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A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

VOL. 5. No. 10. JANUARY 28, 1897. PER COPY, 6d.

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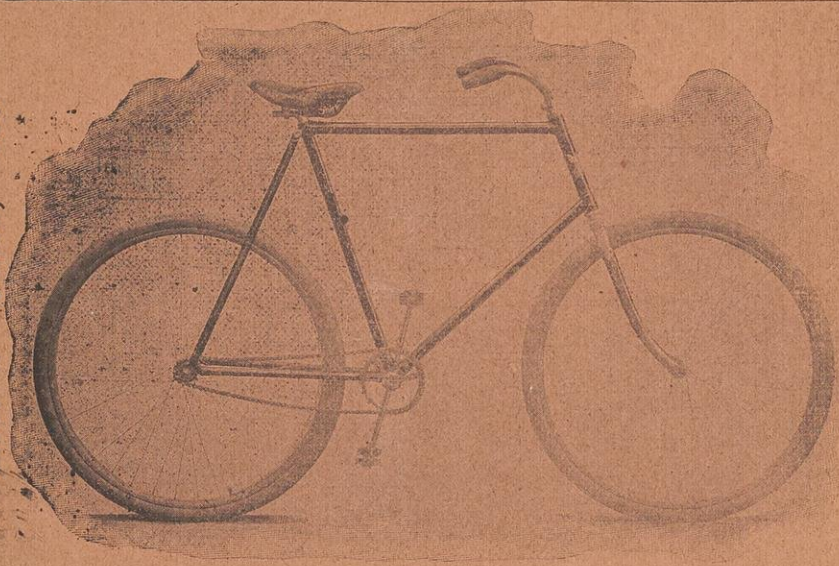

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QUEENS FROM QUEENSLAND.

ONE of the prime essentials in the successful production of honey is the possession of prolific queens, and the beekeeper who ignores this fact by allowing old and unprolific queens to do duty in any of his colonies will not be in it with the wide awake apiarist who sees that each colony is presided over by a vigorous queen only. If you require queens of this latter class (the fruits of thirteen years careful breeding from the best stock obtainable from the world's most noted breeders) kindly send along your orders, and whilst thus having an eye to your own interests, also afford me an opportunity of illustrating the degree of proficiency to which I have attained in the breeding and mailing of queens. My home yard is stocked exclusively with Italian bees, and I have now available as fine a lot of young queens as were ever raised. Carniolan Queens are bred in my out-apiary from imported mothers, and are mated to Italian drones. All queens are sent post free and safe arrival guaranteed to all parts of Australasia. We have no foul brood in Queensland, and my apiaries are entirely free from disease of any type.

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The Australian Bee Bulletin

A JOURNAL DEVOTED TO BEEKEEPING.

MAITLAND, N.S.W.—JAN. 28, 1897.

Mr. J. M'Cue, of Port Macquarie, has received the appointment of manager of the bee and poultry farm at the Hawkesbnry Agricultural College.

If you have any beekeeping friends in your neighbourhood who does not take the *A.B.B.* kindly send their names to us and we will forward them sample copies.

In sending samples of honey in glass bottles, in wooden packages, a little room should be left for the cork to fill out to the end of the package. The package in going through the post is liable to changes of temperature, and if what air is in the bottle cannot expand by forcing the cork a little, the bottle is bound to burst.

Unfinished sections left over from one season to another are splendid property, but they must be thoroughly cleaned out by the bees, otherwise the slightest granulated honey will granulate and spoil the new honey placed in them. The comb-leveller, for levelling down such unfinished sections, thereby making them more acceptable to the bees, is highly spoken of by the Americans.

Now that honey is coming in, and beekeepers are reaping their reward for past months of toil, expense, and anxiety, we would remind them that a great many are in arrears with their subscription to this journal. We have laboured hard to give you the best and latest ideas and information, but weekly expenses have to be met, and good words and expectations alone don't meet them. Is this hint broad enough?

It is reported from Tarcutta that just before the late rain ceased a large flock of birds, said to resemble snipe, settled down on a local garden where bees were kept and attacked the bees as they emerged from the hives. A gun was used, but the birds came so thick and fast that sticks and stones had to be resorted to by the residents. About 60 birds were killed and more were wounded. In other gardens bees were killed in large numbers by the birds.

Re Prices of Honey.—While in Sydney last winter, sections were much called for and they could have been sold over and over again at 8/- per dozen, 1/- each retail. In America the wholesale price ranges up to 14 cents or 7d each. Why do not Australian beekeepers keep their prices up? There are plenty of well-to-do people who indulge in luxuries will give a good price for comb honey. If they do not happen to live in your own neighbourhood the larger cities have them. You need only to wait and you will get your price. Certainly you cannot expect it now while fruit is plentiful and cheap, but just wait awhile. You should remember comb honey is much more expensive to produce than extracted honey. The former not only require the purchase of the wooden sections, but the wax raised is included. Wax is worth 1/- per lb. In extracted honey sheets of comb can be utilised again—year after year if necessary—saving the bees a lot of trouble in making comb, and the apiarist money in buying foundation.

One of the great troubles of the month are robber bees. As the various flowers cease the bees will still continue to search for honey, and every kind of sweet will be attacked, cordial factories, grocers' shops, crushed or injured fruit, and most of all the weaker hives. You will soon learn to recognise the robber bee by the way he sneaks and dodges about the entrance and the hive in order to pass the extreme guards. Strong hives are as a rule always able to hold their own against them. Italian bees are also better able to resist them than blacks. Should they once get possession of a hive it is all up in a few hours. The inmates being conquered, the queen killed, all the stores will be transferred to the robbers' home. The robbed hive is irretrievably ruined. Whenever honey in the fields is getting

scarce the greatest care should be exercised in opening hives, or robbing will be started and one band of robbers will as likely as not infest a whole apiary with the same marauding spirit, resulting possibly in the ruin of all. And robber bees, when once on the rampage, will go for everything around. Everything and everybody is liable to attack. The best remedy we have heard recommended is to make the hive entrance very small, so that only one can enter at a time, or cover the entrance of the hive attacked with wet grass, or even straw dipped in ke osene. The robbers will cease to force thrir way through this, but the inhabitants of the hive will not. Bee tents and robber traps have also been recommended, accounts of which are to be seen in the different standard publications on bee-keeping,

Apple tree bark is the best smoker fuel we have come across.

A bit of chalk in your pocket is very useful in going round your apiary and honey house. If you see ants are trouble some, just make a chalk line across their path. Of course it will need renewal, but it is a great help till you can adopt more permanent measures.

Whatever the beekeepers of New South Wales may still think, there are those in Victoria who are of opinion Foul Brood Acts are necessary. See the report of the Bacchus Marsh B.K.A.; also Mr. Smith's and Messrs Wilson's excellent letters elsewhere. The American beekeepers are also not going back in this matter, several states purposing getting Acts passed on the Canadian basis. The question should be by no means shelved, and the forthcoming annual convention should give their best consideration to the matter.

For Honey Labels and every description of PRINTING send to A. BEE BULLETIN Office.

BACCHUS MARSH B. K. A.

GIDEON HOLLIS, HON. SEC.

The usual monthly meeting of the Bacchus Marsh Beekeepers' Association, was held at Hollis' Tea Rooms on Wednesday, January 13th.

Mr. W. Smith (president), in the chair.

The proposal of the President to make a trial shipment of honey to an outside market was discussed at length. Discussion to be resumed at next meeting. Full enquiries to be made in the meantime re possibilities of different markets and the best means of placing it, &c.

The articles on Foul Brood appearing in the December number of the A. B. B. evoked a lively discussion and all the members present seemed to be of the opinion that in addition to Mr, McEvoy's second transferring, the old hives needed a thorough cleansing and several days exposure to the air before being again used. Some of the members spoke also very strongly about the evils of inbreeding, regarding that as a predisposing cause by weakening the constitution of the bee. Remedy: To obtain breeding queens at frequent intervals and thus minimise as much as possible the danger of queens being mated with drones that are in any way related to them. It was also decided to use every effort to get a Foul Brood Bill introduced into Parliament, as that was considered the only way to control the careless box hive man. Members for the district to be interviewed and the secretary to invite the co-operation of the Victorian beekeepers and suggestions re working of the proposed Act.

Next meeting to be held on Wednesday, February 10th, 1897.

VICTORIA.

W. T. SMITH.

Dear Sir,—The articles on Foul Brood appearing in A. B. B. have awakened a keen interest in beekeepers in this district. So much so that they have decided to use every endeavour to get a Foul Brood Bill introduced into Parlia-

ment. While not agreeing with some of the points raised by Mr. McEvoy, especially that pertaining to the non-cleansing of hives, as I am of the opinion that in this colony at least it would be the means of doing a lot of harm, for their being no restriction of any kind, careless beekeepers would leave hives laying about and thus cause the disease to be spread broad cast—I can understand where united action is being taken and each and every individual is doing his best to eradicate the disease, it may be done, but here it is different. It is hard for one to be using his best endeavours to get clear of Foul Brood to find that his next door neighbour, who is a box hive man, and does not care if his bees are rotten or not nor does not take the least interest in them, has thrown his empty boxes and foul broody combs about for the bees to clean up. For this reason I think every beekeeper cannot be too careful how he handles foul broody hives, and until a Foul Brood Bill can be introduced into each and every colony, we, as beekeepers'must endeavour to diffuse habits of cleanliness among our surrounding beekeeping friends. It is an object lesson to beekeepers in Australia the way our brothers on the other side are coping with the disease. Why cannot we follow in their footsteps? Come on Victorian beekeepers, help us in our endeavour to get a Foul Brood Bill introduced. Roll in your suggestions and your help. I wish we could get another McEvoy at the head of affairs—300 miles—he earns his salary alright.

