the other end liquifies the honey for bottling the scum will disappear." Now this is just where Mr. Ireland is wrong; it does not disappear; we take off as much as 20lbs. of scum as a result of one day's working. This we will sell to confectioners at 16/- per cwt. We are keeping a record of the numbers of the greatest sinners in this direction, and will, of course, deduct it from account sales.

Weights.—Some improvement must take place next season; the percentage of short weights is altogether out of all reason. Surely the beekeepers had better be half a pound over than under. Anyway we are not going to lose it; every tin is weighed and recorded against each particular vendor, so that when the account sales go out you will know who the culprits are.

I offered a line of honey taken over from Henry Lane and Co. to Spring and Co., Ltd., who claim to be the largest packers of honey in Great Britain, and they replied that there is plenty of the finest white Californian, which is equal to New Zealand, offering at 30/- per cwt. I have an offer from another firm quoting us 35/- less 2½ per cent. for a consignment of New Zealand honey which they have had in stock for twelve months.

I again call your attention to the weights. Five of the tins sent forward are actually in the scale, many of them being barely on the grass.

We are not sending you any account sales out yet, for the simple reason we cannot very well clear up any one shipment, as a matter of fact we are working on practically all of them by calling out the different classes of honey that are suitable for the different districts in the United Kingdom. For instance, that medium amber colour would not sell at all in Bristol, but it is just what is required for some parts of Scotland and Cumberland, nor would it sell in London, while on the other hand, the honey that is suitable for Bristol and London is a deal better in most parts of Scotland, or anywhere they are used to heather honey. This is one of the many instances where I venture to suggest our objections to be suitable to the New Zealand Honey Producers' Association. If they sent their honey to London brokers, they would get about 2d. per lb. for it.

I shall be glad if you will point out that some of this honey appears as if it had not been strained. It is full of specks

and some of the tins contain quite an unnecessary proportion of dead bees. We don't mind an occasional bee corpse, as this gives a certain amount of evidence from where the honey originally came; but kindly ask your friends to minimise the quantity somewhat.

I am pleased to say the sale still continues to increase, despite the fact that we are now up against some very severe competition with regard to prices. Only yesterday I heard that one of the large preserve firms in London is now offering English honey at 7/8 per dozen in nominal pounds.

Tins.—The tins of "Taimu" were very badly made; some of them did not appear to have been soldered at all. They were covered with some sort of peculiar varnish, which is unnecessary, and we would be obliged if you will advise your members accordingly. Plain tins are all that is required, but let us again emphasise the fact that **they must be strong.**

SOFT CANDY FOR BEES.

THE SO-CALLED "FULLER CANDY" FOR QUEEN CAGES, TRANSPORTATION OF COMBLESS COLONIES, STIMULATIVE AND GENERAL FEEDING.

By Dr. BURTON N. GATES.

[Concluded.]

As soon as the sugar has begun to dissolve, prior to boiling, the spoon or paddle used in stirring should be removed from the kettle. The candy should not be stirred while cooking; to do it will cause a coarse grain. Remove from the stove and cool to 125°—130° F. (or 51.6°—54.4° C.), after the specified boiling point has been reached. While cooling, in order to equalise the temperature, the mass should be stirred; or preferably, when cooled to the specified degree, it should be stirred until it commences to grain. Mr. Fuller's directions are to stir vigorously until the mass appears in colour and consistency like boiled starch or paste. At once pour in moulds or feeders and cool.

As a warning or explanation, it may be said that the higher the temperature at which the candy is boiled the harder it will become; consequently, by varying the boiling point at which the candy is removed from the stove, the hardness or softness of the product may be governed. Furthermore, as is the experience of confection makers, candy should be boiled to one or two degrees higher on cloudy or humid days than on a clear, dry day. By means of a thermometer and a little experience, these features are readily learned.

Remaking the Candy.—If at any time the candy hardens from any cause, either in making, storage, or in use, it may be softened by the application of a few drops of water. Furthermore, it may be removed from the moulds and re-cooked to the desired consistency. To re-cook, add a small amount of water, and boil as before.

Siftings.

(By J. S. COTTERELL, Waikato.)

