The Australian bee bulletin. Vol. 2, no. XIX November 23, 1893

West Maitland, N.S.W.: E. Tipper, November 23, 1893

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THE AUSTRALIAN BEE BULLETIN.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

VOL. 2. No. XIX. NOVEMBER 23, 1893. PER COPY, 6d

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Hunter River Bee-Keepers' Association.

MONTHLY MEETINGS.

TUESDAY, DEC. 19TH.
At Maitland.

TUESDAY, JAN. 16TH.
At Branxton.

MICH. SCOBIE, Hon. Sec.

Contents.

The Australian Bee Bulletin

A JOURNAL DEVOTED TO BEE-KEEPING

WEST MAITLAND.—NOVR. 23, 1893.

WITH this issue we are adding the names of some four hundred New Zealand beekeepers to our list, also a New Zealand department to our pages, edited by a thoroughly practical and highly esteemed New Zealand beekeeper. In doing so our hope is, that we have united in the bonds of friendship and self-interest, and that the good-feeling among beekeepers that has made the *Australian Bee Bulletin* so popular in all the other Australian colonies will be felt and reciprocated in by our brethren in New Zealand; also, that mutual good to all will result. We invite the special attention of our New Zealand friends to our Special Subject and Question pages, and will ask them not to be backward in forwarding their local bee news, or names of new or neighbouring beekeepers.

WELL, Australian beekeepers, it is all your own fault! What the *Australian Bee Bulletin* is you have made it, by your good correspondence and enthusiasm on its behalf. So just listen to a little of what others say about it. The *American Beekeeper*, published in New York, U.S.A., by the W. T. Falconer Manufacturing Co., says:—*The Australian Bee bulletin* "is very interesting, and a credit to the country it hails from." That prince among bee papers, *Gleanings in Bee Culture*, says the *Australian Bee Bulletin* "seems to be going on with flying colors and gives everywhere evidence of long life." Since reading these notices we have felt tall, but with the continued good help of our many friends we trust to feel taller still, not however, unless the BULLETIN is the means of doing increased good—both educating the beekeeper and increasing the value of his products. Our sincere desire is, that the *Australian Bee*-KEEPERS' *Bulletin* will always be worthy of the good words of its cousins beyond the seas. And if these latter aims are secured we shall indeed feel tall

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WE have now something to say that we really don't like to say, but possibly the sooner said and done with the better. We have found so many noble, straightforward, and manly fellows amongst Australian beekeepers that we would fain believe they are every-one the same. But our faith is now somewhat wavering. We will first give our reasons for this and then a little quiet advice to whomsoever the cap may fit.

From the first issue of the A.B.B. we have forwarded copies to every beekeep-

er whose name has been supplied us, together with a request to return the next number unopened should they not not intend to subscribe to it. Furthermore they are still reminded of the fact of their indebtedness by the blue mark on the wrapper of each number they receive. We met a man the other day who has received the A.B.B. for nineteen months, and who would apparently go on to Doomsday without settling up. On quietly reminding him of his indebtedness, he said he liked getting the A.B.B., but *who told us to sent it to him?* We explained his position and believe he soon will settle up. To others who may perhaps think as he did, we will tell them the law throughout the British empire for newspapers is that if you receive you must pay for them, and they can be supplied to you as long as there is one unpaid for. Surely 5s. paid in advance and done with is better than the 6s. 6d. booked, and in extreme cases law and other expenses added.

WILL our friends please forward us postal notes or P.O. orders in place of stamps. We have quite a collection of stamps not belonging to New South Wales, which we cannot change, and have to be sent back to the colonies they came from to be changed at a discount.

HELD OVER.

Want of space compels us to hold over several valuable and well written articles on "Heredity in Bees," reply to Mr Gale by Mr. W. Abram, Beecroft, "A new Hive," by Mr. John Smith, Mount Cotton, Brisbane, Queensland, and "Brush made Foundation," by Mr. M. Scobie.

Mr. Jas M. Dumigan, North Killarney, writes :—In reply to questions, I am sorry to inform you, I have not had enough experience in bee culture, to answer questions. In regard to question 5, (re clipping queens wings). In my apiary, I keep all my queens wings clipped and I never experience any trouble. I find this little journal a boon to bee-keepers and hope to see it prosper.

The Special Subject Next Month

HONEY EXTRACTING.

We want short pithy articles on your modes of extracting, extractors you use, or other useful experiences re same.

QUESTIONS FOR NEXT MONTH.

The following questions were among those handed in at the late Beekeepers' Convention in Sydney, but time did not allow of them being discussed. So we are giving them now. We are indebted to Mr C. Mansfield, the secretary, for them.

6.—Has any bee-keeper from the cooler districts grown the American basswood, or Linden (*Lilia Americanus*), or known of it being successfully grown.

7 —Is it advisable to use galvanised iron for extractors and honey tanks.

Mr Ayers, of Perth, Western Australia, sends the following :—

8.—When honey candies, what is the best method to fetch it back to a liquid state again ?

9.—Does honey lose its colour or get darker with age ?

10.—Will you get more or less honey by using queen excluders ?

11.—Does honey improve its flavour as it gets older, say years ?

Will beekeepers kindly roll in answers by the 20th of December.

THE HUNTER RIVER.

On the 20th inst. the indefatigable Mr Gale addressed a meeting at Raymond Terrace. The same evening a meeting of the local beekeepers was held at Branxton. Mr C. Mansfield, the energetic new secretary of the H.R.B.K.A., having procured a large magic lantern, the Government have supplied him with 34 apicultural slides, which he exhibited at a meeting of beekeepers at the Paterson on the 21st inst., and afforded a most pleasurable evening to those in attendance. Mr Hopkins, of Tickhole, and Mr Hardy, of Lambton, are taking efforts to start an association in the Newcastle district.

NOTES ON HONEY

ITS SOURCE, CONSTITUENTS, ADULTERATION, PRESERVATION, ETC.

READ BY R. J, ELLERY, Governmont Astronomer, at the late Victorian Bee-Conference.

Honey is a substance prepared by the honey bee from the nectar collected from flowers. The bee gathers the nectar, places it in its honey sac, and takes it to the hive. But while in the honey sac it is subjected to a rapid chemical change, brought about by the saliva of the bees (which is secreted in large quantities), whereby the nectar, or flower syrup, is converted into a different and distinct material, which we designate by the name of honey. The bee, on arrival at its hive, delivers the changed nectar from its honey sac into the cells of the comb, So far the honey is clear and very fluid, so as to easily flow out of the cells if the comb be laid horizontally. As the cells are filled evaporation of the surplus water takes place, the honey ripens, and when it is at its proper consistency for keeping the bees seal it over by capping, to prevent further loss of water. It is supposed by some apiarists that before capping the bees insert into each cell a minute quantity of formic acid, or bee poison, as a preservative. Traces of this poison are found in the analysis of most samples of honey.

The sweetness of nectar depends on the presence of cane sugar, such as that of the sugar cane, beet root, etc.; but as the nectar is taken into the honey sac of the bee, it becomes subject to the chemical action of the saliva, which converts the cane sugar into a glucose or grape sugar, just as in the case of ourselves when we eat cane sugar, the saliva at once converts it into grape sugar, in which form only it becomes assimilable in our systems. Cane sugar if entering unchanged into the blood would act as a poison ; but when converted into grape sugar it becomes assimilated, and a producer of heat and force. It is in fact, a true food. The bee, then, while carrying the nectar to the hive, inverts the cane sugar it contains into grape sugar or glucose before it is deposited in the cells.

One of the most recent and well known writers on chemistry describes honey thus : —"The substance secreted by the working bee from the nectar of flowers, and deposited by the insect in the wax cells forming the honey comb. Its constituents are—varying quantities of sugar, dextrose, levulose, and sometimes cane sugar, a small quantity of water, a small quantity of wax, some colouring matter, aromatic substance, and occasionally manitol*" (*i.e.*, a manna or sugar, or honey dew). He gives : In 100 parts of honey —moisture, 19·3 ; glucose or grape sugar, 67·2 ; other constituents, 13.5.

*"Thorpe's Dictionary of Chemistry." 1893.

We therefore see that true honey contains 67 per cent of glucose sugar, besides other matters which go to give it the flavour and distinctive character of honey.

GLUCOSE SUGARS.

A word or two is necessary about the glucose sugars to enable you to see how near natural honey is chemically, to the artificial article with which the apiarist has now to contend. Cane sugar, when converted as by the honey bee, takes the form of glucose or grape sugar, of which there are two kinds, called dextrose and levulose, from their property of rotating rays of polarised light to the right or the left. Dextrose turns them to the right and levulose to the left. These sugars are so much alike in most respects that they are not readily distinguishable except by the aid of the polariscope or by careful chemical examination. There is this distinction however. Levulose is very sweet and not crystallisable, while dextrose is not specially sweet and is easily crystallisable, and to this property is due the ready granulation of most of our best honeys. Average honey is found to contain these sugars, levulose and dextrose, in the proportion of 39 per cent of the former to 34 per cent of the latter, bnt samples from different sources vary considerably in this particular ; in some West India honeys the proportions are nearly reversed. One of these sugars, dextrose, is now manufactured in large quantities from the starch of potatoes, maize, and other substances by the action of sulphuric and nitric acids and goes under the name of corn syrup, It is used largely in brewing, confectionary, etc., and, I am sorry to say, in the preparation of spurious honey and in the adulteration of true honey. It comes to our market quite a beautiful clear syrup thicker than honey; it is sweet, free from any unpleasant taste, except the mawkish sweetness of this kind of sugar; there is nothing unwholesome in it if quite pure, but it often contains a considerable proportion of a viscid substance known in commerce as dextrine or starch gum. This if in quantity makes the corn syrup less digestible. Corn sugar rotates polarised light right handed, and can therefore be readily recognised by the aid of the polariscope. There has been some controversy about the quality of honey produced where bees are fed on cane sugar syrup or candy, some contending that the syrup stored is simply *cane sugar syrup*. Examination shows, however, that it is partly or wholly converted into grape sugar, but apparently neither true levulose or dextrose, a kind of neutral grape sugar and therefore *honey*, minus the aromas furnished by true nectar honey. Bees fed on corn syrup store it as such The bee saliva produces no chemical change in it and it appears to me, from samples of such honey which I have tasted, that it is entirely deficient in the aroma and "grip" of true honey ; it is vapid and mawkish, much more markedly so

than honey stored from cane sugar feeding, which is also much less pleasantly pungent than true nectar honey.

(*To be continued.*)

BEE-KEEPING BY COMMUNITIES.

BY G. R. HARRISON.

One of the features of the present day is the forming of communities for carrying out various industries, or perhaps, more correctly, the forming of communities for mutual assistance and carrying on of various industries as the means to their end.

Here on the Hawkesbury I come in touch with at least three such, namely, the Pitt Town Village Settlement, the Wilberforce Labour Colony, and last, but not by any means least, The Women's Co-operative Silk-Growing Association of N.S.W. (Limited.)

Beekeeping is a business which always commends itself to the organisers of such associations for the following reasons. The capital outlay is comparatively small, the returns speedy and the work not of the most laborious nature, and under favorable circumstances and good management the returns are satisfactory.

AND GOOD MANAGEMENT.

That is the point. I know dozens of people who keep bees on frames, but only one in three make it pay, and a yet smaller proportion make a profit.

But these communities generally have a good choice of material for leading positions, and have generally the means of ascertaining the best method, and I believe "communities" are going to make it pay.

The principal at the Hawkesbury College is interesting himself in both settlements, while the Pitt Town one has the advantage of the advice of that thorough apiarian and humanitarian, the Rev. John Ayling.

The Silk Growing Association, whose object is "to open up avenues of employment on the land "for women of all classes, of whom large num-"bers are now in great distress. For this pur-"pose to establish, on co-operative principles, "industries suited to their strength and capaci-"ties, and of a profitable nature. Chief among "these, and as a staple and permanent one, is "extensive silk growing, supplemented for "quicker returns by such other industries as bee-"keeping, scent-making, and herb and drug-"growing, all of which employments can be "carried on by women"—will probably be a success in the bee branch. The young lady (Miss Manning), who is to take charge of the bees and poultry, is a woman of education and refinement, with that qualification so necessary before obtaining special knowledge on any subject, a good general knowledge, and also is of the temperament which is necessary for the controlling of living beings, great or small, so that the beekeeping department is certainly in good hands, and if not prevented by the red tape and circumlocution, which is generally one of the limitations of agregations of variously constituted individuals, this organisation is going to raise honey.