VICTORIA.

W. D. RUSSELL, VIC.

Abraham Lincoln (president of the United States of America) once said: "If you have anything you want to do, but find it difficult of accomplishment, *just keep pegging away at it.*" Acting on this advice, I am once more going to "peg away" at my work of stirring up our beekeepers to the importance of having a man in England devoted entirely to selling our Victorian honey, or if the other colonies will join in, then in selling our Australian honey. A month or two ago our Victorian markets, being clear of any good honey, the price went up to 3½d, and of course it was useless to say a word about selling elsewhere, as many supposed we had reached the millenuium, but, sad to say, honey is again quoted "dull of sale," and without doubt from now on those types can be stereotyped, as they will be constantly in requirement. Now, what's to be done? At the last *annual* (that word must mean once in two years) meeting of our convention my motion to send a man to England hardly met with any approval, but a motion of the secretary (I think) suggesting a "Moral Suasion Company" to push the sale of honey, was carried by 150 votes. Well, sir, wasn't it a bit of humbug! What on earth is meant by moral suasion in such case, or what has come of it so far? Ah, Mr Editor, I'll let you into the secret—*it didn't cost anything!* The other would have, but then you see again moral suasion didn't do anything—the other would have. Well, all that's past. What are we going to do now? How would it be if your Convention would send a man over to confer with us at our next "annual" convention, and perhaps between the two colonies we may scrape up enough to send a man over to carry out the suggestion I have so persistently pushed on to the notice of beekeepers. Now, sir, as time is money with all of us, perhaps if you would send this suggestion to your secretary of convention, and print his opinion as well as your own as a footnote to this letter, it may do some good. It's wonderful the influence a secretary and editor wield. Those who pooh pooh, in their great wisdom (?) the suggestion of a humble member of the rank and file, are fairly led by the same suggestion if from an editor, who they imagine is the embodiment of all knowledge.

Mr Whittell, Hon. Sec. N.B.K.A. are you there? Do you hear what Mr. Russell says?

VICTORIAN NOTES.

R. BEUHNE, TOOBOORAC.

Wax from Diseased Combs.

I am not satisfied with the Editor's footnote to my remarks on wax from foul brood combs: "If used to make foundation it would be very dangerous."* Not at all! I make all my brood foundation from old combs, mostly from diseased hives, and sell the wax from cappings or else use it for section foundation. Most of the wax sent to market is from old hives, and in almost every cake there is some from diseased hives. Manufacturers of foundation buy it and distribute it in the shape of foundation all over the country, and yet foul brood does not follow it. You cannot get the wax from the combs into shape for foundation without boiling it twice, and that is sufficient.

Ants troubling Bees.

I am rather surprised at some of the old-fashioned remedies recommended in your last issue. Just fancy an apiary, say of only a hundred hives, standing on four hundred legs in four hundred tins with water and kerosene to be renewed frequently; and what a nice atmosphere on a hot day it would create, besides being quite ineffective where the larger ants are the trouble—the hives being off the ground, bees returning loaded and missing the alighting board would be captured by ants before they took wing again. How many bees would get drowned in the tins, especially at swarming time. Mr Adams' way of using bees to keep them away is about the best, but if they get too numerous and bold, hunt up their nests and scald them after dusk when all are at home. A limited number will do good work as scavengers.

Foul Brood—McEvoy's Cure.

I read with interest Mr McEvoy's paper on Foul Brood. His facts are no doubt right, but I do not think the same of some of his reasons. For instance: "The bees fill themselves with honey from the old combs, then build combs on the starters, and store this diseased honey into them." Very well, but why on earth don't they fill themselves again with the same stuff when the newly built combs are removed on the fourth day?

I cannot agree with Mr McEvoy in dispensing with the cleaning of the infected hive. That there is no more reason to scald the hives than there is of scalding the feet of all the bees is absurd; bees will clean their feet thoroughly—anyone can convince themselves of that. Just put a colony of bees from very old combs into a new box with a smooth white bottom, and you will find quite a quantity of dirt on it next morning. They are not so particular in cleaning the hive, and a little strip of propolis is quite enough to hold a multitude of germs, which, however, may not be brought into contact with the brood for a considerable time. I shall continue to scald and scrub my hives, even if it is only a fad, but I am in good company. (See *Gleanings*, Dec. 1, page 853.)

Why use frames and starters to get combs built to receive the diseased honey? Put a board across the hive and let them build on that, and cut off your combs on the fourth day, or use top bars or sticks, and save the frames, the starters, and the labour of fastening them into the frames.

Transferring diseased bees to other combs.

I could never see why it should be necessary for a diseased colony to have to build and fill a whole set of combs after having been removed from the diseased combs. It is easy enough during the honey flow, but when you find foul brood just as you are going into winter you cannot get combs built, particularly when the colony is already weak, not even by feeding.

When overhauling the colonies before wintering down last June I found four diseased colonies, one (No. 51) being in an advanced stage, the others being Nos. 92, 102, 68. I removed them into clean hives with waste strips of wood to hang on for five days, and only fed sufficiently to keep them alive. No comb was built in 51, and a piece the size of an egg in each of the others. The sixth day I returned them to their former hives, which had been scalded and cleaned in the

meantime, and gave them combs with sealed honey and pollen from my winter emergency stock. To No 51 I also gave a young queen and killed the old one. Two days later I put a frame from a strong colony containing about a four inch disc of brood, but no bees, into each, and shut them down for the winter.

No 51 had 4 combs, but covered only 2.
„ 68 „ 6 „ „ 4.
„ 92 „ 5 „ „ 3.
„ 106 „ 6 „ „ 4.

I examined them October 4th. 51—clean. 68—Clean, but queenless; combs and bees given to No 66. 92—clean. 102—Clean, transferred queen to No 30, and bees and combs to No 104. I have examined them again to-day, Jan. 11th. No 51—Clean, and one of the best. No 92—Clean, and of average strength. No 66—(which had the combs of 68) clean. No 30—(queen of 102) clean; and 104 (combs of 102) clean.

These are items sifted from my record and note book, but I should add that the vacant space in the hives was packed with pine sawdust till October.

The Wax Press

In answer to the Editor's and Mr J. T. Adams' request, I should be willing to give the information desired, but do not know that I am at liberty to do so. Mr Adams is mistaken; I did not give a description of the press at the Convention, but exhibited it and explained the working of it. The model and rights for it I sold to Mr L. T. Chambers at the close of the Convention, and it rests with that gentleman whether the description required is to be published or not. There has evidently been no demand for it, for the Beekeepers' Supply Co. have not even catalogued it—another instance of how slow beekeepers sometimes are in giving a new thing a trial. Mr Garrett, of Briagolong, has one in use for several years which I made for him, and I believe Mr T. Bolton, but whether he has the same pattern or not I do not know. My own original one is still in use, and does good service for wax, copying letters and making foundation. With it I obtain up to ¼lb. of wax from every square foot of the oldest comb, and will challenge anyone to obtain as much by any other process, steam, solar, or any other extractor included.

When writing business letters I remove the body and use it in the same way as an ordinary office copying press.

I having been lately using it for making foundation on the Reitsche foundation plates, and having overcome the difficulty of evenly distributing the pressure over the surface of the Langstroth size, I can now turn out foundation fully as fast single handed as can be done by two on the roller mill, and of any thickness up to 12 feet to the pound.

I have also pressed tons of refractory honey, which would neither extract nor strain, when the apiary was located in Gippsland, and most of the honey of the nature of jelly.

However, I am not interested in pushing the press forward, for I gain nothing by it, and while using it myself almost alone, I have a slight advantage over others.

*Note our reservation in the footnote referred to

HONEY REPORT.

The South Coast & West Camden Co-Operative Company, Limited., report:—

January 13th, 1897.

Sussex Street is glutted with supplies from all over the country, and sales are dragging considerably. The low price of butter is in some measure responsible for this. Grocers complain of a very limited sale this summer. Again, high prices ruling last season have drawn a lot more people into the business, and the output all round is very heavy. Present quotations are: Best clear crystal honey, 2½d to 3d per lb.; dark and inferior, little or no sales at 2d.

WHO SAYS EUCALYPTUS?

GEORGE JAMES.