Crop Prospects.—Unless systematic feeding has been resorted to the past few weeks, serious loss of bees from starvation must have resulted owing to broken and unfavourable weather for flying and honey secretions. Stocks are now (Nov. 3rd) only in fair condition, with little open brood, whilst the combs are dry of both pollen and honey. I estimate a shortage of at least 25 per cent. of the crop as a result of the above conditions.

Hand Bottom Board.—C. A. J. (page 266) states that his queens take a holiday for a week during the height of the breeding season. They don't act that way up here; too expensive a game to let them get into such a condition, with queens capable of laying 4,500 eggs a day, if given ample room in which to lay. Even when a swarm issues (which at present writing seems in the dim future), eggs and brood in all stages are found in the swarming colony.

Swarm Control.—C. A. J. (page 267): This is on the lines of the Texas plan, published years ago in "Gleanings," and is almost identical with the Alexander-Miller-Fowls-Townsend method of making increase and keeping down swarming (page 574 "Gleanings," July 15th, 1915), with the exception that C. A. J. does not remove the top brood chamber to a new location, nor yet the queen cells, but leaves the hatched virgins to have a battle royal in the supers. I tested this out myself one season, and the result was fourteen dead queens on excluder, and a swarm issued with a skim milk queen which was able to get through the excluder. Better make a sure job of it, and cut all queen cells in nine days, and if a wood mat is used I have never found any of the top brood chilled.

Froth for Efflorescence (page 268).—Starting granulation by stirring in a portion of grained honey to that recently extracted, I am not quite sure is going to prove successful, and I am inclined, from last season's experience, to side with the writer of the article "What Is It?" when he states that the honey so treated shows a larger percentage of froth, and is not so firm as when allowed to granulate without any admixture or starter of already grained honey.

Honey so treated by me lost points on scum (sic)—i.e., froth, whilst the condition was not as firm as unstarted honey. My theory is that air is admitted to the body of honey when mixing, which after tinning comes to the top in the shape of froth (scum?) By applying heat and tinning 24 hours after mixing would, I think, get over the difficulty.

Atmospheric Feeders (page 277).—One inherent fault of all feeders, as described in this article, is their liability to feed too rapidly, when the sun raises the temperature of the hive, which expands the air in the feeder, besides which the feeders, unless well boiled in wax, soon become rusty inside. Feeding by means of the Alexander feeder of well-waxed wood is both more satisfactory and speedier. If O. R. B. is wedded to his tin feeder, why not replace his quilts with a wood mat with 3-8 inch bee space above the frames, and then have a ¾-inch hole always available for feeding purposes. With weak

colonies both a wood mat and a well-waxed quilt would be necessary.

At a future date I may have something to say as to wasted bee energy by giving them a quilt to tear to pieces, or else cover over with wax, also how to keep the margins of of hives free from grass and weeds at little expense. But that's another story.

[We should like to hear the other story.—Editor.]

Comments on Passing Bee Events.

By CRITIC.

Page 268.—The sooner we are in possession of definite knowledge about the "efflorescence," "foam," "scum," or whatever we like to call this substance that rises on and grows in honey, the sooner we shall know how to deal with it. At present we are in the dark about it, and putting forth all manner of theories concerning its composition, and how to prevent or get rid of it, not one of which has been at all convincing. The best thing, in my opinion, that could be done would be to submit three or four fair samples of honey containing this substance—at least two of them to be in the condition where growth is taking place—to a leading sugar expert for his opinion. I believe we would be more likely to get a correct report from such a person than from a general analyst.

Page 270.—With regard to deep and shallow supers, if I am right, Mr. Cotterell either leaves his honey in the hives until near or quite the end of the season, or until there is a number of shallow supers with all their combs full before extracting. In either of these cases I can quite understand working with shallow supers would be an advantage. I prefer, however, not to wait until the whole of the combs in a super are finished and ready to remove, but to go through the hives at intervals (shorter or longer, according to the flow of nectar) and remove such combs as are ready for the extraction. By this means more working room with fewer hive bodies and combs can be given just when most needed, which must tend to prevent swarming. With this way of working all, or nearly all, the honey is off the hives before robbers are about at the close of the season. The little that may remain can be readily removed by the use of escapes. The advantage is having only one size of body and frame, interchangeable as brood chamber and super.