Therefore on the whole I think that beekeeping by communities is a fact we must accept as one of the signs of a change which is so fast taking place in human methods, whereby social methods are displacing the individual.—Lower Richmond, Nov. 16th, 1893.

Confabulation among the Bee Hives.

By Mr. John Smith, Montrose Park Apiary, Mount Cotton, Brisbane, Queenslannd.

How to prevent swarming.—Punch's advice to people about to get married will fit this best for an answer—"DON'T".

A lady beekeeper writes in the September number of the *A.B.B.* that she thinks she is lucky *so far* for a new chum. Would it not be wise to gently hint that she had better go a little further and take all that *copper* wire out of the frames—unless she intends going in for man-slaughter? Our grandmothers used to put a few big old copper pennies in their pickles to *turn them green*. Many people were half poisoned in consequence but it took a good deal more in those days of cast iron stomachs to kill folks outright than it does now.

A writer in an English paper with a big handle to his name, after giving some interesting facts about bees, states that one of the queerest things about bees is that they *sometimes commit suicide by stinging themselves*—after poor feeding through the winter. Strange if true—that poverty unhinges the *intellect* of the bee—and drives it to despair—like master like bee.

The same writer makes a very serious charge against our little pets—He says "that during the last 15 or 20 years for some mysterious reasons, bees *have taken to eating fruit*, a crime of which they were innocent before—one of these strange and sudden changes of habit, the cause of which is sometimes apparent as in the case of the New Zealand parrots, and the Cape Baboons, both of which have become flesh eaters since the introduction of sheep—but more often obscure as with the bees—and with the cave-bats of Trinadad who now go in for fishing by daylight.

Are the Californian fruitgrowers right after all about the bees injuring fruit? Last season we had a great many grapes destroyed with the wet weather and the bees were all day long working on these that had burst. I have not noticed them eating sound fruit.

Will you just give friend Jones a slight poke with your editorial pen and tell him to flare up another half hour with that midnight oil—so as to send along for the benefit of readers of *A B B* in general the dates he has compiled as to the period when the various species of Eucalipti have flowered for the past eight years.

Some of us are nearly dying to know if they are going to blossom at all this year. If he can tell us anything more about them, such as "why they sometimes bloom *twice* in one season—and commit other vagaries," the information will be highly acceptable.

Mr W. Crawford, Wingello, writes Nov. 9th —I am glad to say my bees are doing well. I went into winter with 76 hives, which came through the spring without any loss or signs of foul brood, and rolling in plenty of honey from white clover. If it continues will keep the extractor running.

Mr W. M. Harris, of Armidale, says—The *A. B. B.* is improving steadily, and the last number is full of interesting communications. If you can keep up a stream of notes from bee-keepers who know what they are writing about, you will find your list of subscribers will steadily increase. American experience is sometimes valuable, but rarely so much as is the knowledge gained in the colonies.

The Rev. J. Ayling, Pittown, writes, Nov. 14 : —" Mr E. Tipper—My dear sir,—I was trying experiments in queen raising, so did not reply to questions last month. I have the advantage of the keen eyesight and steady hand of my nephew, and we have succeeded admirably, and perhaps equally well in the various methods in use for queen-raising. We got ten out of twelve cells accepted on Doolittle's method; about the same in grafting matured queen cups on the frames, and ditto by the Alley process. With artificial cups pushed into the comb we did well. One thing we learned, that is, the bees more readily accept the larvae after they have trimmed up the cups about twenty-four hours. But bees do nothing *invariably*. I have just procured a pair of watchmaker's pliers, and my next experiments will be on the Atchley plan, of which I will send you the results, perhaps in time for next A.B.B. —[Good work, and we shall be very glad to give our readers your future successes.—Ed.]

Mr. V. Anderson, Sandy Creek, Richmond River, N.S.W., writes :—Would you kindly inform me, 1st,—The cheapest and best pattern of an honey extractor to obtain. 2nd,—The best book on bees as adapted to Australia.

[Re Extractor, we would refer you to our advertising pages. As to the best honey book, the best Australian one we have seen, and also, can recommend, is I. Hopkins, (New Zealand) bee manual. We do not know the cost but are communicating with him, and will let you know immediately we hear from him.—Ed.

LOWER HUNTER.

A public meeting, convened by the Mayor, Dr. Meredith, at the request of a number of residents, was held in Raymond Terrace on Tuesday evening, 20th inst, for the purpose of forming a Beekeepers' Association. There was a fair attendance. Mr. Gale, lecturer on Beekeeping, &c., of Technical School, was present. Mr. W. S. Pender was asked to explain the rules, and working of H.R. B. K. A. Mr. J. Apfold was elected secretary pro tem The association was formed and rules of H. R. B. K. A. adopted with slight alterations. After the election of the officers th meeting adjourne d till Tuesday the 28th, at 8 p.m. We will give a list of the officers in our next.

QUESTIONS.

Mr A. A. Grindrod, Dartbrook Road, Auburn, asks :—

1.—Which is the best kind of hive, those having frames at right angles, or parallel to the entrance, giving the reason for the preference ?

3.—Are fertile workers ever found in a hive that is not queenless ? (*a*) If not, what is the reason of there being two and three eggs in a cell ? (*b*) Does a queen under any circumstances lay more than one egg in each cell ?

3.—Which is the best method of making honey vinegar ?

4.—Will some apiarist who uses brush made foundation kindly explain the process of making t ? Also, whether the bees take to it as readily as machine-made foundation ?

Mr T. M. Hewitt, Lismore, writes :—

5.—Have any of your readers who practice clipping experienced any trouble by queens being superseded ? Last year I lost some of my most valuable queens (and swarms also) from this cause. The bees, I suppose, got the idea that the queen is disabled or maimed, and at once take steps to replace her. To make matters worse, when the young queen takes her mating flight, the bees swarm out with her and are generally lost. Some of my readers will say the queens were old, swarming fever on, &c.: but in two cases the queens superseded were young ones just two months old, and without a blemish. Neither was the swarming fever on, although hives were strong.

REV. J. AYLING, Pittown.

2 (*a*)—I have seen two eggs in a cell ; don't know how they got there, but there was a laying queen in the hive.

5. I always clip valuable queens, and have found no inconvenience such as your correspondent speaks of.

I know the process of brush-foundation making, but perhaps am prejudiced in favour of machine-made.

T. BOLTON, Dunkeld, Victoria.

No. 1.—Those with frames at right angles are the most convenient for the beekeeper, as he has the entrance to right or left of him as he stands at side of hive. Where cases are emptied instead of single frames this is of more importance. As regards the bees' convenience, I am not able to say. In gin cases they are as often not at right angles as at right angles.

2.—I have no trouble with them till queenless. (A) Sometimes a queen with insufficient room; at others a queen worn out and producing drones only, will lay more than one egg in a worker cell, generally seen in spring in either case when seen at all. In the latter case if no queen cells are started, and if after destroying the old queen they refuse a new one, fertile workers it may be concluded were present, and at the same time as a queen. The practical advice bearing on this question is, if your queen is vigorous trouble from vigorous workers will be nil, and if you have fertile workers, unite if worth it to a vigorous colony; if not worth uniting they are useless.

3.—The old way of standing in a barrel is the one I adopt. By using acetic acid, tinct. cardamus and alcohol, it can be made in one month —so said a writer in Canadian B.J.

J. F. MUNDAY, Iona Apiary, Woodville,

1. I much prefer hives in which the frames are arranged parallel with the entrance. 1. Because they are operated upon from the back, out of the way of the bees. 2. Because I fancy the brood is confined to fewer frames, generally the frames at the back contain no brood, but are stored with honey, and the pollen is chiefly confined to the frame in front, and not in half a dozen frames at the end near the entrance.

2. I doubt it? The reason that I think queens sometimes lay more than one egg in a cell is because the colony is weak. The bees do not prepare cells fast enough for the requirements of the queen, and there are not enough bees to cover the combs where the queen would prefer to lay more eggs, so she lays sometimes several eggs in each of a number of cells.

5. I always clip my queens wings. I once thought that the bees did sometimes supersede such queens, but, for the last two or three years, I have thought that clipping the queens wings makes no difference. Her wings won't save her, and even if they did, I would still clip them. For some reason or another, bees appear to take a dislike to their queen, sometimes, or the queen is dissatisfied, and makes herself disagreeable, and the bees ball her till she dies, I have transfered such balled queens into another hive, and have them do well. I clip queens wings to save swarms, and it does.

JAS. MCFARLANE, LYNDHURST, VICTORIA.

1.—I have used frames both ways, and it does not make any perceptible difference.

2.—(*a*) Two or more eggs found in a cell, is only when such queen has a limited area of comb covered with bees, not sufficient to let her lay all the egg she wants. Place such a queen in full colony with plenty of empty combs, and she will only lay one in each cell.

N.B.—Cannot express an opinion of best hive, have used only Langstroth till now, and am starting an out apiary with Heddon.

W. NIVEN, Sweet Home Apiary, Eugowra.

1.—I prefer frames parallel to the entrance for the following reasons. 1st. Hives sit better on stands, 2nd. The roof having gable ends, less water falls on the entrance. 3rd In manipulating, it is easier to brush bees off the combs. I do not think the position of frames parallel or at right angles to entrance is so important that the success of an apiary depends upon it.

2.—I have never had any experience with fertile workers.

(*a*). Through some fault of the queen.

(*b*). I have known queens to lay irregularly, laying from one to three or four eggs in a cell. My assistant tells me he has seen as many as twenty eggs in a cell.

H. W. J. TAYLOR, Mountain Apiary, Miumi.

(1) I am working hives with frames both ways, but cannot see it makes much difference, if any.

(2) I do not think fertile workers were ever found in a hive that has a queen. Second. There are several reasons for queens laying more than one egg in a cell. First.—If there are not enough bees in the hive to take care of the eggs or to give warmth enough to hatch them, as the queen spreads them around. Her laying powers being fully developed, she will lay more than one egg in a cell. Second.—If in a large honey flow the bees close the queen up in too small a space, she is liable to lay more than one egg in a cell. Third.—Old or disabled queens will sometimes lay as many as four or five eggs in a cell.

3.—I have never made any honey vinegar, so cannot say.

4.—You must have your frames wired and your slab to fit your frame, soak the slab in water just warm, have your wax near boiling, now place your slab in the frame, and apply the wax with a paint brush, put the wax on as thin as possible. Second.—No. The bees will not take to it as readily as machine made, it is not to be compared with machine made foundation.

5.—I do not think clipping has caused the trouble. Sometimes bees get queer ideas in their little heads, that we cant account for, I have had trouble with them superseding their queens in the spring, but cannot account for it.

L. T. CHAMBERS, Melbourne.

1.—Parrallel. For ventilation, and in accordance with views given by others who have tested this point.

2.—No. Young vigorous queen, not enough workers. (*b*) Have seen queens lay 10 to 20 eggs in cells.

3.—Honey Vinegar.—Take thirty gallons of rainwater; heat it and put it into a barrel; add two quarts of whisky, three pounds of honey, five cents worth of citric acid, and a little mother of vinegar. Fasten up the barrel and put it in the cellar, and in a short time it will contain vinegar unsurpassed for purity and excellence of taste.—*Honey as Food and Medicine.*

4.—Have no knowledge.

5.—Have long since abandoned clipping queens, as leading to various unpleasant complications. To prevent bees swarming out with young queens supply frames of hatching brood occasionally.

N.Z.

1. In my opinion hives carrying frames at right angles to the entrance are best, other things being equal. The main reason being that they afford better facilities for ventilation.

2. I think not. (A and B), I have found young queens reared late in the Autumn that have missed impregnation, laying several eggs in a cell, and also prolific queens doing the same thing when confined for room to lay to their full capacity.