Dear Mr. Editor,—Don't you think it is about time the Australian beekeepers called a halt on the everlasting cry of eucalyptus flavour of our honies. Messrs Bennett and Chambers of Victoria endorse my feelings in the matter, and I will just ask, do one half of the eucalyp-

tus writers know how said honies got such a black eye on the English markets. If not, it may be as well to enquire who first had a hand in ruining the home or export markets. Some eight or ten years ago when eucalyptus oils and extracts got such a medicinal footing, a certain firm in one of the southern colonies just *doctored* up a shipment of honey and sent home to John Bull's children. Now, as I had a sample 2lb tin, I can truthfully say that one teaspoonful was quite enough at a dose, even for a colonial, so that is it any wonder that Australian honies are at a discount? Then again, a Sydney firm conceived the idea of putting up pure eucalyptus honey in 4 ounce jars and offered them in a wholesale way so that it could be sold to the public at 1/6 *per* 4 *ounce jar*. So there's a chance for some of the fraternity who favour the term to make a good cheque, provided of course they run a little of the pure extract. If anyone is interested enough to know what the stuff I refer to is like he can purchase at almost any of the Sydney chemists, and I think they will soon quit the term eucalyptus as applied to most of our honey and the sooner the beekeeper sells a thing for what it is the better for himself and all concerned. If one sells by sample, see to it that you do the square thing; there is too much ringing in a few tins off colour. As to the export trade I notice a shipment of 150 cases just landed from Canada—can't we play a joke on John Bull and re-ship home as up-to-date non eucalyptus flavour? How would it do to call it Wattle Bloom. Speaking of Wattle just reminds me that a honey dealer informed me it was bad to be near Wattle bloom on account of the eucalyptus flavour it imparted to the honey, so that beekeepers will soon want to know where they are at. Another old time beekeeper informs me in all confidence, that if beekeepers only knew the value of the "Green Leek" parrot, he would never require to buy sugar to feed his bees for winter. The instructions are to shoot a quantity of said Green Leeks and roast them over the fire and hang one in front of each hive of bees that requires to be fed, and, presto! the bees proceed to lunch, and yet they say there is nothing new under the sun.

CRIMSON CLOVER.

Just a word for crimson clover. If you have a spare piece of ground plant it to crimson clover and just see how your horse and cow will lick it up. I have a trial plot and it grew two feet high and will stand frost and snow as well as heat. Plant early in the fall.

DENSE HONEY.

HOW I GOT IT OUT.

W. ABRAM.

I am under the obligation to thank you, Mr. Editor, also Messrs R H. Jervis, and C. C. for the interest shown to aid me and others in a fix. I had no doubt whatever but what someone or other, would as usual, have some advice to offer. Unfortunately for me I could not follow either advice and had to use my own discretion. As for your advice, Mr. Editor, it is no doubt an excellent one, but before I could get a machine out from England for this purpose, the season is gone. Mr. Jervis' information to wire frames and get an up-to-date extractor, can hardly be taken as serious, just as if I could wire frames when they are full of honey, or know which is the up-to-date extractor Mr. Jarvis refers to that would do the trick. And C. C. has evidently less sticky honey than I, as nothing below wax melting point would sling it out. Besides when the last A. B. B. arrived I had already taken what I conveniently could without too much interference with the brood. This is how I did it. I took from each hive three to six of the back combs in the brood chamber, freed them of bees, uncapped the honey, and extracted. This done I cut out all the comb that had yet honey in it and put the pieces into a big tub. Brood and frames I returned to the bees. After a good day's work I

had 40 to 50 lbs of extracted honey and about 170 lbs in the tub. This I put on the fire just at sundown and heated the stuff to boiling point, then filled it into a strong bag in my wax press and pressed it just as I press wax. The liquid that got through the bag voluntarily and by pressure run into another tub, where it remained till next morning when the wax had set on top of the honey and was taken off, and the honey filled into cans. I have near a ton of this honey. There is some more of that sort in the hives, but as some of the brood-containing combs were insufficiently secured to the frame to allow the top of the comb being cut out without breaking, I had to leave it in. It will not materially interfere with any future extracting. My wax press resembles a small wine press, and I made it ten years ago. If a means had been applicable to preserve the combs and to get the honey without having to boil it, there would have been considerable saving, but a renewal of combs has its advantage too. In the full size American frames I found more difficulty, as the brood would drop down if I cut the honey above away.

Towards the latter part of my tedious work the weather had been very dry, and as a result the boards of the extracting room dried together so much that the bees found space to squeeze through between the joints in many places and no sooner had I blocked up some passages when they found others and got in all the same. Then I darkened the room so that I could only see my way when I lifted the veil a bit, but some bees found their way in the dark to the honey, nevertheless. How I wished Sir John Lubbock had been here! What wonders it might have revealed! I shouted at the intruders, I even swore at them, may be, but they would not listen and stay away, nor fetch others along. But I opened a hybrid stock once and blew my breath at them very subtle and, lo! they heard that. Just try it for yourself and you will see. There's nothing like trying.

A few swarms issued just before Christmas. During the heat after Christmas many bees got their wings scorched and became useless. I noticed the same last year in January. Some blackbutt and mahogany are now in bloom.

PROVERBS FOR BEEMEN.

R. H. LONG.

LOOK! BE(E)-FORE YOU LEAP.

Young bee saw old bee float into a rose,
Slowly it gathered and slowly arose.
All in a frolic and fresh from the hive,
Young bee cried, "Fossil, Hi! just watch me dive."
Old worker waited, the youngster flew high
Right o'er the blossom far into the sky.
Then headlong thro' Heaven, it meteor-like flashed
Swift, swift as an arrow, down, down it crashed
By its momentum resistlessly borne,
And, missing the blossom, impaled on a thorn.
It died. The cause is very plain—
Concussion of (if any) brain.

THIS WOULD BRYANT 'A' MAZE"

R. H. LONG.

We strolled in my garden my beehives to see,
My friend filled his pipe, "Got a match?" he asked me.
I carelessly answered, "Yes, I have one here,"
And picked up a bee off a bloom that was near.
He held out his fingers, I pressed down the bee
The capers he cut were real funny to see.
"It's alight! it's alight! the head's off," he cried,
And I laughed till I got quite a pain in my side.

"What matches are those," he asked by and bye
"Oh, that was a sort of a wax one," says I.

He soon saw the joke and relished it so,
And grinning all over says, "I'll have a go,"
A neighbour dropped in, says my friend, "Have a smoke?"
And he picked up a bee for this practical joke.
"I've got a match" to the neighbour says he,
Caught hold of his hand and squeezed down the bee.
The neighbour stood still, not a move, not a groan,
For I'm blessed if my friend had'nt picked up a drone.

"What was up with that match," said my friend, by and bye,
"Oh, that's a non-poisonous safety," says I.

CRIMSON CLOVER.

This is a plant which has been very much recommended in America to be grown for the sake of the amount of honey it yields. We have great pleasure in giving the following account of it from the pen of Mr H. J. Rumsey, of Barber's Creek:—

Last year I called the attention of our farmers to the success that crimson clover had proved in America, and suggested that possibly it would be as successful in these colonies, and to induce a thorough trial of it, I sent out some of packets. The result has far exceeded my expectations, although not nearly so many as I would have liked sent in the results for publication. I tried it in various ways, and planted at different times from January to March, and have concluded that the best time to sow in this district (Barber's Creek) is during the first January rains—the plants then get a good start before the winter comes on. The seeds germinated very quickly, and soon sent a tap root right downwards, which continued to grow, so that I dug a root out in September measuring 18 inches in length, and it is probable that the finer fibres went down nearly as far again. At this time the tops were only two inches high, but in a couple of months or less from then they had shot out with from 20 to 40 stems 16 or 17 inches high; each plant topped with a beautiful crimson flower on which bees were humming all day long. At this stage I cut off some of the tops just above the ground and now they are about 8 or 9 inches high and the flowers are coming out on them. This second crop would, I think, have been as good as the first if there had been sufficient rain to feed it. The value of this crop to farmers and others can hardly be over-estimated. In America it has revolutionised the whole of the farming industry. To those who have to depend on artificial fertilizers for enriching their land it makes all the difference between success and failure; to those whose land is richer in the mineral portions of plant food but deficient in vegetable matter it is invaluable. This clover, in common with other clovers, and other descriptions of leguminosæ, such as peas and beans, has the power, which seems to us wonderful, of taking its nitrogen or a large portion of it from the air, which contains an inexhaustible store of it, and leaves a large quantity in the stubble and roots in a condition ready to be used by the following crop. It has a great advantage for this purpose in the fact of its growth being during the winter season, when the ground would be otherwise idle. It can be sown in corn after the last cultivation, or after early potatoes; a crop of hay taken in spring and the stubble ploughed in time for late potatoes or corn the next season. Its value as a fodder plant is considerable, as the hay, if cut when in flower, is one of the most valuable feeds known.

It should not be fed to horses after it has ripened its seed, as in that state it is said to do them injury.

In sowing it need not be planted too thickly as it is wonderful how it stood out. One farmer writes thus, "They can spread out like a bantam hen on a sitting of eggs." In September, perhaps, you will see about one plant to the square foot, and by the end of October the ground will be covered to the depth of a foot or more. I would mix about a pound of Swede turnip seed with ten pounds of crimson clover for an acre. I find this gives a good crop of turnips, which shelter the clover in its earlier stages. The best manure to apply is Sugar Co.'s No. 6 or a mixture of bone-dust and potash; wood ashes are valuable also for this crop. If a small quantity of any of these manures is sown at the time of planting it stimulates it so that the plant gets roots down quickly into the subsoil, where it finds a large amount of plant food that would be unavailable to shallow-rooting plants. Our bee-keepers should encourage the growth of crimson clover, as it is a large yielder of honey of superior quality. To enable as many as possible to get acquainted with this plant I will repeat my offer of last year, to send a small packet to any desirous of trying it, on receipt of address and two pence for postage.