Page 374.—A. C. Askew: I can answer your query, "Does growing scum cause fermentation?" with all confidence.—No, it does not.

Page 258 (Sept. number).—I commented upon the subject of the reprint of Mr. Herbert Mace's article on Italian v. black bees sent you by Mr. Baines. A reply to Mr. Mace in the "British Bee Journal" for August 19th last, page 297, by a British beekeeper completely refutes and negatives all Mr. Mace's assertions regarding the superiority of the blacks. The only one colony out of twenty-five that resisted "Isle of Wight" disease was an imported Italian; the rest succumbed.

STANDARD DENSITY OF HONEY.

You suggest in your last issue the need of a "standard of density for extracted honey," and ask if anyone can suggest how to get uniformity. I do not think it possible to get uniform density of honey unless we resort to some undesirable manipulations, nor is uniformity of importance so far as I can see. What is really of importance is that a minimum standard of density should be generally known, below which no honey intended for market should be allowed to leave the apiary, for the reason that it would contain too much moisture, and in consequence would be liable to ferment sooner or later.

With regard to density, it is a well-known fact that the natural moisture in well-ripened honey varies according to the average rainfall in the part of the country where it is gathered. For instance, the average density of honey gathered in most parts of the North Island is of a lower specific gravity than that produced in the eastern half of the South Island owing to the greater average rainfall in the former. In this connection variation of moisture in honey is clearly shown in the bulletin on "Chemical Analysis and Composition of American Honeys." Therein is a sketch map showing the dry and moist areas in several of the States. In the dry area, with an average rainfall of 10.6 inches, the average moisture content of honeys gathered in that area is 15.00 per cent., while in the moist area, with an average rainfall of 30.9 inches, the average moisture in honeys is 18.88 per cent.

Now, as the average moisture content of our honey in the North is higher than the average in the southern honey, water would have to be added to the latter to make the density uniform, and of course this is out of the question. If we endeavour to fix a minimum density for all our honey, we shall have done all that is needed to instruct our beekeepers how to ensure their honey keeping for any length of time in good condition, without risk of fermentation. The only way to ascertain the comparative density of different honeys is by the hydrometer, or, rather, it is the readiest and most accurate method for beekeepers. Every commercial beekeeper should make a practice of testing each tank of honey before tinning it, and recording its specific gravity, and keep samples to test by time.

I came to the conclusion several years ago, after making something like 250 tests of different samples, that the minimum specific gravity of what we are accustomed to call clover honey should be fixed at 1.420. This indicates a water content of between 17 and 18 per cent., and honey of that specific gravity granulates firmly, and will keep for any length of time. I have samples of that density in my possession nearly nine years old, as good as the day it was bottled, and at the Ruakura Government Apiary there are over 60 samples in glass jars taken each season since 1907 (included), most of it of 1.420 specific gravity, as good as ever. It is possible that honey of a specific gravity of 1.415 might keep as long, but I would unhesitatingly fix the minimum standard at 1.420 specific gravity.

I. HOPKINS.

NOTICES.

A meeting of directors of the New Zealand Co-op. Honey Producers' Association, Ltd. will be held in Wanganui on Wednesday, November 17th. The directors will be pleased to consider any matters shareholders wish to bring before them. Letters should be addressed to F. C. Baines, Secretary, Post Office, Wanganui.

The Department of Agriculture will welcome applications from beekeepers in various parts for the position of local inspectors under the Apiaries Act Amendment, 1913. Whilst under the present unsettled conditions the Department are not able to offer any salary, they do pay out-of-pocket expenses. In Taranaki three enthusiasts are at work, and already there is a great improvement in the conditions. Full particulars will be sent to anyone interested on application to Mr. T. W. Kirk, Department of Agriculture, Wellington.

There is a tendency on the part of some writers to indulge in personalities. We take this opportunity of intimating that such articles are vigorously blue-pencilled or consigned to the waste-paper basket. It is just as easy to attack or criticise a previous writer in a friendly spirit as otherwise. The identity of writers under a nom de plume cannot under any circumstances be divulged.

MEETINGS.