3. There may be quicker ways of making honey vinegar than Muth's, but I don't think there are any better, that is my experience. I append his recipe. :—

Chas. F. Muth's recipe.—A barrel is laid down and an inch hole is bored in the upper end of each head, near the upper stave. This admits of a good air passage over the body of the honey water. Tins with fine perforations nailed over these holes with rough side outward, exclude flies and skippers. Take about one pound of honey to one gallon of water, thoroughly mix up, and nail a perforated tin on the bung hole. We take thirty five to forty pounds of honey for a barrel containing forty to forty five gallons of water. The warmest place in the yard is the best for the barrel. If the sun shines on the barrel all day, it requires from the beginning of April (October N.Z) to the end of October (April N.Z) to make vinegar satisfactory for all purposes. If not sour enough by fall, it will be all right by midwinter or spring, if placed in a cellar or warm room. Mr. Muth says he has been making this honey vinegar for the last four years and finds a ready sale for it at a dollar for three gallons, that it eclipses the best wine vinegar for all purposes for which vinegar is used, and that he prefers, as a summer drink, a mixture of honey vinegar, water and honey or sugar to the best lemonade. (Note.—The American gallon is the old wine gallon, or two thirds of an imperial gallon. About one pound and a third of honey to every imperial gallon will therefore be the right proportion.)—*From the American Apieulturist May* 1887."

4. No experiegce with brush made foundation.

5. Nine or ten years ago, I practised clipping queens wings on a sufficiently large scale to give the matter a good test, but found it so much of a failure from various causes that I have not followed that course since.

T. BOLTON, Dunkeld, Victoria.

If beginning afresh I would use the divisible brood chamber hive known as "Heddon's," with some modifications of the original pattern of the inventor. It is about the most economical of time and labour required in its manipulation, and it goes far to redueing to practical command the question of how to make the fullest use of plant our money is invested in; how to keep, in other words, all your boxes full of working stock, obviating the necessity of having expensive woodwork lying idle, either in anticipation of emergencies, with an eye to which it may have been purchased, or because through a lack in the construction of this same woodwork it is under certain circumstances compulsorily held in idleness, and contributing nothing to the general returns of the apiary whilst so held—in fact invested capital for the time being idle, and at a time when could it be used it would be of considerable use in the furtherance of the general prosperity of the colonies concerned. For instance, when the owner of L hives happens to have any weak colonies, or should he purposely contract his brood nest for any reason, such say as to force bees into supers, there will be from three to seven idle frames and box, lid and bottom wood in proportion, for the time being earning nothing. Now if he could take this idle portion away and get it into the heart of some other colony, glad through pressure for room to get it, and ready at once to make use of it, he would have done just what one commonly does with the Heddon hive; and he has done it without calling into use further woodwork, but by simply using to better advantage and fuller extent that already in the apiary; but not actually, in the case of an L hive, contributing to any good result at the time. Nor can it be made to do so. But the owner of Heddon hives has his brood compartment divided in the middle horizontally into two shallow cases, and in the suppositious cases above he can take one of these cases away for immediate and profitable use elsewhere, enlarging the brood chamber of some other colony to three cases for instance, getting this *otherwise idle* plant filled with brood, when it can be used in many ways to great (and *costless*) advantage, an advantage which cannot be obtained by any hive not thus divisible and sectional, as a little thinking will show. This feature is the lack, referred to at the beginning of this paper, which I say compulsorily holds in idleness a portion of the beekeepers' woodwork, in other words, *his capital;* and this is one direction in which this hive enables us to get all the return possible out of our outlay, and to keep the greatest number of bees in the fewest number of hives. [Owing to the length of this communication we are sorry to have to hold a portion of it over.]

THE SPECIAL SUBJECT.

HIVES.

H. W. J. TAYLOR, Mountain Apiary Minmi.

As I am using one kind of hive, I have not had experience with any other, so will leave this subject for those who have had experience with different kinds of hives. I do not consider any one can give a fair answer ts this subject without practical experience.

N.Z.

I should undoubtedly use the ten framed Langstroth hive ;-for, in the first place I believe in a medium shallow frame as being the best, all things considered ; and the proportious of its frames allow of them either being equally well adapted to raising either comb honey in sections or extracted honey. There are I think many other advantages, that would, however, require a special article to explain, but the fact tha there are so many more of them in use than those of other kinds is proof that the majority of bee-keepers are of the same opinions.

J. F. MUNDAY, Iona Apiary, Woodville.

I still much prefer the hive I make and use to any other. It certainly suits the bees well and it posseses more useful features for the bee-keeper than any other, as well as needing less requisites. It is simply and cheaply made. The frames are well suited for Nuclei (an important matter), the broad top bar effectually prevents brace and burr combs, and judging from the rapid way they are being adopted, I believe they will soon be extensively used. I have nothing to gai thus speaking in their favor. Were I to begin bee-keeping again, I would certainly use the "Munday" hive, and I can honestly recommend others to do the same.

GEORGE JAMES, Gordon.

I have always used the Gallup frame and hive, and prefer it to any other. But it may be like all the rest of apiarists—it's what one has got used to. Certainly there are advantages claimed with every hive in existence, but if I had my choice of selling out and starting again I should go for a square frame same as the Gallup, for many reasons. But the whole matter is this—It's the bees we want, not the hives. Lor bless your heart, if you had a yard full of hives and no bees, what would be the result! Still, the beginner wants to know, and I think he cannot do better than take one of the standard hives, whichever suits his particular fancy. Take a visit around some of the apiaries and get practical knowledge. I don't like the Langstroth anyhow.

Rev. J. AYLING, Pittown.

I have used Root's Simplicity, his 8-frame davetailed, and Berlepch, and wish for no better than the first-named. During the past winter we made up nearly a score of kerosene boxes with supers, flat tops, and painted well. They take flat tops, and answer admirably. Give me such as these and the Root-Hoffman frame, and I am content.

E. BAGOT, Broadwater, Richmond River.

If I was starting again I do not think I could better the hive I at present use, and I will try my best to give as condensed a description as possible. The body is made of 7-8 inch stuff with the sides let into grooves in the end piece leaving projectiug ends one inch long. This makes a very tight case, and it cannot give with the weather. Frames are shallower and shorter than the Langstroth, viz., 13 and 5-16ths x 7¾, made out of 1 1-16th x ½in. laths. They are simply butt-nailed, and to the sides for half their depth are glued ; ⅜ Λ shaped spacing strips. The hive is made to contain 24 of these (this includes the super). Top and bottom boards are heavily cleated, screwed on preferred. This hive has stood the Richmond climate very well, and has several other points which ought to be worth a passing glance. The frames do not require wiring, they don't sag, a handy size for nuclei and queen rearing, and most important of all a good hive for storing honey in, either extracted or comb, and if made of well seasoned and durable timber, it will last a very long while.

W. NIVEN, SWEET HOME APIARY, EUGOWRA.

If I were making a fresh start in bee-keeping I would continue to use the kind of hive I have in use at the present time, that is the Langstroth Simplicity hive, made as plainly as possible to m eet requirements. The material used is pine, half inch thick for sides, and one inch for ends. The top and bottom storeys being the same size, with eight frames in the bottom and seven fra es in the top storey. The bottom boord is loose, and the roof has gable ends. I have tried larger hives but the above is the one I obtain best results with. I am of opinion that from any frame hive good results can be obtained, and that the size of hive that is suitable one district might not suit in another. I think it would be well for bee-keepers in different districts to try different sizes of hives and they would see which size of hive met their requirements best.

One important item in working an apiary for profit, is to make your hives with as little expense as possible, and if they can protect your bees from heat, cold, and robbing, it is all you require.

L. T. CHAMBERS, Melbourne.

My choice would be a frame 18 x 7, or 12 x 12 for comb or extracting.

ALBERT J. BROWN, Scone.

The Munday Hive. As I think it is a really good one, not only for beginners, but for all practical purposes. The wide top bars are a great advantage to keep bees warm in winter and cool in summer. No quilt is required, and with proper handling no more bees will be killed beiween the frames than with the Root Hoffman. The frames being across the entrance also induces the bees to store their honey and pollen (in brood chamber I mean) in separate frames, whereas in the Langstroth and other hives having the frames end on to the entrance, honey, pollen, and brood is placed in each and almost every frame. Thus the Munday hive is a great advantage to beginners and those in a small way. As when the surplus honey is stored, as it mostly is in the front and back frames by itself, it can be easily removed without interfering with the brood. The nuclei of this size is also more compact than of other longer hives.

ELLIOT J. RIEN, Richmond.

I should go in for the 8-frame hive, with flat cover, Heddon bottom board, and Root-Hoffman frames. I consider this one of the best hives in the market. I find eight frames quite sufficient in the brood chamber, and by tiering up I have the honey placed in the supers where I want it; and being directly over the brood nest it is capped sooner than that at the sides of the brood nest in the 10-frame hive. And I am more likely to have the whole eight frames capped sooner, whereas in the ten frames I would have a lot of unsealed honey, because the heat from the swarm ascending evaporates the honey quicker. For comb honey the 8-frame hive is just right. The hive also is neat and handy, and is not too heavy to lift about when full of honey or brood, while if made of well-seasoned wood we have no shelter for the wax-moth, &c. With the Root-Hoffman frames we have no burr-comb, and the advantages of a closed end frame and a hanging frame combined with little space for propolis. One advantage which should not be overlooked is its cheapness, and the frame being almost the standard of New South Wales, and proved itself adapted to our climate.

A. SHALLARD, Leichhardt.

No 1.—Those having frames at right angles undoubtedly. The advantage is that the bees store all the pollen in the first frames, the honey in the back ones. In extracting from the brood chamber this is a great advantage, as it is not necessary to extract from frames containing brood.

No 2.—(*a*) Not to my knowledge. (*b* & *c*) The queen being very prolific and short of empty cells will sometimes lay more than one egg in a cell.

No 3.—Method too long to give here, consult a bee book.

4.—Never used brush made foundation, do not think it much good as most persons who previously used it are giving it up and getting foundation mills.

No. 5.—Queens are not any more liable to be superseded when clipped than otherwise. The queens were probably lost through being lost when the swarm issued. The swarm returned to the hive and the queen did not. Had the queen not been clipped the whole swarm would have absconded, first swarm with virgin queens always settle within a few yards of the hive. I think the whole trouble was inattention of the apiarist.

W. CRAWFORD, Wingello.

If I were making a new beginning in bee-keeping I would use hives made of 7-8th in. timber, made something after the style of Root's dovetailed hives. Instead of the dove-tailed corners make the corners with a double joint and a moveable bottom. Body of hive outside measurement 16 in. by 20¼ in.; 9½ in. deep; no bevel or rabbit on edges, as the hives fit square on one another, which is an advantage in opening hives should the frames be stuck between the supers—a knife can easily be run in and part the lot—no bevelled edges to be in the way or split off. Flat cover, all in one board, with a cleat nailed on each end, to come half-inch down the end of hive when it is just laid flat on. Rabbit the ends ⅜ in. deep for the frames to rest on. This leaves a bee space above the frames so that bees can pass from one frame to another handy. No quilts are required, which I consider a nuisance. The frames hang flush with the bottom of hive. The entrance is formed by nailing three cleats ¼in. thick on bottom board, one on each side and one on the end, leaving the full width of one end for entrance. The body is set on these three cleats. Entrance can be reduced by blocks. Why I recommend this hive is, because it is easily made, easy to handle, and will not have the edges knocked off or get out of order. Will take the Langstrath frames. Use the thick topped bars, 1 1-8 in. x 7-8 in., which I find is the best.

JOHN SMITH, Mount Cotton, near Brisbane, Queensland.

Would have size *inside* to fit Langstroth frames, because they are most generally in use. Made to take ten frames, because I find it most convenient. Entrance entire width of front, made by having loose strips dowelled on to bottom board, which also give bee space under frames. Bee space also on top of frames, so that top and bottom hives are interchangeable. Brood frames protected from *direct draught*. The hive itself

should be *all hollow*—that is, walls. bottom board, and cover, with self-regulating ventilator in cover. I make them entirely of 3-8 in. stuff, with 3-8 space between inner and outer wall, thus total thickness is 1 1-8 inches. Inside walls would be better papered on the hollow side. In summer, to ensure perfect ventilation and comfort I would have a wire screen or perforated zinc bottom board in place of the hollow one. I have all kinds and thickness of hives, from 3-8ths to 1½ inches, but Langstrath frames fit all. Top bar 19 inches, outside measure of frames 17 5-8ths x 8 7-8ths. I find by experience that the thickest and strongest are the most satisfactory in every way. I am not, however, satisfied with any kind of hive I have yet seen or read about, and but for its *unmanipulative* qualities the old straw skep is far ahead of everything yet before the public. I have hives that are morticed, dovetailed, halved, mitred, and simply nailed, but I consider the best kind of hive has yet to be invented in order to fill a "long felt want" amongst beekeepers, as most of them feel that the best kind of hive they have leaves much to be desired. Hence they are all continually on the *qui vive* for a new hive.