BEES.

From Lubbock's "Bees, Ants and Wasps."
(Continued.)

THE COLOUR SENSE OF BEES.

The consideration of the causes which have led to the structure and colouring of flowers is one of the most fascinating parts of natural history. Most botanists are now agreed that insects, and especially bees, have played a very important part in the development of flowers. While in many plants, almost invariably with inconspicuous blossoms, the pollen is carried from flower to flower by the wind, in the case of almost all large and brightly coloured flowers this is effected by the agency of insects. In such flowers the colours, scent and honey, serve to attract insects, while the size and form are arranged in such a manner that the insects fertilise them with pollen brought from another plant.

There could, therefore, be little doubt that bees possess a sense of colour. Nevertheless I thought it would be desirable to prove this if possible by actual experiment, which had not yet been done. Accordingly, on July 12 I brought a bee to some honey which I placed on blue paper, and about three feet off I placed a similar quantity of honey on orange paper. After she had returned twice I transposed the papers; but she returned to the honey on the blue paper. After she had made three more visits, always to the blue paper, I transposed them again, and she again followed the colour, though the honey was left in the same place. The following day I was not able to watch her; but on the 14th, at—

7.29 a.m. she returned to honey on blue paper. At 7.31 she left.
7.44 ,, ,, ,, 7.41 ,,
7.56 ,, ,,

I then again transposed the papers. At 8.5 she returned to the old place, and was just going to alight, but observing the change of colours, without a moment's hesitation darted off to the blue. No one who saw her at that moment could have entertained the slightest doubt about her perceiving the difference between the two colours. At 8.9 she went·
8.13 she returned to the blue; at 8.16 she left
8.20 ,, ,, 8.23 ,,
8.26 ,, ,, 8.30 ,,

Transposed the colours again.

8.35 she returned to the blue; at 8.39 she left.
8.44 ,, ,, 8.47 ,,
8.50 ,, ,, 8.53 ,,

Transposed the colours again.

8.57 returned again to the blue; at 9.0 she left.
9.4 ,, ,, 9.7 ,,
9.12 ,, ,, 9.15 ,,
9.19 ,, ,, 9.22 ,,
9.25 ,, ,, 9.27 ,,
9.30 ,, ,, 9.34 ,,
9.40 ,, ,, 9.44 ,,
9.50 ,, ,, 9.55 ,,

Transposed the colours again.

10.2 returned again to the blue; at 10.6 she left.
10.10 ,, ,, 10.14 ,,
10.20 ,, ,, 10.25 ,,
10.30 ,, ,, 10.34 ,,
10.40 ,, ,, 10.44 ,,
10.48 ,, ,, 10.51 ,,
11.12 ,, ,, 11.14 ,,
11.21 ,, and flew about, having been disturbed.
11.26 ,, ,, 11.28 left.
11.36 ,, ,, 11.40 ,,
12.5 came and flew about, but did not settle till—
12.17 she returned again to blue; 12.17 went.
12.21 came and flew about.

Though it was a beautiful afternoon, she did not return any more that day.

On October 2nd I placed some honey on slips of glass resting on black, white, yellow, orange, green, blue, and red paper. A bee which was placed on the orange returned twenty times to that slip of glass, only once or twice visiting the others, though I moved the position and also the honey. The next morning again two or three bees paid twenty-one visits to the orange and yellow, and only four to all the other slips of glass. I then moved the glass, after which, out of thirty-two visits, twenty-two were to the orange and yellow. This was due, I believe, to the bee having been placed on the orange at the beginning of the experiment. I do not attribute it to any preference for the orange or yellow; indeed, I shall presently give reasons for considering that blue is the favourite colour of bees.

October 6.—I had ranged my colours in a line, with the blue at one end. It

was a cold morning, and only one bee came. She had been several times the preceding day, generally to the honey which was on the blue paper. This day also she came to the blue; I moved the blue gradually along the line one stage every half-hour, during which time she paid fifteen visits to the honey, in every case going to that which was on the blue paper.

Again, on September 13th at 11 a.m., I brought up a bee from one of my hives; at 11.40 she returned to honey which I had put on a slip of glass on green paper. She returned at 11.51. And again

At 12.1
,, 12.13
,, 12.22
,, 12.33
,, 12.46
,, 12.58

She returned at 1.12. This time she lost her way in the room.
She returned at 1.49
She returned at 2.1. This time she got stuck in the honey, and had to clean herself.
She returned at 2.25.
She returned at 2.40. I now put red paper instead of the green, and put the green paper with a similar quantity of honey on it a foot off.
She returned at 2.51 to the honey on green paper. I then gently moved the green paper, with the bee on it, back to the old spot. When the bee had gone, I put yellow paper where the green had been, and put the green again a foot off.
She returned at 3.0 to the honey on the yellow paper. I disturbed the bee, and she at once flew to the honey on the green paper; when she had gone, I put orange paper in the old place, and put the green paper about a foot off.
She returned at 3.10 to the honey on the green paper. I again gently moved the paper, with the bee on it, to the usual place; and when the bee had gone, put white paper in the old place, and put the green a foot off.
She returned at 3.20 to the honey on the green paper. I again gently moved the green paper, with the bee on it, to the old place; and when she had gone, replaced it by the blue paper, putting the green a foot off.
She returned at 3.30 to the honey on the green paper. I again repeated the same thing, putting yellow instead of blue.
She returned at 3.40 to the green paper. I now reversed the position of the yellow and green papers; but
She returned at 3.51 to green. After this
,, ,, 4. 6
,, ,, 4.15
,, ,, 4.28, when she left off for the day, nor were there any bees still working in the garden. The same afternoon a wasp, which I was observing, remained at work till 6.29 p.m.

August 20.—About noon I brought five bees to some honey at my window. They all soon returned, and numerous friends came with them. One of them I put to some honey on blue paper. She returned as follows, viz.:—

At 12.36	At 2.30
,, 12.42	,, 2.38
,, 12.53	,, 3. 2
,, 1.28	,, 3.10
,, 1.38	,, 3.22
,, 1.49	,, 3.50
,, 2. 2	,, 4. 4
,, 2.11	,, 4.14
,, 2.24	,, 4.23

when I left off watching and shut her out. The longer intervals are due to her having got some honey every now and then on her wings and legs, when she lost a little time in cleaning herself.

To be continued.

CAPPINGS.

From American and other Bee Journals.

London Purple (whatever that is) is recommended as a preventative of ants.

The Jennie Atchley Co., sent 85 dollars worth of queens from America to

Australia in one shipment alone during the past season.

A new use of honey has been discovered in France. Honey with cocoa makes a most delicious chocolate.

Every apiarist should see that his bees have access to salt in some form or other. If not they will procure it in undesirable places.

Gleanings says:—Those bee escapes. It is unaccountable how some beekeepers —good ones too—feel that that they can get along without them.

A Mr. Baldensperger, in the *Southland Queen*, says: Queens are fertilised in Palestine between 5 and 35 days after birth; indeed this is the longest record beaten. All other races are fertilized sooner.

Mrs. Sallie Sherman had a case where a caged queen was nicely cared for several days by just placing the cage at the entrance of a hive. The hive was not queenless either.

In answer to a series of questions issued by *Gleanings*, one, "What time of year do you secure the best price for your honey? the replies were all in favour of the fall and winter.

The plan of using splints instead of wires for foundation would seem to have been followed by by B. F. Averill for many years. He has a slot in top and bottom bars, corresponding to the thickness of splints to be used, ⅛in. wide, and ¼in. longer than the distance between top and bottom bars after the frames are nailed up. He used 2000 of such splints in 1885. He says these splints give better satisfaction than wires.

C. H. Dibbern uses a bee escape consisting of two boards hinged together. The upper board has six holes on the part near the front of the hive. The bees pass through them on to the lower board. As most beekeepers have their hives a little lower in front, the bees travel up the lower board through three sets of plain V shaped obstructions to six holes at the back part of the lower board, whence they emerge into the lower story. He claims it as being very effective. The editor of *Gleanings* seems still, however in favour of the Porter escape.

The Southland Queen, says:—The Carniolans must have credit for excellent work this fall. Our Italians are far behind at this season of the year. We have had the best flow of honey this fall for many years, but the Italians had almost stopped breeding, while the Holylands and Carniolans kept right on as though the season was beginning, and when the flow began this fall, they were in just the right shape to catch it; the Italians had put up for the winter. Some of our Holylands will store fifty pounds of surplus this fall, while the Italians will not store a pound.

E. E. Hasty, in the *Beekeepers' Review*, says: How awfully easy the brethren believe things which they want to believe! I'm talking now about the oft repeated nonsense that bees are *incapable* of cutting through the skins of grapes. The boys will be mad at me for my repeated scoldings on this point, but I'm going to scold all the same We had proof enough on the point before, had we only been willing to use it; but friend G. W. Demaree, in the *Canadian*, page 889, does a timely thing by presenting knock-down evidence. A sound grape was used to block a hole which bees were freshly nibbling in their enamelled quilt, and they cut into the grape very quickly. Next a wild plum was put on as a tougher job for them, and they cut that through also. A harvest apple was also cut into the same way.