The Canterbury Beekeepers' Association held a quarterly meeting in the Trades Hall on October 5th, Mr. E. G. Ward (President) in the chair. Mr. R. W. Brickell, secretary National Beekeepers' Association, wrote advising that it will be necessary that the National be registered under the Unclassified Societies Act before the subsidy is available, and steps are being taken to do this. The President of the Christchurch Poultry Club had approached Mr. Ward as to whether the C.B.A. would be willing to take part in a honey display at the Club's Exhibition next June. It was agreed to assist, and details left to be arranged between the two Presidents. At the request of the National Association it was agreed to alter the ending of the financial year of the C.B.A. to coincide with that of the National. The annual field day will be held in the early part of the year, and arrangements were left to the Committee. It was reported that there are still a number of box hives in existence. The inspectors have been instructed to be strict in enforcing the law, and as the penalty for infringement may be anything up to £5, it would be well for keepers of box hives to take warning. On account of the dry weather which has lasted so long, the prospects for the coming season are by no means bright, but as an effect the market for honey is assured.

It is stated that clover is "going off" in the Wairarapa, and that graziers are calling out for bees to strengthen it.

Honey Crop Prospects.

The Director of the Horticulture Division has received from the apiary instructors the following reports concerning honey crop prospects:—

Auckland.—The weather during the past month has been wet and stormy, and the bees have been unable to gather much. We now want warm weather, as there is an abundance of clover in blossom. The bees generally have wintered fairly well.—G. V. Westbrooke. 1/11/15.

Wellington.—The beekeeper being entirely dependent on the weather conditions for his annual crop, it is extremely difficult to estimate the crop returns until after Christmas. Clover does not secrete nectar unless the temperature is over 70 deg., no matter if rain is plentiful. The prospects at the present time are, however, good in most districts, and with beekeepers' ideal conditions—alternate showers and sunshine—a very prosperous season may result.—F. A. Jacobsen. 1/11/15.

Christchurch.—Forward colonies are storing honey in supers. There have been some nice showers in Canterbury and Marlborough, which were much needed, and will have a beneficial effect on the early honey flow. Swarms have been reported from several districts. Clovers are beginning to show up nicely, and present prospects are encouraging.—L. Bowman. 1/11/15.

Dunedin.—Good refreshing showers have been experienced in South Canterbury and North Otago Districts, and beekeepers are now more hopeful of a surplus. In Southland very cold weather has compelled the beekeepers to start feeding, but the prospects are brighter than at this period last year. Little honey in bulk is offering, and beeswax still remains scarce.—E. A. Earp. 1/11/15

SCUM UNDER THE MICROSCOPE.

By H. BARTLETT MILLER.

It annoys me to note the amount of opposition to scum (so called) reported from time to time. To satisfy myself upon the subject, I have made a large number of experiments with clover honey, nearly pure, ti-tree honey too thick to extract, also nearly or quite pure, and with a mixture of a number of honeys gathered in Waikato. The three kinds of honey were sufficiently diverse to make the experiment conclusive. In company with Inspector G. V. Westbrooke, I put under the microscope (with a power of 43 diameters) a small amount of scum, which we took from a 2-lb. tin of butter-coloured candied honey from my own yard. The inspector had just come from the 1913 Conference, and made a request to see scum under power, as he and others had been discussing the matter—the others, I think, rather "cursing," though perhaps under their breath—at the Conference. We found at that power (43 diameters) absolutely nothing but air bubbles. We raised the power to 105; still nothing but bubbles all over the field, and one tiny speck not so large as a pin-point at that enlargement. Now, remember 103 diametres is 103 times each

way, so that the real size of what we looked at was over ten thousand times larger than the actual bubbles. At that time we had not opportunity to wait while I fixed up the microscope with the lens magnifying a thousand diameters, but, being interested in the subject, I determined to make the matter one for future research, for I must admit I was agreeably surprised, as also was the inspector, to find that, as far as we had gone, scum proved to be only bubbles.

Further research was carried out by myself alone with honey drawn at different temperatures from the tap of the honey tank, 26 in. diameter and 34 in. deep, just as any up-to-date beekeeper would do; the presence of scum, only differing in quantity, was always the same, the result being determined exactly by the density of the honey, and this density was determined of course by the heat of the honey at time of drawing it off.

Now, in this article I am not referring to the scum containing visible dirt, resulting from drawing down so far in the tank that the surface gets sucked down from the tap a foot or more perhaps below the surface of the honey. No honey was drawn when the tank was less than half-full.