G. COLBOURNE, JUN., Cave Creek.

My ideal hive is one having a comb capacity of of 2640 square inches, all in one hive, not two or more stories high. I find in practice that there is a great gain in time by having the frames in one long row. There is no burr or brace combs, no stickey honey-board, and the crowning point of all is, you can have the brood nest of the exact size for your queen's requirements, no matter if she is ever so prolific or the reverse. And by proper manipulation you can have every drop of surplus houey in the surplus department, which is separated from the brood nest by a perforated zinc division board. I have come to the above conclusion after testing all the methods that I could think or read about, and I may here state that I have been in the bee business for ten years.

The best frame in my opinion, is the Gallup, 11¼ x 11¼ inches. My reason for thinking it the best are based upon the fact that it is the most compact frame we have. Second, it is the best adapted to my particular method of working; 3rd, it is a standard size; 4th, it is recommended by such mighty men as Doolittle, Cook, Freeborn, and many others too numerous to mention. 5th, it hangs in the extractor the same as it does in the hive, which I consider a great advantage over the Langstrath. My first hives were Langstroth size. I never liked them, but at first did not know of any other, so I thought they must be right. Then when I got the "A B C," and took in *Gleanings*, and saw how Mr Root praised them, I tried to think them perfection, but all in vain. So I tried one a little shorter, but preserved the same depth. That was a great improvement, still it was too long for its depth. I then made a crosswise frame; that was better again, but it did not hold comb enough, so I decided that would not do. I then made my frames the Langstroth size again, but I disliked them more than ever. At this time fixed distances were discussed in *Gleanings*, so I tried a frame 19 x 9 in., closed end, to stand in a loose box. I put them on one side as they were too long. I next tried the Quinby standing frame. That was too large for extracting in hot weather, so I dropped that. I then adopted the Gallup. I had now found the right frame and it has come to stay. I think it perfection, and I think, after all the frames I have tried I ought to be able to speak with a little authority. *I now want it to go on record that the Gallup Hive should be the standard frame of Australia.* It is very easy to convert a Simplicity hive to a Gallup, especially an eight-frame hive. Simply add a 2½ inch strip to the upper edges rabited at the sides instead of the ends. The top bars of the S. frame can be cut to the length of the G. frame. Leave the comb in except an inch at each end: nail on two end pieces the G. length, and a bottom bar 11¼ in long. You then have your S. frame turned into a G. frame and nearly filled with comb, the only loss being the ends and a short piece of top and bottom bar of the S. frame, an item not worth mentioning. The sooner the beekeepers of Australia adopt the Gallup frame the better for themselves. By so doing we would be setting a good example to our cousins the Yankees. Before I close I would like to draw your attention that the most successful beekeepers of the U. S. A. use a frame much deeper than the L. I will name a few, and give the size of frame they use and number of colonies they keep:—J. C. Hetherington, 10 x 15 in., 3000; P. H. Elwood, 10 x 15 in., 1300; H. P. Boardman, 12¾ x 10¾ in., 400—and many others. In conclusion, I will give Doolittle's answer to Question No. 151, *Gleanings*, 1890, page 25. The question is—(*a*) What size of brood frame are you using? (*b*) For your purpose, and in your locality, do you think you could produce as large or larger crops of honey with any other size of frame?—Mr Doolittle says in reply—"(*a*) The Gallup. (*b*) No. I think the Gallup the best size of frame in the world, all things considered. If I did not I would change to the one I considered better."

Establishing an English Market

FOR HONEY.

Read by L. T. Chamders, Secretary of the Victorian Beekeepers' Association', at the late Conference, in Melbourne.

Mr. J. Bartram, speaking of the butter trade prospect, said, a short time since:—"Englishmen set a high value on trade that is regular and runs in regular channels. The advent of

the Australian has to some extent disarranged trade order, and that feeling takes a good deal of fighting down. We can conquer it only by a willingness to take moderate prices at which he can sell; but offhand suggestions as to our doing something to overwhelm tradition, or the English merchant doing something extraordinary to meet our requirements, are a pure waste of time and effort." This is only another way of saying that by persistent effort a market is to be won. The day has gone past for all slipshod methods, and probably for large profits also.

Now we have in these colonies as good and regular supply of honey as in most parts of the world—probably better. America, from whence we draw so many inspirations, produces 50,000 tons, estimated to be worth annually £2,000,000 Of the States, California produces most, and after supplying home markets, exports to the annual value of £20,000.

Only an occasional year gives heavy crops in California. We are more regular and even in these colonies, and if calculated upon the basis of five or seven years we should come out ahead.

Of the quality of the honey exported from California I am not in a position to judge. Adulteration has been so general that it would be difficult to say that those samples which have reached us in past years have been pure.

I have frequently obtained the opinion of those who are familiar with the honey of America and England as to the flavour and value of our colonial honey, and the opinion has always been expressed that the Australian can take its place beside any other in their markets. Personally I am strongly of opinion, that our honey, when properly graded, would be hard to beat in any market.

Assuming however, for the present we possess a source of supply—and of excellent quality—which may be gathered in much larger quantities than has been done in the past, how may we proceed to open up trade relations with England or other places at a price which will pay us for our labour? If we can secure an unlimited market, our methods of gathering to supply such market will of course be cheapened all along the line.

We have not yet done a great deal in the matter of honey production; but there is a possibility of doing a great deal if we only get about it the right way, and the cost of production much lessened.

We may probably be told that past efforts which have been tried towards opening trade relations in England have proved failures. Within the knowledge of some of us several shipments have been made, and the result disappointing. When we consider the condition under which such efforts have been made, is it any wonder. In the first place, let me ask, does anyone not being a beekeeper possess the requisite knowledge necessary to handle and grade honey properly? Secondly, does the bulk of honey as it finds its way into the hands of the commission agent properly represent, or, in fact, at all represent the product of the expert? We know it does not, but because the price of honey was low, the quality being not only low, but very various, and mostly if not all the product of box hives. Opportunity was offered to make shipments, with the result that the market refused to take it, and no wonder when the style of package and condition in which it arrived all bespoke disregard for the taste of the prospective purchaser. Take a dirty, clumsily soldered, and possibly leaky kerosene tin, fill it with granulated honey of a nondescript appearance, and offer it in any market, and it is little wonder that it is passed by? But given even the same honey in a neat handy package in bright liquid form, and its very inviting appearance will sell it. Where would our market for butter be if steps had not been taken to ensure good clean packages, containing an even sample of butter in the best possible condition. And notwithstanding what has already been accomplished by the dairying interest, it is recognised that we are as yet only on the bottom rungs of the ladder.

With reference to our prospects of a foreign market we may ask and answer the following questions:—

Is there a large source of honey going to waste, annually? Yes, that is within the knowledge of all of us.

Would it be possible to gather a much larger proportion of this honey than is at present done? Yes, given a market we and others could do much more than at present.

How does the quality of our Australian honeys compare with honey of other parts? Very favourably, good in body, flavour and appearance, will sell on its merits anywhere when in proper and saleable condition.

Is our crop sufficiently large to enable us to compete with other producers at a payable price? We believe it to be so, judging from what has been done so far as against the published reports from other honey producing parts.

With these conditions present it must be apparent that the only other condition necessary is the adoption of proper means and appliances by which to put our goods before the proposed market. Of the result we need not fear so long as we do our best to offer the best we have, put up in an attractive form.

We need not be surprised to find an amount of prejudice exhibited regarding Australian honey. Our good name has been filched from us in several ways. As pointed out shipments have been sent forward in poor condition, which have not given us credit, but rather the reverse. The name of "Australian Eucalyptus Honey" has been used to foist a so-called medicine honey on the British Public, claiming the properties of the extract of eucalyptus. Under this name all manner of rubbish has been sold; its recommendation being the now well known flavour of

Eucalyptus oil. Analysis shows that no trace of the essential oil of Eucalyptus is to be found in the honey product of such trees any more than astringency of the acacia is to be found in the honey yielded by trees of that species.

It is moreover a difficult matter to knock it out of the head of the average Briton that we here live in a state of semi-barbarism, consequently our products are not equal in cleanliness to those of more refined and older nations. The common belief is that our honey, being taken from the hollow trunks and limbs of trees, thereby obtains an unpleasant taste and appearance.

We have these and other prejudices to meet and overcome, and it appears to me that the only method by which this may be done is by a steady and sustained effort in which we ourselves take the burden. We shall only be taking our share of the labour and travail which falls to the part of all producers in this our colony. Keen competition marks the markets of the day —unrighteous practices, fraud, and deceit, very often in place of honest endeavour—but these things need not daunt the man who has geniune goods to sell, and who is willing to abide the trial of time and the verdict of popular opinion, which sooner or later will be given.

Towards the accomplishment of the object in view, that of finding an outlet for our surplus honey, I should propose the formation of a company, the members of which would subscribe during the coming season 500 or 1000 tons of honey, such honey to be classified, and if necessary blended to a level sample, carefully packed and placed in the hands of a trustworthy firm or firms to be offered upon the English market as a sample of our Victorian honey.

As proposed, we ask to be guaranteed against loss by the Government. The proceeds of sale to be divided *pro rata* to the subscribers after payment of all charges, and the result made known to all concerned. This appears to be a rational way by which to test the market and our prospects in it. California, Cuba, Jamaica, Africa, Southern Europe, all find a market for their honey in England, and surely we may add to their number. What others can do successfully, why not we? Do we find that these our colonies are behind other parts of the globe in productiveness? Can we not produce as good wool, meat, corn, butter, fruit, and a host of other things equal if not superior to other countries? Let us think well of ourselves and our own abilities and resources. We may readily see by comparison that these are at least equal to those possessed by others in other parts of the globe.

Mr Elliot J. Rien, Apiarist, Hawkesbury Agricultural College, Richmond, writes—I am glad to see the improvement in the A.B.B., and hope that it may go on improving.

AUSTRALIAN HONEY IN ENGLAND.

"Let's taw square."—YORKSHIREMAN.

By John Smith, Montrose Park Apiary, Mount Cotton, Brisbane, Q.

It is somewhat difficult to condense this subject into small space, but at the risk of making this article somewhat jerky I will try to do so.

Item first.—The English experts, honey merchants, editors of bee journals and others, all declare that Australian honey does not suit the English taste—that it is disagreeable—has a twang with it—and is quite unfit for an article of diet. Consequently they won't have anything to do with it themselves nor give their customers a chance to express an opinion on the subject.

Item Second.—Australian beekeepers contend that their honey is very good, and are trying to "move heaven and earth," as the saying goes, to make the much-enduring "British public" swallow their honey, or at any rate to give them the opportunity of doing so. And so a bonus of a penny a pound is to be allowed on certain quantities of honey exported to England from Victoria, and this will be branded by the Government as genuine, &c. And it is suggested that persons are to be licensed by Australian Governments, under heavy bond to sell only pure Australian honey. There would be considerable difficulty in the working of a scheme of this kind. It does not seem very feasible or practicable at present.

Item Third.—It appears to be a well-established fact—That honey is adulterated in all the Australian colonies, in Europe, especially in Germany and Switzerland, and also in America. And this bogus honey is also manufactured wholesale in some countries.

Item Fourth.—That honey may be genuine, but if got from trees or box hives, and strained in the usual disgusting manner, is not at all fit for human food.

Item fifth,—That genuine honey from some districts HAS a very disagreeable flavour.

Probably it is intended that "box-hive honey," "garden honey," "bush honey," and peculiar district honey, shall be kept in the colonies for home consumption, and only the finest qualities of honey will be shipped to England—thus illustrating the old proverb, that "the cobbler goes worst shod."

Item Sixth.—That honey is one of the very few articles of food that can still be largely adulterated and imported into England with perfect impunity—our American cousins being probably the biggest sinners in this line of business.