L. A. Aspinall, in the *Beekeepers' Review*, says: If we recall the method of obtaining honey during the dark ages of beekeeping, one cause of degeneration will be apparent. In the autumn the heaviest and lightest colonies were consigned to the brimstone pit—the heaviest because their stores were in excess of the amount required for winter and spring use—the lightest, because of insufficient winter stores. Ordinarily colonies possessed of vigorous queens and consequently vigorous workers are such as accumulate the largest amount of honey;

and in those days of hap-hazard bee-keeping some of the very best, although late, swarms with young queens would fail to gather sufficient winter stores. By the practice of sacrificing the heaviest and lightest colonies, the best queens were destroyed and the inferior left to perpetuate the race, which is in contra-distinction to Nature's plan of the survival of the strongest. Then again the imperfect knowledge of wintering often caused a loss of the best of those that remained. The most populous and vigorous colonies are the ones most liable to smother by reason of an accumulation of dead bees at the entrance.

WORK AT MICHIGAN'S EXPERIMENTAL APIARY.

R. L. Taylor, apiarist, at the Michigan Experimental Apiary, in speaking of "Bees and Grapes," says:—Continued investigation convinced me that the skins of the different varieties of grapes crack in different ways, that is, some crack, so to speak, longitudinally; and some cross-wise, and that they also crack from a somewhat different combination of causes. These as I judge, are three; moisture from without, moisture from within, and external pressure. Moisture alone, in my experience, seldom cracking or, rather, I should say, causes it only to a small extent. Certain tender skinned varieties, as the Brighton, when the bunches hang in clusters so as to prevent the ready evaporation of moisture caused by frequent rains, suffer some, but, perhaps, rather from decay of the skin; and, apparently, the berries of any variety if they lie on the ground in a wet season or upon any other substance that retains moisture, cracks more or less. Other kinds, as the Lady, crack to a limited extent on account of moisture from within, that is from the superabundant flow of sap which takes place during a time of frequent heavy rains. But very much the larger part of cracking is caused by this unusual flow of sap in conjunction with the pressure of berries upon each other, that is, in the compact clusters. In some varieties, however, the grapes have a skin of such toughness or elasticity as to successfully resist these joint forces. The Ulster and the Niagara are of this character. I have never known these to crack, and the greatness of the force which the skin resists is seen in the fact that in these, and other varieties, as they grow here, it is not uncommon to find, before the ripening season begins, berries which have been pulled from the main stem of the cluster by the crowding force of their neighbours. Upon these grapes and others like them, in the characteristic mentioned above, I am satisfied the bees never work, unless the grapes are first broken by birds or otherwise—evidently not the work of bees. On the other hand, the Brighton is an example of a grape with a very tender skin, which nevertheless, never cracks here beyond an insignificant amount, owing to the fact, as I claim, that the clusters are as a rule, not very compact, and though it is a grape of the highest quality, with a very tender skin, the bees have no more success in gaining access to its juices than they have to those of the tough skinned Ulster. Of the more than thirty varieties I have in bearing the work of the bees has usually been confined almost entirely to the Deleware and the Lady, but, on account of the wetness of the season, the Duchess and the Selim must be added this year, and these are the ones also to which cracking is almost exclusively confined. In the point of compactness these kinds stand in the following order: Duchess, Lady, Deleware and Selim. Most of the clusters of the Duchess on strong vines are exceedingly compact, while those on young vines or those lacking in vigor are quite loose. The Lady has most of its fruit in compact clusters, which with its brittle skin, seldom fails to render it almost worthless here on account of its cracking. A fair share of Delewares are quite compact and from one-third to a

half of the Salems are only less so. The significant fact here is that the work of the bees was confined to the compact clusters while the loose clusters neither cracked nor were visited by bees.

In all these varieties except the Deleware the cracks, half an inch or more in length, were plainly visible and evidently the work of natural causes. As to the Deleware, one might say on a hasty examination that they do not crack, for the cracks are never in sight so long as the berries remain in the cluster, but an examination with some little care will show that they do crack transversely near the stem end of the berry. The Diamond grape is effected in a similar manner, when it cracks at all.

The line of thought and investigation of which the above is a rough outline convinced me that bees never injure grapes. Still the thought that many would not thus be convinced led me to seek some further test. Heretofore all manner of experiments have been made to induce, if possible, bees to break the skin of perfect grapes, such as placing the clusters in hives, confining bees with grapes, &c., from which only negative results were obtained. Entomologists have studied the mandibles of the bee and declared that they are so little adapted to the purpose of piercing the skin of a grape that it would be entirely impossible for a bee to use them with effect in that way. On many minds these arguments have little effect.

In July last the rainfall being so great that more than the usual amount of the cracking of grapes might be expected, so I decided to determine if possible whether grapes from which bees were excluded, but still left hanging upon the vines, suffered in any different degree from those to which the bees had free access. To shut out the bees, paper sacks were used. These were folded closely about the stems after being drawn over the clusters and fastened with common pins. A small slit was cut in the bottom of each sack to permit the escape of any water that might gain admittance. Upwards of 1000 sacks were put upon the thirteen varieties hereinafter mentioned. Many of these became ripe early in September and now (Sep. 24th) all are ripe expect Jefferson and Iona. As already intimated the damage was considerable, becoming evident even before maturity. The results will sufficiently appear from the following table.

	Amount of Damage.	
	In Bags.	Without Bags.
Agawam	none	none
Brighton	none	little
Deleware	much	less
Diamond	little	little
Duchess	much	less
Eaton	none	none
Eumelan	none	none
Iona	none	none
Jefferson	very little	very little
Lindley	none	none
Niagara	none	none
Salem	much	less
Ulster	none	none

In the case of the three kinds much injured, it became constantly more evident that the damage to those in the bags was greater than to those to which the bees had access. This was especially true of the Duchess and the Deleware. So evident was it that the reason of this lay in the fact that the juice oozing from cracked grapes in the bags was communicated to neighbouring grapes causing incipent decay, a weakness of skin and cracking where otherwise cracking would not have occurred, that by the middle of the month I hastened to remove the bags from these varieties that the bees might gather the juice from the broken grapes.

To my mind the conclusion is inevitable that not only do bees not injure grapes but that by gathering the juices of cracked ones they prevent decay and thereby the destruction of sound grapes.

For Honey Labels and every description of PRINTING send to A. BEE BULLETIN Office.

THE HONEY BEE.

(By Richard Helms, Biologist, Bureau of Agriculture, Western Australia.)

From the *Journal of the Bureau of Agriculture.*

A community of bees is variously termed a colony, swarm, and frequently also stock or hive. The two latter terms apply more correctly to the artificial dwellings of the bee, but by conventional habit of speech it is understood to mean a large assemblage of the insects as well. A colony is in reality a large family including many thousand members, most of which are sisters, and the offspring of the same mother. But periodically there are also male bees met with among them. This, however, only occurs when a desire arises in the family for a portion of it to migrate, which is commonly called swarming fever. Such migratory desire is much stimulated by a rapid increase, then, in order to avoid over-population, the necessity arises for a number to leave the hive and seek a new home. At such times males are provided for the fertilisation of the future mothers, which are still unhatched when the old one leaves with the swarm.

With the honey bee three distinct physiologically differentiated creatures are necessary to propagate the race. Still, only two sexes occur as with other animals. The vast number of bees seen constantly emerging from and entering the hive are neuters—an application objected to by many writers as not being strictly correct. These so-called neuters are the working masses of the community and in reality aborted females. Through some extraordinary influence acting upon the immature young, their sexual organs are atropied, instead of which some physical characteristics are developed in them, not possessed by the true sexes. Although the abortion of the sexual organs has made it impossible for these bees to be themselves reproductive, their maternal instinct is nowise diminished, and is, in fact, developed to an extraordinary degree. Were it not for their devoted attention to the young the community could not prosper.

The three different bees are generally known as the queen, drone, and worker. The queen is a perfect female as far as her sexual organs are concerned. The drone is in the same manner the male. The worker, or so-called neuter, is a sexually imperfectly developed female.

The queen, owing to her great laying power, is generally regarded as the most important member. It is true a fertile queen may soon increase the number of workers, and transform a weak into a prosperous colony, but still she could not have done this without having been first fertilised by the drone. Nor could the brood be reared without the help of the foster mothers, the workers. When it is considered how the different elements which constitute a colony, depend upon each other, and how their functions interact with one another, it becomes obvious that none deserve to be called the "most important." Without the one the other could not exist for long, only the male members may be dispensed with periodically, because their influence, when once manifested, is of extraordinary duration.

THE QUEEN.