Results.—Ti-tree (manuka) honey, being too dense to extract, was passed through melter, which runs off every particle of melted honey within thirty seconds of actually melting its encasing wax. Whether cold at 59 deg., or hot at 126 deg., no scum whatever was visible after four days upon manuka honey. But when placed under the highest power of the microscope—viz., 1012 diameters—this manuka honey tanked hot and drawn off at 99 deg. was perfectly clear of air bubbles, as one would expect it would be, having at such a heat allowed all bubbles to rapidly reach the top in the tank. On the other hand, the same honey, run in at a temperature approaching the melting point of wax—145 deg.—and drawn off at 59 deg. showed in the honey an almost incredible number of air bubbles, and I conclude, without actual investigation, that it is the presence of these bubbles, which causes some lots of manuka honey to ferment some time after tinning. I know I have not had a tin show fermentation when drawn off hot. This led me to assume that it was the temperature at which honey fell into the tin that determined the amount of scum.

Clover honey extracted at 63 deg. and drawn off 36 hours afterwards, when at 62 deg. (this at nearly midnight, so as to have it as cold as possible), showed scum in 48 hours, and, indeed, the bubbles floating to the top when tested after drawing off did not break unless over one-eighth of an inch in diameter. Clover honey heated in the 2-lb. tin to 90 deg., and run into another 2-lb. tin from a height of 18 inches, also had bubbles float to the top, but the result when cool, 48 hours afterwards, showed no scum. Clover honey run off at 55 deg.—the temperature of almost all well water—showed little scum, but a large number of bubbles under the microscope, proving that at such a temperature the air bubbles were imprisoned. Such imprisonment, in my opinion, would have resulted in fermentation sooner or later. No bubbles were discernible in any clover honey run off at a heat of 80 deg. or hotter, and the warmer the honey when it runs into the package ne less the number

of bubbles in the honey always; but the temperature at which no bubbles are found in the honey is lower than that at which no bubbles (so-called scum) are found on the surface. The lowest temperature at which, in this locality, it is possible to draw honey from the tank and have bubbles neither in the honey nor on the surface is somewhere around 77 deg. to 80 deg., and this temperature, except on a hot, muggy day, is almost impossible of attainment unless a lamp is kept burning beneath the tank. Honey in late summer comes off the hive a deal cooler than the temperature of the brood chamber, which is from 95 deg. to 103 deg. Honey is seldom found over 83 deg., and then one has to quickly pass the comb into a warm room and bury the thermometer bulb in the honey at once. By the time it is uncapped and has awaited its turn to go to the extractor, it is almost the same temperature as the air, and, having ascertained that, you may easily find out whether your honey will send up bubbles which break on the surface by your own experiment. What the temperature will be when you draw it off from the tank in the far or near future, as opportunity allows, I do not know; mayhap some of those clever fellows who have been discussing scum recently can tell you, but you can rest assured that if the honey is lower than 77 deg. when it reaches your package that some of the resultant air bubbles carried into the package by the honey stream are going to stay there when they reach the top, and such a coating is that milky white foamy coat which the inspectors—as I think in their dire ignorance—turn down.

This may appear a trifle rough, but it is true, and while our living depends upon their lack of knowledge, it is high time that definite knowledge gave place to vague theorising. To turn down as unfit for export honey of good quality containing even a half-inch of just as good quality honey in bubble form rather than granulated, simply because they conjecture—no other reason—that it will be looked at askance in England—and we have proved that England never turns a hair concerning such clean scum—is, to say the least of it, not enhancing our confidence in those same graders.

(See page 284 for comment on last paragraph of this article—Editor.)

THE SOLUTION OF THE FOUL-BROOD PROBLEM.