Item Seventh.—That it is a somewhat quixotic notion to ship pure Australian honey to England to compete against glucose and sugar syrup. Vide extract from "A B C" re sugar honey—"There is not one in twenty but will prefer it to

clear honey, and not one in ten can detect it by the taste." Australian honey cannot compete against that kind of honey, however branded.

What can we do? Stand idly by with our hands in our pockets—or how tackle the difficulty? Is there a remedy? A doctor must know what is the matter with his patient before he tries to cure him. It would do a man very little good to cut off his legs if he were suffering from a cancer in the stomach.

The trouble then, or main hindrance of Australian honey into England, is this cancer "Adulteration." And until some such stringent Act as the Oleomargine Act is passed in England, all efforts to send Australian honey there in quantity must prove unremunerative and abortive. Pure extracted honey can scarcely be obtained now for love or money in England, and before the above Act was passed pure butter had become an almost extinct product.

Government branding of pure honey is all very well as far as it goes, but in my humble opinion, a better plan to start with would be for all the Australian Colonies to instruct their Agents-general in London to make a combined representation in the proper official quarters, with the idea of getting an act passed speedily on the lines of the Margarine Act, to prevent importation and sale of adulterated honey, unless branded with name and percentage of the adulterant.

Before this request can be made with any show of decency we must go with clean hands, and be able to say, We have stopped the adulteration of honey in the colonies—such stuff can only now be sold as a mixture under heavy penalties. We must "taw square" ourselves before we can ask the old country folks to knuckle down to us.

THE EUCALYPTUS FLAVOR.

The Editor Australian Bee Bulletin.

Sir,—In September number, page 108, Mr John Smith writes :—"In addition to the flavor the active principle of the eucalyptus permeates the honey," and based upon that statement claims valuable properties for the eucalptus honey. This alas, I fear, is not borne out by fact so far as I know it. When this theory was advanced by a supposed French chemist some years since, and published to the world, I secured an English analysis of the honey from box-tree, and also red gum, which disclosed no trace of the essential oil of the tree, nor in fact anything not found in any other honey.

A little later a representative of a Chicago firm of manufacturing chemists called to see me on the subject, and to the order of that firm I procured over 150lbs of samples of extracted honey from known and assured sources of eucalyptus. This was duly analysed, and copy of analysis forwarded to me. This analysis also failed to discover anything different in the constituents of the honey from that of any other honey except variation of flavour. I am sorry that I cannot at present time put my hand upon that analysis. —Since that time I have from time to time inquired into the matter, and find that the first statement was not borne out by facts—but was probably "hatched" in the fertile brain of some adventurous person who wished to get up a trade.

Will our friend Mr. Smith kindly inform us of his authority for his statement, Yours faithfully.

L. T. CHAMBERS.
Melbourne.

APIS TRIGONA.

J. Wilson Green, Logan River, Gramzow, writes—Under the above heading I see attention is being directed towards this interesting though neglected insect, but probably it does not do so well in the southern colonies as in Queensland, where a pickle-bottle of honey would be but a small average to obtain from them. I must also say, that all the nests I have seen were as exact "in their way" as any other bees, as from close observation they are all circular, and each comb or tier of cells are a bee space apart and joined at intervals by brace-studs. This brood-nest seems to be enlarged as required at the expense of the honey and pollen cells or cups, adding a circle of cells to each comb, still preserving the circular form, the end ones consisting of about six or seven cells, whilst the centre will be six or seven inches in diameter ; at the same time the honey and pollen cells are extended. I believe the honey cells are constructed of propolis of a certain kind and mixed in with honey, as I have failed to get a trace of wax from a bucketfull of cells, &c. However, if the honey can be disposed of at a remunerative figure I believe it would well pay to keep them, as the bush is swarming with their nests, and they would require little or no attention, besides their value for fertilising blossoms such as grapes, mango, and other small blossoms, which the other bees pass if any larger are in bloom. One thing remains to be found out, viz., the cause of the difference of taste, &c., "though probably obtained from the same source," to our commercial article. But I consider that, were proper attention directed to it, this acid-like taste would be an advantage, as it is a good thing for colds, but creates a terrible thirst if much is taken.

As regards their biting or crawling, I would far rather cut out a black or hybrid bees' nest than theirs, as they crawl all over one, up sleeves, through hair, &c., and a nice job to get rid of them.

MORE ABOUT THE NATIVE BEE.

Mr. C. Cook, Grassmere Honey Farm, Lindfield, writes :—I am not much of a writer, but I beg you will give me a little space for a little

information about our native bee, as well as a few corrections. The native bee, Mr. Grant says, is smaller than the common house fly. The common house fly I think would make about three of them, for the native bee is only 3-16 of an inch long, and the queen Mr. Grant says is 5-8 of an inch long. I think if Mr. Grant measured her he would find her about 5-16 inch long. The supposed queen that I saw several times had wings. I am not certain however, that it is the queen, but it is a great deal larger than the other bees, and I cannot see any drones. All the other bees seem alike to me and their brood combs lie horizontally one above the other, and they do build comb not of the same material as the other bees. It is shaped something like the other bees like as if the comb of the other bee was laid flat one top of the other, and each individual cell is sealed at a certain age. The honey is sweet, with a tart taste, and I like it better than the ordinary bee honey. It is stored in cups about twice as large as queen cells and it will granulate. It is a mistake to say the amount of honey from one hive is a tablespoonfull. I have often seen a bucketful out of one hive. I cannot give you much information about queen rearing, hatching and swarming. The native bee, the way I believe they swarm is, to send scouts out in the woods to find a home, and then I believe a few at a time go to it. They are stingless, but they bite just like a small ant, and they crawl in eyes, ears, nose and you must comb your hair after you have done robbing them. Our native bee, instead of building their comb down like the other bees, begin at the bottom and build up, and it is beautiful to look at. It is like a steeple of a church, one mass of net work, before they finish into cups. If you fall a nest in the bush and get one half with the queen and take home and put them in a hive, the remaining bees will come the next day, if it is a mile away. I enclose a small piece of brood comb for you to have a look at.

[Thanks for sample. ED.]

LISMORE.

Mr. Hewitt, Lismore Apiary, writes under date October 21—The season we are experiencing on this part of the Richmond is the best for honey we have had for years. The clover yielded a good supply, which came in early, and the gums flowered well. These two supplies have not yet gone off, but the principal source now is the scrub. Swarms though are not numerous, and judging from this I should say the bees in the bush perished in large numbers during the winter. By the way, have any of your readers noticed the seasons in their localities to be similar to those in America? When a bad year is reported from America we get ditto here, and a good year follows a good year in the States. The past two years the honey seasons on the Richmond I have noticed are the same as those experienced in America. The season just closed in America, to judge from reports in *Gleanings*, was the best they have had for years, and called by some the clover year. It is the same with us. This year the clover yielded more and bloomed better than it has done the past five years. When we have a good year difficulty is experieneed in quitting honey, and I would suggest to fellow beekeepers on the Richmond the desirability of an association for mutual protection. Prices might then be fixed, instead of one "cutting under another." For instance, one beekeeper here is bottling and selling at 6s per dozen (2lb bottles) delivered. This is 3d per lb for honey, without cost of bottles, corks, labels, &c., &c., whilst hitherto we had no difficulty in getting 4d wholesale. Of course we cannot sell at this price now.

I think the "Special subject" idea a good one, for "in the multitude of councillors," &c., &c. "Somnambulist," in *Progressive Beekeeper*, gives a hint to those replying to queries which some might take to heart here. He says, "Don't all speak at once, assuring us you 'don't know,' but somebody who does know please tell."

On Saturday, in a hive that is doing the superseding process I found a queen cell just at the capping stage with two fine larvae in it. Can one or other of the "masters" tell us what would happen if it were left to the bees? I did not leave it as the strain was not to my fancy; besides it was at an out apiary. It was a beautiful long cell, but not extraordinarily large.

MACLEAN, CLARENCE R.

Mr Skinner writes:—I find brown paper, the coarser the better, such as nail paper, by far the best fuel for smokers, because it gives plenty of smoke without heat. The Bingham direct blast is the best smoker, because it will burn as long as any fuel is left in the fire box. Re sowing seed for honey, we tried some buckwheat, New Japanese, and it was a perfect success—bees on it as thick as could be, and besides it was a profitable crop, or rather crops, for we had two last summer, one after the other, and mean to sow a lot more this coming season, as it is a splendid poultry feed.

It has been a very poor honey season in this district this year, I have not had half the honey that I had last. I might say, that I keep bees for profit, not pastime; and having other business to attend to, I have my hives constructed so as to prevent swarming, and in the two years that I have been beekeeping I have not had one of them swarm. Hence I make the assertion it is not more natural for them to swarm than it is not to do so. I have black bees and Italians, not pure, though some of them are three banded. I have not finished with blacks, though one writer said he ex-

pected that they would soon be given up on account of moths, Now sir, I make another assertion, which is this—That one half of the difficulty in connection with the bee moth is owing to badly made hives. I have had hives with black bees not opened for three months and have never yet received any damage from moths, while some of my neighbours—I do not say where they got their hives from—have had their hives literally stuffed with moths in a very short time.

I do not believe in sheds for bee hives. I prefer to have each hive with its own legs and roof, as they are so much more convenient to handle, as you can get round them, and also keep them at some distance apart to prevent robbing, &c.

Speaking generally, the Clarence is not a first-class honey district. Last year from nineteen hives I obtained over 1800lbs of honey. From one hive, to which I devoted especial care, I obtained 350lbs.

With best practicable wishes for the A.B.B., believe me to be a fellow *worker* in the hive.

Mr. A. E. Kendall, Bibbenluke, writes—October 22nd.—This district is draped in blossoms, clover and peppermint tree especially noticeable. Every promise of a bountiful honey flow this season. Caught first swarm for the season to-day (black). Heavy frost last night, but weather during the days delightful. All sorts of good wishes for the success of the *A. B. Bulletin.*

Mr G. Hardy, Lambton Heights, writes :—I have a lot of Langstroth frames with comb in them all, and I have some trouble to keep the grubs or worms out. Could you tell me something to do with them at once, as they are being spoilt by the grubs. These frames are not in the hives. I have about 150 spare combs, and my bees have not pulled up sufficiently to double deck them all.—[If they are very bad the better way would be to melt them down ; if otherwise well fumigate them with sulphur, and repeat that at least once a week for several weeks to destroy all young grubs coming on.—Ed.]

Mr. Alfred J. Brown, Scone, writes.—The bees in this locality (Scone district) are with a very few exceptions very backward, and I think I am correct in saying that mine are storing more honey at present than all the others put together, although the number of the latter exceed mine by several hives. The reasons I am certain are that my bees are Italians and in bar frame hives, the others are blacks and mostly in box hives. The blacks wintered very badly, a great many dying right out, while mine, without feeding, came through with ease and got an early start with fairly strong colonies. This gave them great advantage which they still retain. One colony gave me, for eighteen days labour 45lbs. of honey. This extracted and am now watching their next flow. But this last week the weather is very unfavourable.

TASMANIAN BEE-KEEPERS.

(*From the Launceston Examiner.*)

Apiculture has always been popular in the northern portion of the colony of Tasmania, and in order to assist those interested in the industry some of the prominent keepers fell in with the suggestion made by Mr. Magnus M. Smith that an effort should be made to form an association. It was thought that by this means the bee-keepers would be drawn together and discussions take place which would tend to improve the culture. Mr. Smith therefore convened a meeting, which was held in the Mechanics' Institute on the evening of October 26th, when there was a representative gathering, including a lady from Perth and Dr. Mason, of Longford.

Mr. Henry Button was voted to the chair, and invited discussion on the question of the formation of an association.

Mr. Smith stated that he had sent out circulars to a number of persons inviting them to attend the meeting, which was also advertised in the papers. He thanked the press for the notices inserted drawing attention to the meeting, and referred also to the information given in articles as to apiculture, which was much appreciated by the keepers. He thought that the formation of a Beekeepers' Association would supply them with a means for the further distribution of information, and he hoped that they would decide to form one.

Dr. Mason, of Longford, favoured the proposal, and spoke of the large number of flowers in Tasmania from which bees extracted honey. He pointed out that the Customs in Tasmania charged duty on bees on the ground that they were not animals, and one of the objects of an association would be to draw the attention of the Government to this and other matters, with a view of affording bee culturists more encouragement.