The interesting member of a bee colony, now generally known as queen, before her sex was correctly recognised, was also called king or leader (Weisel or Weiser *Germ*). This, no doubt, arose because she appears singly among a great number of other bees and receives considerable attention from them. She is in reality the sister of the workers and drones, during the early part of her life, and later the mother of all who surround her. Her true position is that of mother bee, and her importance begins after she has been fertilised. The term king originated in antique times, when she was thought to be a male, and the supposition that she possessed monarchial power and influence gave rise to this name. In no sense, however, does she exert a monarchial power, nor can she be called

a leader, for she does not lead ; but on the contrary, is led entirely by her children. These well knowing that upon her depends the reproduction of their numbers, and consequently the future welfare of the family, tend to all her wants and display the greatest filial attachment towards her. A number of workers constantly surround her, and, according to the desire of greater or lesser increase, supply her more or less abundantly with food. Consternation seizes her off-springs should the mother be lost through death or accident. A young queen leaves the hive a few times on fine days to fly about in narrow circles for the purpose of getting acquainted with the surroundings, and then, under the desire to be mated, flies off one warm afternoon to meet a drone. She is generally successful in accomplishing her desire, and when she returns, after a marital embrace, she does not voluntarily leave the hive again. After coition her ovaries develop rapidly, and in a few days she begins to lay. The power of oviposition grows considerably for some time, and when it is at its height she may lay as many as 3,000 eggs daily. Considering that the average life of a queen is about three years and sometimes extends to over five, it is possible that she may lay several millions of eggs during her lifetime. She is one of the most prolific insects known. The laying of eggs is the important function of the queen.

THE DRONE.

The function of the males is solely that of fertilising young queens. The excessive number of drones always present in a colony during the summer has been a puzzle to naturalists and still more to beekeepers. By some they were considered defenders, others maintained that they assisted in keeping the brood warm, and others again believed them to be water carriers and that they also probably assisted in ventilating the hive. The fact, however, that they lack the defensive organ of the other bees—the sting—makes the drones quite harmless. And, as regards keeping the brood warm, this supposition falls to the ground because they appear mostly in summer, when the brood does not require to be constantly covered. During early spring when warmth is most needed in the hive they are generally not present, or only in the larval stage and require warmth themselves, and towards the autumn they are, as a rule, driven out and perish. Except when a colony should become queenless late in the season, the drones are spared, and may at times even be allowed to live through the winter. That part of their functions is to provide water or keep the hive ventilated is a mere supposition. In fact, when in the hive the drones do nothing but eat, most of the time allowing the workers to feed them. For what purpose then are so many as sometimes over two thousand, produced by a vigorous colony ? It is all important that the young queen should be fertilised soon after she becomes mature, and as the act of coition must take place while on the wing and at a considerable height in the air, it is necessary that there should be many drones available to ensure her meeting one when emerging on her wedding flight. But another still more important fact must be considered. When a young queen ventures on her wedding flight she will, as likely as not, meet one of her brothers, under natural conditions probably, as a rule. This might lead to a deterioration of the race were it not that in the competition for her possession the strongest and swiftest has the best chance to achieve his desire. To secure a prompt fertilisation and sexual selection, the large number of drones are provided. This view corresponds with the general laws of nature. The importance of the drone is enhanced by their number. Probably no more than one out of upwards of a thousand copulates, but then his virility may assert itself for upwards of five years.

THE WORKER.

The name given to the great mass of bees found in the hive, named "worker"

is perhaps the most correctly and justly applied. It is in no way misleading like that of queen, and not derived from a mere peculiarity as that of drone, because the male, owing to the much greater expanse of wings, hums much louder than the rest when flying. The worker has to do everything in the hive except reproduce the race. This they are unable to do owing to their aborted sexual organs which has suppressed their sexual desires without imparing their love for the young. The queen produces the young, but cannot rear them, and this the workers do with a zest that is without a parallel. They divide so to say with the real mother the labour and pleasures of maternal care. The welfare of their immature sisters absorbs their whole being. They toil incessantly for them, and sacrifice in fact, their lives for them in every sense of the word. Their work begins a few hours after leaving the cradle, and only ends with death. The first ten days or so they tend the larvae, seeing that everyone is supplied with the proper nutrition. For this they are best adapted during the early age of maturity, owing to some physiological characteristics. Whilst engaged in this duty they do not fly except for a short time daily round the hive, getting exercise (play) and at the same time making themselves acquainted with their environments. The sealing of the cells over the full grown larvae has next to be done, and those staying at home hang more or less thickly on the broad comb, to keep it warm. All insects being cold blooded warmth can only be created by them through continued agitation. The bees staying at home engaged in the before mentioned work are more particularly called nurses. Meantime the older bees, also called foragers, are busy bringing pollen and honey, which is stored in cells handy to the brood nest. These provisions are in several ways elaborated into food for the larvae. To liquify the honey and separate the agglutinated pollen grains considerable quantities of water are needed, which are brought to the hives as required. The feeding extends to the queen, who has to be provided with large quantities of a nitrogenous substance when she is laying. During her greatest fertility the weight of the eggs deposited per day amounts to more than three times that of the body of the queen. To enable her to balance this exhaustive process, she requires to be supplied with rapidly assimilable food. This the workers elaborate in their bodies and secrete in minute globules, through glands situated near the mouth. The constantly changing retinue which surrounds the queen when laying, escorts her for the purpose of supplying food to her. The addittion or diminution of food re-acts upon her laying power, and is entirely regulated by it. The drones also require to be fed with nitrogenous food, in order to stimulate their virility. The workers produce and supply this in the same way as with the larvæ and the queen. Another important duty is the building of the combs. Without these the young could not be reared nor food stored. When a swarm takes possession of a new home the first work is the construction of new combs, which sometimes proceeds with marvellous rapidity After a few weeks when young bees begin to crawl out, their cradles require to be cleaned out and thoroughly smoothed inside to receive another egg almost at once. When thousands mature daily many are kept busy with this work. Partly for protection against enemies as well as against draught, and to keep the light out, every chink and crack is plastered up. This is done by propolis, a resinous substance gathered specially for the purpose.

To be continued.

Mr. Prince, of Murrurundi, uses chalk very effectively in keeping ants from his extractor, &c. A drawn line of it the ants will not pass. But it must be renewed often.

QUESTIONS.

GEO. GASSON.

93,—Can anyone using the plaster mould explain why sometimes good foundation comes off it; at other times 90 per cent are cracked? I have kept the wax from 165 to 170 degrees

ALBERT A. CARTER.

94. How can I get my bees to work in the 1lb. sections. I have tried every way that is mentioned in the "A.B.C. of Bee Culture" and still I cannot get them to work. The bottom box is full of honey and brood.

J. WALLACE.

95. Does the white box show buds long before bursting into bloom?

MOLONG B.K.A.

96. Is the queen bee the ruler of the hive?

97. Is honey eaten in comb as wholesome as extracted honey?

MURRURUNDI.

98.—Does the inclination of the cells, when the comb is in the extractor make a difference in sending the honey out?

GEORGE JAMES.

85.—Let it alone.

86.—Place a few hives there and see how the bees do and if you get a crop of honey you will then know for certain.

91.—An all wire cloth cage 3in. x 3in. with the edges bent ½ or ¼ inch so as to stick in the comb, is the surest that I know of. Cage the queen over a little brood and honey and no attendants and allow the bees to release her and you will have the fewest failures, but don't go fooling round until the fifth day at least. I am sure most queens are lost through meddling with the bees too soon after they have a fresh queen introduced to them.

92.—Use them for kindling wood and buy new ones. It is the cheapest.

R. H. JERVIS.

94.—Something is wrong, bees not in condition, or not enough honey.

96.—No

97.—No

98.—Yes.

L. T. CHAMBERS, MELBOURNE, VICTORIA.

93.—The reason of cracking arises from uneven retention of heat, plaster being a poor conductor.

94.—Reduce brood nest to five frames, filling up with dummies.

95.—Don't know what "White Box," is. It's time we adopted better definitions.

96.—Pass.

97.—Pass.

98.—Very easily, proved that the bottom bar should lead.

T. BOLTON, DUNKELD, V.

85.—Stick to L frame if you must have a loose swinging set. If you alter at all reduce the depth to a Heddon size.

86.—The man who depends on this class of country for a livelihood from bees will not succeed in doing so. They are aids, but yield no heavy drops.

91.—My experience says the cage has little to do with it, a bit of foundation rolled round the finger and pinched at the ends to a wire cage are all equally valueless if queen is wild, or bees satisfied as they are.

98.—I think not; we used to observe this point in extracting, but since inverting has made our cells slope both ways it is immaterial which part of frame runs in advance.

JOHN SMITH, QUEENSLAND.

95.—Like all other gum trees, that depends on the season and rainfall.

96.—Virtually so; take her away, and then, as Hamlet or some other fellow sa d—There'll be a row in the State of Denmark until they get another Queen.

98.—A slight difference; depends a little also which way the comb is inserted in extractor, add a *good deal* on the *speed* to increase centrifugal force. Three bad seasons, low prices of honey, and adulteration of foreign honey, make it impossible to make bee-keeping a paying industry at present so I gave it all up a year ago and have since had no bees myself. Our children have a few hives under management of one of them. It would not pay to be entirely without bees, my experience being that a great deal more produce is got from fruit trees, and vegetables of the pumpkin and melon kind where bees are kept.

W. S. and H. J. WILSON, TEESDALE, VICTORIA.

85.—Would not think of altering, but if compelled to would go in for Heddon.

86.—This has not been answered by any in last month's issue. We have our Forest Apiary surrounded by Peppermint Eucalyptus, which affords a splendid honey of bright golden colour and of good consistency. Has the questioner tried whether the "miles and miles" in Gippsland are no good for honey producing?

87.—We have tried prussic acid in all strengths and never got paid for the trouble. No use whatever messing with prussic or any other acid for Foul Brood.