I guess most every beekeeper knows what foul-brood is, and has had experience with it. Most of the beekeepers here, or a lot of them, look at it as if it was one of the necessary things that can't be helped in the production of honey, like spring feeding and swarming. I remember the first time I was over at Mr. Gilling's, and he showed me a bunch of combs which were to be melted up. I thought it was a joke at the time, as I had no idea there was so much foul-brood here. Anyway, the next season I had some experience of it myself. I bought eight hives, four of which were diseased, and the person I bought them off knew they were, too. He also sold odd hives round Eltham, most of which have since died out from it. I had eight cases of foul-brood with 65 stands first year; 17 diseased with 140 next; and this spring in August have already treated five. None of this disease was spread

from my own; it was all received from outside. From what I can see in the Journal, most of the beemen are getting just a little sore over the foul-brood question, and would like to know just what Mr. Bee Inspector is doing. Well, from what I can see of it, it is no use depending on the inspector to keep the district clean; the beeman will have to get busy and do that himself. I have seen the inspectors working over in California, and, comparing it with how inspection is done here, ours seems just a farce. I have seen Inspector Wagner, of Imperial County, where there are 20,000 stands, go through a yard of 150 and look at every comb that has brood in it, not missing a single colony. Recently I had a visit from an inspector, and, imagine my surprise, when he only looked through six or seven out of forty, and then only two or three frames in each. He passed the yard as clean, and shortly afterwards it was rotten with disease. I was told afterwards by one of the larger beemen here that if I wanted bees inspected properly to do it myself. The bee inspector should be a local man, who has an interest in the district, and knows it is to his own interests to get the disease cleaned up. I think New Zealand is the only place which has that out-of-date Government inspection system, which is keeping the industry back more than anything else. California has sixteen inspectors, one to each County; Colorado, which is a smaller State than New Zealand, has seventeen, if I am not mistaken. All of these inspectors are also beemen, large beemen, too, and do the inspection in their County. It doesn't make any difference to the Government Inspector whether there is foul-brood in a district or not, and to me he seems to be on an annual picnic, and just puts in a little spare time having a look at some bees. There are hundreds—yes, and I believe there are thousands—of box hives in New Zealand which the best laws in the world won't get rid of unless other action is taken. By the way, it would be a good idea if people who own box hives were fined straight away, for there is no excuse now for not keeping them in frame hives. I know the inspector has a large district to cover, but that does not excuse him from inspecting the bees properly; while at it he may as well go the whole hog. Now, Mr. Beeman, if you know foul-brood, get a job as local inspector, and clean up the disease round your way.

GET BUSY.

COMPETITION FOR YOUNG AND OLD.

We are very anxious to increase the circulation of our Journal, and we wish to enlist the active co-operation of the enthusiastic young folks in the homes of our beekeepers. We are led to believe that a good many young ladies and young men, as well as scholars in the upper school standards, are deeply interested in beekeeping, and that these can be induced to help us in securing new subscribers. We therefore ask all our young friends to make an active canvass among the people who live in the vicinity of their homes who keep bees and are not yet subscribers to the "New Zealand Beekeepers' Journal," and secure their subscriptions for twelve months. The amount

is very little, only 3/6 for the whole year, and we believe it will not be difficult for our young friends, if they will only set to work, to secure quite a number of subscribers.

By way of recognising the help given in this way we will give the following prizes:—To those who send in three subscriptions, we will post a copy of Tickner Edwardes' charming book, "The Lore of the Honey Bee." For six subscriptions we will send this book, and, in addition, a copy of Margaret Morley's "The Bee People"; while to those sending ten subscriptions we will present a copy of Maeterlinck, the great Belgian author's wonderful book on "The Life of the Bee," a work that is a real treat to every one that has any acquaintance with bees.

All competitions will close on the 31st December of this year, and lists, accompanied by remittances, should be addressed to

THE EDITOR, "N.Z. Beekeepers' Journal,"
P.O. Box 572, DUNEDIN.

Correspondence.

(TO THE EDITOR.)

Sir,—Mr. W. E. Barker's remarks re stirring honey suggests that it is a newly-discovered process still in the experimental stage. That such is not the case, the enclosed clipping from the "N.Z. Farmer" demonstrates. "Paddling" in damp weather would naturally have the tendency to stir moisture into the honey.—I am, etc.,

Matapu. A. W. GILLING.

While at Matamata (writes Mr. Hopkins) I accidentally stumbled on a scheme of improving the texture (grain) and also to a certain extent the colour of granulated honey—a simple process, to which no one can take objection. On one occasion I had overlooked removing some honey from the lower part of an uncapping can that had drained from cappings until it had so far granulated (though still soft) that it would not run through the honey tap. There was quite 100 lbs. in the can, and knowing that by stirring the honey it would be made soft enough to run, I worked it well with a wooden paddle until it ran slowly through the tap.