Messrs John McKenzie, J. Haslem, and Thos. Newman also spoke on the question of culture, the last named gentleman advising extreme care on the part of the young beekeepers. He instanced a case where one amateur had lost rather heavily on account of starting on too large a scale. Mr. Newman also intimated that low ground like the marshy land of Invermay was not good for bee-keeping. Mr. Smith and the chairman also gave some information about the keeping of bees and the most suitable flora for food.

After some further discussion, Mr. Smith pointed out that amongst the many objects of the association would be the holding of meetings for the discussion of matters connected with apiculture, and seeing to it that reports were properly and fully published. The reports of the proceedings at these meeting would give information to persons living in the country districts

who take an interest in bee-keeping. Lectures could also be delivered and information generally disseminated, while general cookery, and properly made confectionery enticingly got up made of honey instead of sugar could be exhibited. Arrangements could possibly be made with some of the horticultural societies for the exhibition of products from the apiary at their shows, and some members could be present to explain fully the merits of the different products, and thus the public would be educated to use honey more as an article of daily consumption, and then we would prepare a market for our own produce. He read suggested rules for the guidance of the association.

Mr Magnus M. Smith also referred to the glucose fiend, and exhorted all to be on the watch and ready to fight should it make its appearance.

Mr John McKenzie followed, by explaining how unprincipled persons in America and elsewhere got it up and placed it on the market.

A resolution, proposed by Mr. McKenzie and seconded by Dr Mason, was then unanimously carried, to the effect that the Northern Tasmanian Bee-keepers' Association be formed.

The following officers were elected :— President, Mr. W. H. D. Archer, Warden of Longford; vice presidents, Dr. Mason (Longford), and Messrs H. Button and J. McKenzie ; secretary, Mr. Magnus M. Smith ; treasurer, Mr. C. Kent ; committee (9), Major-General Wilson (Penguin), Messrs F. W. Briggs, Scottsdale ; H. Lawrence, Point Effingham ; and S. Bendall, Hagley ; with Messrs Thomas Newman, Geo. Geard, L. S. Creer, G. Bailey, and M. M. Smith, of Launceston. The rules of the Hunter River Beekeepers' Association, with slight alterations, were then adopted. and a number of persons present enrolled their names as members.

It was decided that the meetings of the association should be held in the months of January, February, March, April, May, July, August, October, November, and December on each Tuesday nearest the full moon

A hearty vote of thanks to the chairman closed the proceedings, which lasted for about two hours.

SOUTH AFRICA.

Port Elizabeth, Cape of Good Hope,
5th October, 1893.

To the Editor of the Australian Bee Bulletin.

Thanks for the *Bulletin* sent me by yourself or some of your subscribers. Somebody seems to know the *bee king* in South Africa. I have kept bees and worked with them from my youth, and still keep them, although in South Africa the climate varies very much. In summer it is very hot, and sometimes very dry, so there is not always a certainty of a honey harvest. Some winters we have plenty of honey all through it ; at other times, in summer. If there should be plenty of rain, the principal months are from February to August.

I see you also complain of foul brood and diseases as they do in England. I think it must be where the bees are in a damp atmosphere and not enough sunshine ; hives too low on the ground, and not ventilated enough. As a proof of it I made a hive some time ago and made the roof with oil cloth, air tight. The only ventilation were the entrance holes. On opening the hive I found a deal of moisture and also some mildew on the comb. I removed the oil cloth and substituted a piece of coarse Hessian, which seemed to give life to the whole hive. So give your bees ventilation and plenty of sunshine. That will do more to eradicate foul brood than all the chemicals used. Of course there must not be a draft on the bees, especially in the winter. In summer you can give them more ventilation, as the sun is very hot in Africa.

If there are any particular points or news about our South African bees' habits which you would wish to know about I will let you know with the greatest pleasure. We have some of the English hives, which has been a success. I was much amused with the rheumatic cure by bee-stings. The honey we get in Africa is varied and assorted. At one time we get Druin Besse honey, which candies the moment it is taken out of the hive. Then there's Quarry honey, and there's not a better honey in the world than that. Then we have the Spec Boom, which is very coarse and binding ; also the Norsdoorn, which is very hot ; the aloe honey, slightly better than the Zuering honey, which is very nice and tart. The blue gum honey beats the lot for toughness —you cannot get it out of the comb, it is like glue.

I wish I could send you a dozen swarms over to see how they would get on in your country. We have three kinds of honey bees here—the black bee, the red bee, and the little grey bee. We have a little tick which bothers our bees—he hangs on to their legs. We have also several bee killers which annoy us, so we have got our grievances also.

Wishing my Australian cousins success in their beekeeping, I remain, yours respectfully,

BEE KING.

[The Bee King's buzzings will always be welcome, especially if some of your fellow potentates will follow suit. We would be glad to get a supply of your bees over here to see what they are like. Do you understand the Benton mailing cage ?—ED.]

Mr Smead, of Bayswater, Perth, Western Australia, writing to a friend in West Maitland, says :—The *Bee Bulletin* is coming to hand. An excellent little publication it is."

WESTERN AUSTRALIA.

Mr. Ayre, Mel Bonum Apiary, Perth, writes—Before writing this letter I have taken my bearings, or as near as you can possibly expect from one such a short time in this colony (Western Australia), and in doing so I am very sorry to say that I have met some very strange types of men, that call themselves beekeepers. Now, for instance, the other day at the R. A. C. of Western Australia, I had a one-frame and a full colony in observatory hives, for a novelty for Western Australian people. Well, a man came up to the stand and said, "Those bees are no good." I asked him why, and he replied "They have not got enough yellow on them. I have got bees all yellow." I asked him what he called them. He said they were the pure Larian, and when I said they must be a new bee he said they were not. I suppose he meant the Ligurian. Well, whether it was my taking the honey prize away from them or not I don't know, but they seemed more disposed to quarrel than anything else, and when I broached the subject about bee journals they told me straight in the face they knew as much about bees as any one. "Well," said I to myself, "I have dropped in amongst a nest of very savage bees." Then I wondered what I would do next, and I thought I would try another route, so I said "Here, come up and have a drink; it's too dry standing here talking." Well, they accepted with pleasure, and before long we were very good friends, and their yellow bees pure hybrids, and I am pleased to say the two days I was at the show I completely won them over to my side. In reference to my apiary, the bees are doing splendidly. I could not wish for anything better. The swarming is still going on. I stop it as much as possible, but the first swarm I must let come out when it gets up so that two stories will not hold it, but I never allow any after swarm. 48 hours after the first swarm goes out I give them a laying queen, and that with me prevents all after swarming. The size of the hive is about the same as a a ten-frame Langstroth hive, only the frames go crosswise instead of lengthwise, 12 frames in each hive. I have got some queens as good as any I ever saw for quality and laying. If I don't put a queen-excluder between the hives they will lay from board to board in the lower storey, and eight frames of the top. Its not many qualities of queens that will lay the side next the wood, but I have at least 50 such queens. My spring count was 100; my count now is 156, all very strong. We have had some unsettled weather, but I think we are going to have some good weather now—at least I hope so. I have extracted 900lb., but the honey season is just coming in. If some of your beekeepers were over here this morning it would make their hearts rejoice to see the bees. You see the bansha bloom has just burst, and it is something lovely to see the bees at work on them. The bansha bloom is about eleven inches long, and about three inches diameter. Well, this morning I should think there was half a pint of bees on one blossom. I should think there are over 10,000 bloom on one blossom, and you can take one in the morning into a room where there is a dry floor, and shake it; you can sprinkle the floor with nectar. The blackfellows tell me that they have squeezed half a pint of honey, as they call it, out of one blossom. Well, it is just coming out, and I will see later about the half-pint. I sprinkled the floor with one this morning. There are many good honey-yielding trees here. They say they get the best honey from a tree they call the Christmas tree. It is a large tree, but a pure mistletoe. In reference to a letter from A. M. R., O'Connell Plains, in August 26 number of the A.B.B., A M. R. must be a little near-sighted. Mr Root I should think 20 times over mentions the size of a top bar and body of frame. If you had told Mr A. M. R. he had not taken the frame rabbets out of the end pieces, which are 5-16ths wide, and $\frac{3}{8}$in. deep, and have cut the top bar 18$\frac{3}{8}$in. long, not 19in. as you say, you would have done right. Otherwise, as it reads, it would mislead anyone.

[Mr. Root certainly does mention in his last edition of the A.B.C. that top bar is 18 and 5-8ths. This is an error, and if you will turn to page 149 of the A.B.C., you will see from size of rabbets given, viz., 7-16ths, that it takes loosely a top bar of 19 inches. See also page 956 of "Gleanings" for 1891. We cannot see how our answer will mislead.—ED.]

BEEKEEPING IN NEW ZEALAND.

Allow me to first congratulate you on your desire and determination to cater for the beekeepers of Maoriland as well as those in other parts of Australasia—see Mr. Printer and put this "Australasia" not "Australia."—No doubt our beekeepers will appreciate your endeavours and give you a fair share of support—they may be slow in showing their appreciation, but the only thing to ensure success is to keep pegging away and it will come in time. Beekeepers are "Kittle Cattle" as the Scotch say, they must have a journal all to themselves—they are not content with a magazine that contains information on any other subject mixed with their pet one of bee-culture. There must be no farming, poultry-keeping, fruitgrowing, or other like matter in it. If they wish to know anything on these subjects they are willing to subscribe to a farming journal, but they want and will

have their beekeeping information dished up by itself. This is as it should be; modern beekeeping is only in its infancy, and nothwithstanding the vast improvements that have been and are being made every year, there is so much to learn yet that the space devoted to beekeeping in a mixed magazine is not sufficient, hence the reason in a great measure beekeepers prefer to support a journal devoted entirely to beeculture.

Our season here, just commencing, promises to be a very good oue, it is not quite so early as usual but perhaps all the better for that, for as a rule when the honey season comes in extra early in New Zealand, it turns out a failure in the end. Generally speaking our seasons in this colony follow those in the Northern Hemisphere. Why it should be so I have no theory to advance but we can generally depend upon it turning out so. Consequently we are looking forward for a pretty hot dry season, which is our best kind of season for honey. There is a difference of about two months in the swarming season between the extreme north and south of New Zealand. In the far north swarming often commences early in September, while in the South it is as late as the middle of November before it begins, and there is almost as much difference in the commencement of the honey season at both ends of the colony.

Langdon's Non-swarmer will have a very fair trial in New Zealand this season. There are a good many in use. I don't expect the device will turn out an unqualified success in every beekeeper's hands, but I do believe the principle is correct and that it only needs experience and probably some modification of the device, and the working of it, to make it fairly successful under all but the most dilatory person's management. I believe the arrangement will be of more service to small beekeepers than to those carrying on beeculture on an extensive scale. The latter give their whole time to the business and are always among the bees attending to swarming matters, consequently non-swarming devices are not so much needed as with those who can only give the bees a small portion of their time To the latter Langdon's Non-swarmer, if it proves the success its inventor claims for it, should be invaluable. In the case of extensive beekeepers carrying on outapiaries it might also prove of great value. I shall let you know how we get on with them later on.

Foul brood is not heard so much about now in this colony as formerly, but that may be, through not having a bee journal circulating among us of late. Beekeepers do not care to write and tell their grievances to a mixed journal like *The Farmer, Bee and Poultry Journal*, hence we do not hear from one another so often. Although there is a good deal of the disease still about it does not appear to give the same amount of trouble as it did. One thing to account for this is that a large number of careless beekeepers have dropped out of the business—found it "did'nt pay"—consequently beeculture being in fewer and more careful hands, the disease has a better chance of being kept under and from spreading. Seeing that you are agitating for a Foul Brood Act in N.S.W I have pleasure in sending you a copy of the one drafted by a committee of the late N. Z. B. K. Association some years ago —it may be of some service to you. Our object in drafting such a Bill, as you will see, was to avoid putting the Government to any expense for inspectors. It had the credit when introduced in the House as being one of the best and most simple Acts ever brought forward.

There is scarcely any of last season's honey on the markets here now, and of course the new season's will not be available till the end of March at the earliest. In the meantime we shall be rather short though the demand is comparatively very small through the summer months. Prices last season for best clover honey ranged from 3½d to 3⅝d and 5d per lb by the ton in bulk packages. These prices pay very well in a good locality. Retail prices for same honey in 2lb tins range from 10s to

11s per dozen tins. Comb honey in sections sell as a rule at a low figure—from 3/6 to 4/6 per dozen for well filled sections. This kind of honey being so easily damaged in transit prevents it being sent to distant markets, hence some markets are glutted while there is none in others.