96.—No, certainly not.

97.—Honey just as wholesome. If the wax is swallowed, well, "that's a horse of a different colour.

98.—Yes, as the cells are built with an upward slant towards the top bar (i.e., from base to apex of cell) consequently the bottom bar should go first in the extractor.

QUESTIONS NEXT MONTH.

W. D. RUSSELL.

99.—What is your opinion as to the best method to adopt to sell our honey in England ?

100.—What do you think of sending a man to the large manufacturing centres of England to dispose of our honey through canvassing agents among factory operatives ?

101.—What will you give towards sending such a man ?

102.—What do you think about a delegate being sent from N. S. W. conference to Victorian conference, to arrange about sale of honey in England for both colonies ?

(This last can be varied to Victoria sending delegate to N. S. W.)

103—Have you any experience with solar extractors ?

THE PRICE OF HONEY

A few facts about the price of honey in different countries may be interesting, and may possibly lead to a little thinking on the question. Why is honey so cheap in some parts of Australia ? Who is to blame ?

At the recent North American Bee-keepers' Convention D. Mann said :—"I sell only extracted honey. I get 15 cents per single pound and 11½ cents by the gallon; never anything less. They are glad to get it. They know it is pure. I have educated them."

Per the *Canadian Bee Journal* we get the following :—

The British Bee Journal of October 22nd, 1896, has the following under the head of 'Special Prepaid Advertisements."

20 LB. of Beautiful HONEY, in tins or bottles, 9d per lb. Sample sent. MISS COOKE, Litcham, Swaffham, Norfolk.

VERY Fine Extracted HONEY, 6 cwt. FOR SALE, in 28 lb. tins, at £3 per cwt. Samples, 3d. WALKER, Belton Rectory, Doncaster.

NEW HONEY in bulk, from the Lincs B.K.A. Honey Depot. £3 per cwt Samples 3d. R. GODSON, Tothill, Alford, Lincs

CORRESPONDENCE.

L.D., Murrurundi, says: — Honey slackening off a bit. Have taken so far 585lbs from five hives.

M. McG., Lang's Creek, Burrowa, Jan. 11th, 1897.—Bees are doing well, but no surplus honey. Forest trees blossomed so heavy last year that they absolutely failed to blossom this year.

G.H., Bacchus Marsh, V—Our first honey flow is just about done (but which was a very good one for here), but we expect our regular honey flow, when we usually get the bulk of our surplus to start early next month, and which from present appearances will be a good one.

H. E. M., Keyneton, S. A.,—We are having a very good honey flow here at present. Best thanks for reply to questions. Dear Sir, does extracting honey from frames containing unsealed brood affect the brood in any way ?

We should think so. It throws it out with the honey. We never do such or advise others to do so.

F.W.P., Elsmore writes—I have extracted five tons, and expect from two to three tons more from 150 hives, and increased 50, mostly by dividing. Total 200, The yellow box has not been so good for honey this year as last, but has kept in bloom longer, I think through the sultry weather. I think honey will be coming in for another fortnight yet ; I don't see where we are going to get any more for the season.

W.E.B., Broadwater.—We are having a splendid honey season here. I am extracting now over a ton a week. There is a great fall in the price of honey. It requires some strong co-operation to keep the market steady. I am sticking for 3d, but wholesale firms are now offering only 2½d, with a 2½ per cent discount. The English co-operative delegates on their visit here seemed to think that our honeys were well worth 3d.

B. P., Inverell, Dec. 26th, 1896.—I have a large family and I do all that lay in my power to encourage them in bee culture. I used to do all correspondence once, but now we have over 90

hives and I have so much other business to attend to, I let my eldest son John have the management and do the correspondence, and I have every confidence that he will in a short time make money enough out of his share of the hives to remove to fresh fields and pastures new, and make room for the younger branches of the family.

G.S., Gisborne, N.Z., Dec. 19—Bees here are doing well so far, but owing to the dry weather, white clover is not yielding honey, and the bees are getting a very thick honey, which will not extract. I have in consequence to break up the combs, and refit the hives with foundation, which gives a great deal of trouble. We always have a certain amount of dark honey from cabbage trees and other bush plants in spring, but I never knew it to continue so long. With regard to purifying wax, sulphuric acid is the thing, but beware of using the wax for foundation given to a swarm, or an empty box next morning will be the result.

J.W.H.F, Casterton, Vic., Dec. 7th—There are no beekeepers in my immediate neighbourhood, and therefore no bee news. It is not for lack of honey, however, as hundreds of tons go to waste almost annuelly for want of gatherers. There is too much of the pioneer about this for me; I would like a few more to start here. My bees are doing well, but will not swarm, only about 7 per cent, and the few that have swarmed seemed disgusted with themselves for doing so; no trouble with after swarms. Never were like this before. My best hive has gathered so far 110lbs., with the others all above 80lbs. With a four months' flow in prospect would it be too much to expect one ton to six hives? Would Italian bees improve on this?

E.M.K., Milton—I have noticed in more than one work on bees that the writers have commented on the curious clustering of drones during their flight, without any apparent reason, no queen being discoverable. When moving last week I noticed one of these flights, and the swarm (if I may call it so) fell almost at my feet. As it descended I saw a bee fall from its midst, and thinking it to be a queen, I closely examined it, when I found that it was an ordinary worker. Round it the drones were flying in great excitement, but after a time they gradually dispersed, leaving the worker in the hay. The latter, after a short rest, also flew off. I feel certain that the drones mistook the worker bee for a queen, hence their clustering. It would be interesting to know if other beekeepers have observed the presence of the worker.

W. S. and H. J. Wilson, Victoria, Jan. 18th 1897.—Kindly allow us a small space in your next issue of the A. B. B. to thank Mr. J. Kerr for his generosity in forwarding us a packet of spider plant seed. We were anxious to try some, but could not get it here, so wrote asking Mr. Kerr for a little, which he kindly forwarded. We do not think that it would pay to plant a lot of ground with Spider Plant, or any other plant, solely for honey, but like to have a little of various plants, just for curiosity; besides, "every mickle makes a muckle," especially when brood-rearing is going on, and you require to get things in good condition for the season's flow. We also wish to thank you for sending our letter on to Mr. Kerr.

S.A.L., Footscray—Re Spider plant, which Mr Kerr sent me, I have been successful in raising this time, but the Simpson's I have not been so—have failed with it; but with regard to Bockara clover, that has grown to an enormous height. I have some in the garden, which I commenced to measure daily from the 11th day of December to the present day; it grew on an average an inch per day, and these are some of the measurements: Dec. 11, 4ft 8½in; Dec. 12, 4ft 11in; Dec. 31, 6ft 10⅝in; Jan. 5, 1897, 6ft 11⅝in; Jan. 6, 7 feet. It is in full blossom now, and very fine it is. Re bees, I have come to the conclusion that Footscray is not a suitable place for bees, as they are never likely to produce any surplus honey, and barely enough to maintain themselves. Foul

brood reduced my nine hives to ONE, which I was fortunate enough to detect it in time and cure it. I have bought one since. Trusting this year will be a prosperous one to all.

J.S., Grenfell—I have gained a great amount of information from the reading and study of the columns of the *Bulletin*, as I find although I have some good works on bee culture I would not have gained the many practical ideas which I have noticed from time to time in the A.B.B. from the pen of some able beekeepers, who are well able to instruct the amateur apiculturist in the care and culture of the honey bee. It is now about two years since I started beekeeping, and during that time here it has been very unfavourable seasons. Last year I extracted only about 150lbs from 15 colonies, on account of the dry season, being one of the worst experienced for many years. However, I lost six hives during the winter, leaving me now with nine colonies and one new swarm only this season. There were no swarms last sea season whatever. The box and yellow box are in bloom, but owing to the dry weather there is little or no nectar, but we are having some nice rain here to-day, which will do a great deal in refreshing the blooms and producing nectar.

W. S. and H. J. Wilson, Teesdale, Vic.—As there are only a few months between now and May (when the Victorian Convention is likely to be held) I should like to suggest to you the desirability of inviting discussion in the A. B. B. on the subject of Foul Brood. This should be taken up strongly by us Victorians and although a few amongst us are dead against troubling with this disease, I fancy the majority wish something to be done. I for one, intend to be on the warpath, and hope to be on backed up by the various Associations and individual beekeepers in this colony. At our last conference, I brought the Foul Brood question forward, but it was dealt with in a very lukewarm fashion, but judging from the numerous paragraphs in your late issues, I fancy a ferment is starting and which I hope to see at its top by the time the Convention comes round. Foul Brood is evidently on the increase in this colony, and what we should aim at is a Foul Brood Act of some sort and suggestions should be sent for publication in the A. B. B. from all interested. Scab disease among sheep was eradicated by united action. Let beekeepers take a lesson and "do" for Foul Brood. Hoping to hear more of this from beekeepers whether infected or not.