Not having been properly strained, I set this honey apart from that I was marketing. Some time after, when it had become firmly granulated, I was surprised to find the grain, or texture, of this particular honey much finer, and the colour somewhat lighter than that extracted from the same combs. After giving the matter much thought, I wondered whether the stirring of the honey had made the difference, and as the last of the honey had been extracted I had to wait until the next season before conducting conclusive tests. The result of several tests proved to my own satisfaction that stirring honey

when commencing to granulate does improve it. I have carried out the process ever since, and at the Government apiaries, and also made it known through the columns of the "New Zealand Farmer" on different occasions. I understand it is now generally practised by our leading beekeepers.

I had never read or heard of the process before I stumbled upon it, so that probably it can be claimed as a New Zealand discovery.

(TO THE EDITOR.)

Sir,—As to scum. Scum we shall have always with us. Also the more careless the beekeeper the more scum. And the scum of a careless beekeeper may be entirely different from that of a careful one. I do not take off my honey till thoroughly ripened. I strain it twice; the second time through a pretty fine linen strainer, the honey being warmed up to about 120 deg. Fahr. I get scum in proportion of about one pound to about 150 pounds of honey in the tank. The year before last I boiled this scum in a hot-water bath (bain-marie). The result was very good honey and traces of beeswax sticking to the edges. I therefore concluded that my kind of scum, at anyrate, is only honey churned up, this churning up being considerably enhanced by the honey being heated, and in that state falling from the strainer. Compare the froth produced by milk being strained. Last year I had honey in two tanks, capacity between 300 and 400 pounds. Scum rose on both. I skimmed one, repeating the experiment of the year before with precisely the same result, and the other I left as it was. I stirred both tankfuls of honey exactly the same way—i.e., thoroughly—for some four days, and then drew the honey off. And neither before nor after the honey became candied was there the slightest difference between the two. However, by way of caution, I would repeat that the honey was thoroughly ripened and thoroughly strained.—I am, etc.,

Coromandel. STEPHEN ANTHONY.

(TO THE EDITOR.)

Sir,—I notice that a correspondent has something to say re the Apiary Act of 1907 and the benefits to be derived if the Act was enforced. In our local paper to-day I read a clipping from the Wellington Post stating that the officials of the Agricultural Department are determined to get rid of box hives, it being illegal to keep bees in such hives. It has been illegal for eight years to keep box hives, and if the method of applying the Act is not changed box hives will be in existence eight years hence. The visits of the authorised official are too infrequent, and when a notice in regard to foul-brood, &c., is given, and steps are not taken to see that effect is given to the requirements of the Act, it is futile to expect good results. If the Apiary Act was applied as thoroughly as the Act relating to fruitgrowing (and I have a knowledge of both), we would have nothing to complain of.—I am, etc.,

Gisborne, Nov. 6th. JAS. B. ADAMS.

SUBSCRIPTIONS.

The following subscriptions have been received during the month:—

Thos. Gillies, H. Mitchelmore, E. J. Pink, T. A. Stewart, J. H. Todd, W. C. Twelftree, J. Walworth, A. Ecroyd, Adams & Scott, W. Bray, K. Huffman, T. J. Mannex, R. J. H. Nicholas, Pearson Bros., M. Ranger, W. H. Richardson, Mrs. M E. Wright, T. Chave.

Right through the American States the beekeepers and supply dealers are engaged in an extensive honey advertising campaign. One of the cheapest and most successful of their methods is the use of stickers on all letters, papers, and parcels sent through the post. The National Beekeepers Association has imported thousands of these "Eat Honey" stickers, and invites every beekeeper to use them freely. Grocers would use a few hundred if they were asked. Will you help? The stickers are just like the heading, gummed ready for use, and printed in bright red on white. A parcel of 500 sent post free on receipt of twelve penny stamps. How many shall we send you?

EDITOR, Box 572, Dunedin.

11,000 delivered to date. Good business!

Printed and Published by Stone, Son & Co., Ltd., Dunedin, for the N.Z. Beekeepers' Association. Nov. 10th, 1915.