Wishing you every success,

MAORILANDER.

Australian Honey on the English Market.

I was very much interested in your opening article last month, and the opinions of English experts, on the quality and value of Australian honey on the English market. Having had considerable experience in shipping honey to England, I have been enabled to judge of the requirements of that trade to a very great extent, and consequently may be competent to give your readers a hint or two on the subject.

My first experience with the Home Market was in 1884, when a sample of some I had raised, which was, I am sure, without exaggeration, some of the finest honey in the world, was submitted to a London expert (save the mark). He poor fellow had never seen anything like it before, and, as I suppose, he did not want to appear ignorant as to its value, pronounced it, "a very fair sample of honey, but too much wax in it." The merchant himself stated "he only dealt in the very best Narbonne honey, but he would not mind giving £2/- per cwt. for it, in cwt. kegs, landed in London." Now, when freight packages and all other expenses were paid, it would have left me at that price, something like 2½d. per lb. nett. Considering that I was selling the same honey in large quantities in New Zealand at 7d. per lb. in sixty lb. tins, I need scarcely say that merchant did not get any. The honey referred to, was a bright amber colour, and granulated as "hard as a brick" I suppose it was this dense granulation, that caused him to think, "there was too much wax in it," whereas I could have sworn there was not a quarter of an ounce in an cwt of it, and had the expert (?) only the sense to have liquified some of it, he could have seen at once whether his judgement was correct or not.

Although I still had occasional communication with them on the subject of honey, it was several years afterwards before I sent any home, for I well knew that unless I could secure the co-operation of some one there who would put it up in the most popular kind of package, and introduce it financially the business would be a failure. In 1887 this opportunity came, when I sent home two qualities of honey, to a Yorkshire merchant. One was a first class honey, and the other a second class article. Both took remarkably well, and orders came out for more of each kind. Since then I have been sending more orless home every season, but only to private merchants, as I am convinced from the experience of others I know that it does not pay to send honey to England through commission merchants. The prices obtained in the first place are very low, and a good part is swallowed up in expenses that are saved when dealing with a merchant direct.

There is another matter that has a considerable bearing on the business in question, that is, usage. I know for instance different districts in New Zealand that require a different coloured and flavoured honey in each, and it is exactly the same elsewhere. It will readily be asked why this is so? Well, it is chiefly because a certain class of the article has gained a footing in the district at the start, the consumers have got used to it, and it is difficult to get them to take any other. To an inexperienced person this fact seems almost ridiculous, but nevertheless I know it to be correct and that is why it is so difficult to introduce a new honey, through the ordinary channels of commerce in Europe. I would strongly advise those who wish to open a market for Australian honey in England to get some large retail establishment in one of

the large provincial towns to handle it. Let them put it up in retail packages, and introduce it among their customers. It will not be long before they can test the business, and if the honey takes there will at once spring up a large demand which will gradually spread to other markets. This is how N.Z. honey after many vicissitudes gained a footing on the English markets, till at present the demand is very large. and ever increasing.

MAORILANDER.

SPECIAL WORK FOR DECEMBER, N.Z.

So far as we can judge at present the season will prove a good one. It has not been so forward as usual in the northern districts, but I believe it may prove as early, or even earlier than average seasons in the more southern parts.

SWARMING.

This should still be expected, but it will be wise, unless increase is desired, to keep it back in every way possible. When swarms come off during a good honey flow it is always at the expense of a considerable quantity of honey, unless at the very beginning of the season, when there may be time for the swarm to furnish its quota to the general crop, and also for the parent colony to recover and add to the common store. The most profitable time for swarming to take place is at, or shortly after the beginning of the season, after which every scheme should be adopted to keep it down where honey is the object.

TO KEEP DOWN SWARMING.

It is not possible in all cases to keep down swarming, even when every known device is adopted, as it is the peculiarity of some bees to take what is known as the "swarming fever," but as a rule we can keep it within bounds by giving plenty of working room in the surplus boxes, seeing that the queen has plenty of spare cells for her eggs, and giving plenty of ventilation. These are the chief factors in the prevention of swarming.

RETURNING SWARMS.

The best method of counteracting the evil of swarming during the height of the season is I think to return the swarms, and perhaps one of the handiest methods of doing this is to hive the swarm in the usual way, and after cutting out all the queen cells in the parent hive place the body of the hive the swarm is in on the parent hive as a top box. There should, of course, be no zinc honey board between the upper and lower boxes when doing this, unless it is thought desirable to keep the queen confined to the upper box for a time.

SURPLUS HONEY.

Extracting will become pretty general throughout N.Z. by about the middle of this month, and on no account should the surplus boxes be allowed to get too full before deprivation, or swarms will be the result. Section honey as soon as sealed should be removed at once, and sections with foundation be put in their places. After removing sections they should be stored in a dry, airy place for a few days to harden and ripen them before being closely packed for market. Very great care should also be taken with regard to the proper ripening of extracted honey before putting it up for market, to avoid risk of it fermenting, which it is certain to do if unripe.

BUCKWHEAT.

Although buckwheat honey is not what one would call first-class, still it comes in as handy for winter stores as the best. It is a distinct advantage to be able to add to our autumn forage in N.Z., as we are rather short in that respect. Buckwheat is an autumn plant, and if sown in December comes into blossom in March. The blossoms yield a good deal of honey, and the wheat itself is a most useful grain for fowl-feed and other purposes. December is the month for sowing the main crop in N.Z.

NEW ZEALAND FOUL BROOD ACT.

1. The short title of this Act is "The Foul Brood and Disease in Bees prevention Act, 1888."

2. In the construction of this Act, if not inconsistent with the context:—

"Bee-keeper" means any person who keeps or allows to be kept on his property one or more colonies of honey-bees.

"Bee-expert" means any person skilled in apiculture appointed by law to carry out the provisions of this act with regard to the examination of bees, beehives, or combs alleged to be diseased, and the ordering of measures to be taken with respect to diseased bees, hives, and combs, by the owner or other duly-authorised person.

"Hive" shall mean any box, basket, skep, barrel or any other receptable in which bees are domiciled.

"Colony of bees" means the number of bees confined in any hive.

3. For the purposes of this Act there shall be appointed by the Governor one or more bee-experts to carry out the duties hereinafter set forth.

4. After the passing of this Act it shall not be lawful for any beekeeper knowingly to keep or allow to be kept upon his premises any colonies of bees infected with "foul brood" or other contagious bee disease, without taking the proper means described in the first schedule to cure such disease; and if, for more than seven days after becoming aware that any bees on his premises are affected with contageous disease, he shall neglect to destroy by fire or to take the proper measures to cure such disease, he shall be liable to a fine not exceeding forty shillings.

5. If in any locality where colonies of bees are kept within six miles of other domesticated bees there is reason to suspect that any such bees in such colonies are diseased, it shall be lawful for any two bee-keepers to send in writing a notice to the owner of such colonies, and require him to satisfy them by any reasonable means that his bees are free from disease, or otherwise that he has taken measures to eradicate the disease by destroying the infected hives, bees, and combs, or otherwise by treating them by one of the modes described in the First Schedule. A copy of such notice shall be forwarded at the same time by the complainants, accompanied by their names and addresses to the nearest Magistrate.

6. On receipt of such notice the owner of such bees of which complaint has been made, shall forthwith take steps to satisfy the complainants by whom the notice was sent, either by allowing them to inspect the suspected bees, combs, and hives, or by other reasonable means, that the said bees, combs, and hives are free from disease, or that he has taken the proper measures to eradicate the disease if the same exists.

7. If after the expiration of three days from receipt of the notice the keeper of the suspected colonies neglect to reply to the notice, or if, having replied, he fail to satisfy the senders of the notice as set forth in the preceding clause, it shall be lawful for them to complain in writing to the nearest Magistrate, reporting such neglect, a copy of such complaint being at the same time sent to the offending bee-keeper; and on receipt of such complaint the said Magistrate shall, without delay, instruct a constable to accompany the complainants, and with them to enter upon the premises of the offending bee-keeper, and then and there to require him to open such hives and expose such combs as the said complainants may direct; and, in case of his refusal, to authorise the said complainants themselves to open and examine such hives and combs as they may deem necessary.

8. If after such inspection the said complainants shall be satisfied of or suspect the existence of disease in all or any of the hives so inspected, the constable shall require the said beekeeper, or in case of his refusal, the said complainants, to cut out from each suspected hive a portion of comb not exceeding six inches square, and to place each portion or portions of comb in separate tin cases or boxes, marking the same with a legible mark corresponding to a mark placed upon the respective hives from which the portions of comb were taken, and then and there to seal such case or box, and to deliver the same thus packed and sealed to the constable for transmission to the nearest expert, together with a document signed and in the form set forth in the Second Schedule; also, the cost of carriage, and the payment of the expert's fee as hereinafter provided for. Provided always that if the keeper of the infected bees shall, in the opinion of the complainants, take sufficient steps to destroy by fire the suspected hives, combs, and bees, then it shall be unnecessary to send the suspected combs to the bee expert, as above described.

9. On receipt of a parcel of comb for examination, the bee-expert shall examine the same without delay, and if, in his opinion, the comb is infected with contagious disease, or if it be free from disease, he shall notify the fact in writing forthwith to the complaining beekeepers, as also to the constable; and shall transmit with such notifications directions as to the steps to be taken with respect to the colony or colonies of bees from which the combs were taken; and upon the receipt of such notification from the bee-expert, the constable shall notify the keeper of the infected or suspected bees of the result of the examination, and require him, within three days, to carry out the instructions of the bee expert to the satisfaction of the complaining beekeepers. They shall reports such defaults to the nearest Magistrate, who shall direct a constable to accompany the said complainants to the premises of the keeper of the infected colonies of bees, and shall authorise such constable to carry out the instructions of the bee-expert, and in such later case the offending beekeeper shall defray all the costs of the examination by the bee-expert, and for the loss of time and other reasonable expenses incurred by the complaining beekeepers or such constable.

10. If the offending beekeeper shall wilfully obstruct the carrying out of the instructions of the bee-expert, he shall be liable to a fine not exceeding twenty shillings for each infected hive.

11. The fee payable to the bee-expert for examination of one sample of comb shall be 5s., and for other samples sent from the same apiary, at the same time, one shilling for each additional sample.

12. In the case of any examination of suspected comb by the bee-expert, his fee, and all costs attending such examination and incidental to the complaint, shall be payable by the complaining beekeepers if the comb or combs be reported upon as free from contagiour disease; but if found to be infected by disease, then such fee and costs shall be payable by the keeper of the diseased bees.

13. After samples of comb have been taken from any suspected hive or hives for the purpose of examination by the bee-expert, if such hive or hives shall be removed or interfered with in any manner whatsoever by any person, or if any person shall obliterate or otherwise render illegible any official mark placed upon such hive or hives, save and except upon the authority of the bee-expert, the keeper of such hive or hives shall be liable to a fine not exceeding sixty shillings for each hive or mark so interfered with.

14. All fines and penalties made payable unde this Act shall be recoverable summarily under "The Justice of the Peace Act, 1882."

SCHEDULES.

FIRST SCHEDULE.

In bad cases, total destruction of bees, hives, and combs by fire.

In mild cases, or as a preventive any of the following remedies:—

No. 1. Salicylic-acid, solution for mixing with syrup for feeding bees, painting the interior of hives, and spraying combs and frames—Salicylic acid, 1 oz.; soda borax, 1 oz.; water, 4 pints.

Medicated syrup for feeding bees affected with contagious disease:—(*a*) For use from August to May: Ordinary table sugar or honey, 10lbs.; water, 7 pints; vinegar, 1oz.; salicylic-acid solution No. 1, 1oz.; salt 1oz. Mix and boil a few minutes. (*b*) For use from May to August: Ordinary table sugar or honey, 10lb.; water, 5 pints; vinegar, 1oz.; salicylic-acid solution No. 1, 1oz.; salt, ½oz. Mix and boil for a few minutes.

No. 2. Absolute Phenol: pure phenol in crystals, 12oz.; water, 3oz. Shake well until dissolved.

No. 3. Phenol Solution: Pure phenol solution, No 2, 1oz.: water, 1 pint. Shake well until the oily appearance has entirely disappeared.

Phenolated Syrup:—For use from August to May: Sugar syrup as given in receipe for medicated syrup (*a*) (omitting salicylic-acid solution No. 1), 1 pint; phenol solution No. 3, 1oz. For use from May to August: Sugar syrup as given in recipe (*b*) (omitting the salicylic-acid solution No. 1), 1 pint; phenol solution No. 3, 1oz.

No. 4. Phenol solution for spraying bees and combs: Absolute phenol solution No. 2, ½oz.; water, 5 quarts.

General Treatment of Diseased Bees:—Remove the diseased bees with their hive from its position and put another hive, that has previously been disinfected by painting the interior with No. 1. solution of salicylic-acid or No. 3 solution of phenol, in its place. Transfer the frames, combs, and bees from the old hive, spray them with No. 1 solution or with No. 4. solution, and put them in the new hive. Remove most or all of their honey, and feed the bees on medicated or phenolated syrup until cured of disease. The old hive must be thoroughly disinfected in the manner described, as also the hands, and everything that has been in contact with the diseased bees or their hive.

SECOND SCHEDULE.

To the Bee-expert, [*Here insert name and address*],

1, CONSTABLE [*Here insert name and address*], have this day sent you [*Here insert number*] portion or portions of combs marked [*Here insert marks on Comb*], cut from hives believed to contain or have contained diseased bees, and I desire you to examine such combs and report to me and to [*Here insert names and addresses of complaining beekeepers*] in writing your decision and the steps to be taken with such bees, combs and hives from which such portions of comb were taken. Fee for examination and report enclosed.

I have &c.,

A. B., Constable.

THE ENGLISH MARKET.

Mr. John Skinner, The Apiary, Maclean, Clarence River writes—I notice in last number of the *Bulletin* some correspondence re market for honey in England, and you draw the readers' attention to the great difference in the various reports, and say, "How can we bridge these two communications?" Why, Mr. Editor, very easily. One is from a gentleman who has become accustomed to Australian honey; the others have not, and there the difference comes in. Now, as I have had some slight experience in beekeeping and marketing honey in England, and also since I came here some four years ago, I might be permitted to offer a few suggestions which may be useful. If I produced more honey here than I could dispose of I should produce 1lb. sections, and place them on the English *retail* market. They can be packed so as to send round the world and back again, without bre king. They would fetch from 8s to 10s per dozen at some of the places I am acquainted with. If extracted honey it should be bottled in 1lb. or 2lb. honey jars, as the British public like to see what they are buying. The American glucose comes to England in nice clear glass bottles, with a piece of comb honey in the middle of it. It should in no case be sent in old kerosene tins, with "Kerosene" stamped on top, and fixed in old kerosene cases. If it is it will have some difficulty in passing the customs office, as there are very stringent laws regarding kerosene and explosives, as our Queensland friend found out some time ago. But I very much doubt if our honey will take very readily on the English market, as it has *decidedly* a strong flavour (especially the ti-tree honey) as compared to the English honey. I have had some honey here that would make a good price at home, but not large quantities of it. I believe it came from corn, also from wild apple tree and black butt. In parts of the colony where white clover is plentiful there should be good honey, and such as should take on the English market.

NON-SWARMERS AND BEE-KEEPERS' RIGHTS.

Mr, George James, Gordon, writes :—*Gleanings* for September 15th is to hand. On page 705 B. Taylor gives the outline of his non-swarmer and hive used with wire cloth partition, which he claims as his discovery and intends keeping himeslf protected legally. To the above I will add, that the Fray-James non-swarmers is as he therein desoribes. Secondly we have a few hives now working some few months that have a safe zinc partition instead of the cloth wire. It seems strange that we should have been on the same lines with the non-swarmer And we have since noted that the Well's Hive is of similar make. I pen these few lines so that a record shall be made in one of our journals which will in due time come before the "Bosses" at the Home of the Honey Bee.

P. S.—Talk about transferring. Here is a case in point. Some scoundrel took a hive of mine away some distance last week and then transferred the queen. That's all. Went to friend Riddel's transferred some frames of honey, next to Mr. Hogan's, annexed three full colonies Italians, and finished up by taking the schoolmaster's turnout. Isn't that a case of transferring that can't be questioned. I have got an electric wire and a charge of shot to transfer to the next that comes my way.

THE BLUE MARTIN.

Mr A, Wooden, Old Junee, writes, Nov. 10 :—By what I see in your last issue the beekeepers of this district are not the only people troubled with the blue martin, and that Mr L. F. Woolrich is of the opinion that they only eat the drones. The blue martin here eats the working bee as well. I have no doubt that they would rather have the drone if it were possible for them to always get them. I have shot as many as seven and eight in a shot here, and have opened their gizzards and found the working bee as plentiful as the drones.

Then we have another bird that I think is quite as bad. Of a dull day they will gather round the hives in large numbers and kill nearly every bee that comes out. They are what I call the straw tail bee eater. The two feathers in the middle of the tail project out from the others 1½ in. to 2 in., like two straws. The bill is long and pointed, and they are slightly of the color of the kingfisher.

Mr J. S. Dick, Kawan apiary, writes :—I shot the black and brown martin thirty years ago for destroying my bees. I do the same now this spring. They were very troublesome, and my son used to shoot from 20 to 30 per day. There were no drones in my hives, and therefore it was all workers they got, and were full of them when cut open. They are our worst winged enemy of the bird kind.

THE CHICAGO EXHIBITS.

Bolwarra,
Nov. 16th, 1893.

Dear Editor,—I have just received the first news of the H. R. B. K. exhibits at the World's Fair, Chicago, from the Secretary of the N.S.W. Commission. In the communication he says—"Dr. Renwick reports that the collection has been judged and reported on as a collective exhibit. *An award of the highest character* will be given to this collective exhibit, and each individual exhibitor will be at liberty to use the diploma and medal."

It will be remembered that Prof. C. V. Riley, of the Department of Agriculture, U.S., was asked to judge the exhibits separately, and to give awards comparatively, so it is hoped his decision will shortly be to hand. I think I may be pardoned for expressing extreme satisfaction at the news received so far, as it points out that our small effort has shown the world that even in apiculture New South Wales is as far to the fore as she has proved herself to be in other industries.

I append a list of the beekeepers who helped to make up the collection, and who in the terms of Dr. Renwick's report "are at liberty to use the diploma and medal" awarded. Friends, accept my sincere congratulations.

J. F. Munday, Woodville ; J. W. Pender, West Maitland; R. Patten, Bolwarra; C. Mansfield, Largs ; M. and R. Scobie, Oakhampton ; J. Tucker, Paterson ; A. J. C. Vogele, Paterson; H. Buttsworth, Cessnock; E. F. Doyle, Werris Creek; R. Mankin, Morougla ; W. Niven, Eugowra ; W. Shaw, Mudgee ; Mrs Bennet, Tamworth.

Yours faithfully,
R. PATTEN.

DO BEES STEAL OR TRANSFER EGGS.

Friend Tipper,—As Mr. Abram takes me to task over the stealing business and winds up his comment with a rather sarcastic flourish, I hope you will allow me the privilege of reply. When I sent you the article complained of I certainly did not have the satisfaction of allowing the cell to hatch, as at the time I could not afford the waste time of the bees, and I don't see how, what I reported is new under the sun, else how came A. Pettigrew (and also many others), in his work on apiculture, to report same on page 105 as occurring in two notable instances, and if I had only

time I could turn up many reports in *Gleanings* and *American Bee Journal*. But then I suppose its no use arguing against books and journals, when Mr. A——— says none are equal to the beehive. Perhaps not, but still even the most skilled of us got to go under when we try to upset some established rule reported in books and journals, inasmuch as you say, I have been misled and ready to mislead others, and if, as you say, experience cannot be swallowed by the bushel. You evidently get off the track a little yourself to such a degree, that, I am afraid even Jennie Atchley's six year old will "just larf" as you make a bold assertion, that bees cannot transpose eggs, as owing to the fact of the queen taking care to carry a "Printer's paste pot and brush, to fasten the eggs," and if such are removed perforce, it is at once destroyed. Now does any practical let alone skilled beekeeper believe that bosh. I do not, for the proof is given plain enough—in fact, it seems folly to have to write it, the first I knew about removing eggs, was by removing eggs from drone cells to worker cells, and vice versa with the result everyone knows. Next trial I had was to place worker eggs in embryo queen cells, and there are many bee-keepers who raise queens artificially, who use worker eggs, and not hatched larvae, and I have removed eggs, "over and over again," and I am positive that bees can handle eggs with the same ease as one can handle frames. I had a valuable queen caged in a totally broodless hive not long ago, and the bees seemed bent on not receiving her. On the sixth day, they had a queen cell started. I examined it and found a just hatched larvae in same. I removed the queen, allowed the cell to hatch, which turned out to be a fine Italian queen. Now in this case, I am positive of what I state, as the colony was a pure black. All who are interested, please turn up A.B.B., for January 1893, page 179, where another reports the very same occurrence, and that bees do transfer eggs from cell to cell. I for my own part have observed where it has been done in a bee hive, but I have not seen the bees do it, and any one understands what friend Taylor meant to imply without being twitted with the Dr. business, and I can promise you that when I have the good fortune to come across such another cell as I reported I shall watch with care. I have always noted when a cell is fashioned and finished for a queen cell, that contained a laying workers egg, it appeared as if it was never going to be finished, and reached from 1⅝ to 2 inches long, resembling a queen cell that had been started over drone larvae.

GEO. JAMES,
Gordon, N.S.W.

Mr T. Morrison, George street, Sydney, in sending his subscription, says:—"The *Bee Bulletin* is instructive and interesting, wishing it success," &c.

MR. C. MANSFIELD'S HUNTER RIVER APIARY LARGS.

From Town and Country Journal.

The Hunter River Apiary, owned by Mr. C. Mansfield, is at Largs, near the junction of the Hunter and Paterson Rivers, about five miles below Maitland. The apiary consists of about 100 colonies of Ligurian or leather-coloured Italian Bees. It is situated some two or three miles from the forest—generally the chief source of honey supply, and the honey yield is drawn from orchards, cultivated plants, &c., of the adjoining Hunter flats. In early spring honey is stored from willows, which line the river banks for miles, also from the various summer fruit bloom. Then follow white or Dutch clover, lucerne, pumpkin, maize, sorghum, potatoes, &c., all of which are ransacked by the bees for the nectar their blooms yield, or the pollen of their anthers. During the winter, sufficient honey is gathered to keep the hives supplied with food from blind nettles and other weeds growing on the cultivated lands.

On reference to the picture it will be seen that the hives are on the ground, standing on bricks, and made plumb. They are painted white to keep them cooler in hot weather. Owing to limited space, the hives are somewhat closer than, perhaps, they should be. Fruit trees are grown between the rows, partly for shade, and partly as a guide to direct the virgin queens to their hives when returning from their "wedding flight." As the Hunter River Apiary is located so favourably for the purpose of "queen-breeding," Mr. Mansfield devotes his principal attention to this important branch of the Bee-master's art, and a few words on this subject will be of interest to our readers.

The queen is the mother of all the bees in the hive, and so, as she is, so they will be. If they are vicious—stinging without provocation,—lazy, wild under manipulation, much addicted to swarming, &c., the fault lies in the queen. She must be removed and replaced by one of good character, and that hive will be completely changed in the short space of three months. Many bee-keepers who are badly situated for breeding queens—being too much exposed to the contaminating influence of black and mongrel drones—purchase their queens by the dozen from reliable breeders.

The small hives shown in the picture are termed Nucleus hives, and the young queens which have been raised in the larger hives from eggs laid from imported or other choice mothers are kept in them until, being fertilised by the drone, they begin to lay. They are then termed untested queens. In the course of 21 days the young bees produced by these queens will hatch, and the practised bee master can at once tell what choice that queen made in her mate. If the young bees are of satisfactory breed, their mother queen would now be termed a tested queen, and would command a higher price.

The Hunter River Apiary was awarded a highly commended certificate in connection with the national prize competition both in 1891 and 1892. Mr. Mansfield imports direct from the most noted queen breeders in Italy every season, and sends bees and queens to all parts of the country.

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