W.G., Campbelltown, Dec. 28th—My bees are doing very well at the present time; they are gathering honey from the prickly tea tree and apple tree. This season seems to promise well—the grey gum and the red gum and bloodwood are coming in bud. There was a disease appeared in an apiary situated four miles from Campbelltown about this time last year. The young brood turned black, and would die two or three days before hatched out. The bee would be perfect; it would seem to wither away, and the old bees would tear the cells down and carry the young bees out. Some of the cells would be capped, and others would not. This kept on for about four months, and till the rain came, when the disease would gradually disappear. There was about three-fourths of the brood died. I should like to know if any other beekeepers heard of such a disease. As soon as the rain came there was another disease appeared in the young brood —this was quite different. It was near approaching foul brood, but it did not go such a dark coffee colour, and it was not ropey. When the brood was about seven or nine days old, the grub would stretch itself along the bottom of the cell, and would die. It would turn slightly a dark colour, and would gradually dry up. Not in any case was the cells capped. This kept on for about two weeks, and there was not a young bee hatched out in the hives. The bees cleaned all the dead brood out, and the disease disappeared in the same way as it came.

T. Bolton, Vic.—Sir,—I'permit me to remind Mr Ballinger that the Querist said nothing about any other work save extracting, and I still maintain that 73 is far too much for this service. To practically manage and direct an apiary and then extract the honey when it comes is quite another thing and if the person so doing has to risk a crop failure and getting no pay for his services as well as the bee-owner I should say it was fair enough for the latter anyhow. If I could get good men to work on those terms instead of hard cash—crop or no crop—I would run a few more apiaries, I fancy. But many outside issues affect a fair arrangement and would need consideration in any specific case being adjusted. Re Mr. Jervis' advice to Mr. Abrahams —it sounds odd for an old veteran to be so instructed—perhaps our oldest and most experienced master in the colonies. There *is* honey that our "up-to-date" extractors will not shift satisfactorily; but in this predicament once I found if the combs were run through the machine and put back the bees seemed to re-store the honey with fresher honey of a different sort, and the next time we got them clean; so I suggest to Mr. A., if he still has those combs, to disturb the honey in them and return to the bees when next bloom is going on.

J.B., Wodonga, Victoria, 8th Jan.—Dear Sir,—Please find enclosed amount 5s., being amount due to June, 1897. Many thanks for your valuable little bee instructor. I felt rather amused and pleased when I received your *Bee Bulletin* every month without ordering it. I am scarcely known as a beekeeper, and yet I was known to you. I think you are up to your business, and to the best interest of the beekeepers and to the colony at large, to be kept in touch with the best experience of beekeepers in the colony; and to get it every month for 5s per year is a great help to the beginner and experienced. I am only an infant in the line, only having 75 swarms, but I keep them strong. I find that it is not numbers that means success, it is strength. Up to the present time I have done nothing. The yellow box was out for about three weeks. I got twenty 60lb tins. The honey is very good Before I got your *B.B.* I made a particular study of Root, and my opinion is if we don't love the little bee and keep pace with the times we must go to the wall. At times I think with all your endeavours it is a failure, and even now I would not think of trying it alone, with foul brood and springdwindling. The troublein swarming time, when your bees are in good order and bringing you in a profit, out they go with the best managed If queen's wings are chopped it is a great help, but fancy the bees, from two up to ten swarms, rushing into two or three swarms. With your extra queens in cages it is all in Root and *A.B.B.* to manage it, but try one year, and a bad season at that, and if your honey-house is not good and your bees not pure, look out.

T.W., Inglewood, 14/1/97.—I see by the *B B.* that several of your subscribers are annoyed with ants. Well, I can sympathise with them, for until lately I never thought the ants could be so troublesome. If I give you my experience it may interest some of your readers, especially as I have at last mastered them, or at least I think I have. When I removed into Inglewood about nine months ago, my neighbors informed me that the ants here would drive the bees away unless I took special means to prevent them. (I may here mention that I use the Heddon stand and keep Cypro-Italians). I told them the ants never troubled me in other places to any great extent, and I was quite sure they could not drive out a good strong colony of Cypro Italians. I placed the hives on the ground as usual, and all went well during the winter, but as summer set in my trouble began. The ground soon appeared alive with little black ants, as vicious as bull dogs, and once they start to rob a hive the strongest colony has not a chance with them. Of course the bees will fight and carry the ants away, but where they take one off one hundred or more come to take its place. Several of them hang on to each bee, and they are

too small for the bees to sting. I feel sure they would either drive out or kill the strongest colony of bees ever known within twenty-four hours from the time they first started to rob. I first tried a mixture of grease, tar and kerosene around the bottom stand; that kept them off for a few hours, but that took up too much time. I then tried putting the hive on a stand with legs in tins containing water and kerosene. This proved a trap for bees, so I gave it up. I then endeavoured to poison them; here I had trouble to get them to take any sort of sweets, poisoned or not poisoned. I then put some arsenic on liver; they took this better than anything else. I managed to check them a little but could not clear them out, however it helps to keep them down. I then experimented with ale bottles. I drove four in the ground, neck downwards, and placed a hive on top; this checked them for a few days, but I soon found out that the ants could run up any bottle, keep it as clean as you like. I then rubbed pipe-clay on the bottles; this stopped them completely, but when rain comes it washes off, so I had some galvanised iron tins made, five inches in diameter and five inches deep, with bottom on, but no top. I get them made by our local tinsmith for one shilling and nine pence per doz. I place these over the bottles, being careful to keep a clear space between the bottle and tins all around, so the ants have to go up the bottles and down the tins on the inside and up again on the outside before entering the hive. The tins keep the pipe-clay dry for a considerable time. I always keep a sharp look-out, and if I find the ants interfering with the bees (as they will do if the pipe-clay wears off) I lift the hive off the bottles, rub pipe-clay on them, and inside the tin, replace the hive, and that colony is safe for a month at least. The pipe-clay must be kept in a dry place, if it is the slightest bit damp when put on the ants will gain a foothold. I suppose chalk or whiting would answer the purpose, but pipe-clay is very much cheaper, and I believe it is the best. This makes an everlasting stand, as the bottles will not rot and the tins will not rust. I have a few 2lb. tins with lever tops, containing poisoned sweets, etc., which I place on the ants trail; this helps to get rid of some of them. I punch a few holes in the tins near the top so as the ants can enter, but small enough to keep bees out. Mr. Bolton writes on page 170, October number *A.B.B.* (after thanking "Loyalstone for his excellent articles) may someone now write a similar series on "How to make a profit out of them," or say "Short Cuts and Dodges." Now, Mr Editor, I beg to propose, and I am sure there are many seconders, that Mr Bolton leads off and follows "Loyalstone's" good example. He is, without doubt, up-to-date in all his appliances and I feel confident there are few bee-keepers in Australia better able to give practical advice on "How to make money out of bees" than the gentleman referred to.

[We feel assured Mr. Bolton will oblige; the beekeeping fraternity will thoroughly appreciate his labour.]

E. E. B., Cessnock, January 16th.—Bees here have been doing very well so far on ti-tree and ironbark, as far as I could learn and see. This has been a favourable season for bees on the Hawkesbury. I had paralysis early in the season in three hives, but placed a quantity of sulphur on the alighting boards (intending also to place some in the hive but a few days rainy weather prevented me from opening the hives. When fine weather came, the bees were alright and no trace of paralysis since.

The subscription is only 5s 6d per year, in advance. Send it along friends.

Intercolonial postage stamps are not negotiable in New South Wales. Will our friends please send us postal notes instead.

Pain's Queen or Cooper's Sheep Dip Powder, scattered round an ant hill is said to be a certain destruction to them. The powder sticks to their feet, and as hey are extremely cleanly they lick the poison off and die. They are then eaten bytheir mates who die also.

FROM VICTORIA.

BEEKEEPERS in Victoria, or any of the Colonies, Tasmania and New Zealand, I can supply you with **QUEENS THAT ARE UNSURPASSED IN QUALITY**. I GUARANTEE SAFE ARRIVAL and SATISFACTION at the following prices, viz.:—

Untested	one 5/-;	three 13/-;	five 20/-
Tested	,, 8/-;	22/6;	,, 35/-
Selectet-tested ..	,, 15/-;	40/-;	,, 60/-

Extra-selected-tested, THE VERY BEST, 25/- each.

I procure fresh breeding Queens every season from different places, so as not to inbreed (a great factor I think in preventing foul brood) and had two (out of a number) arrived safely from America by last mail, and another expected from Italy shortly.

A TRIAL SOLICITED.

JAS. McFARLANE, LYNDHURST VIC.

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Fo the Farm, Garden, Orchard, Poultry, Bees and other Interests of the Country and Suburban Home.

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HAVING removed from Moss Vale to Binalong and being a more suitable place fo QUEEN REARING, which I intend to carry on ina very large scale, (my breed is already well known), I am breeding

GOLDENS & LEATHERS

I will have some hundreds ready in October Hoping to hear from any customers at an early date. My prices are in the reach of everyone Write for price list.

J. M. WALLACE,

FITZROY APIARY,

BINALONG.

EXCHANGE COLUMN

It has been suggested to us that we should have an Exchange Column of advertisements. That is those who have any articles they do not at present need would be willing to exchange them for other articles that others may also not at present need. We will put advertisements of such in for 2/- cash, for instance :—

WANTED to exchange a Ritche Foundation Press, for two hives of bees in Langstroth hives.

Apply.—
W. X.,
A. B. B., Office.

WANTED a second-hand Novice Extractor. Will give Honey in exchange.

J. S. LEVESQUE,
Grassdale,
via Coolama.

WANTED.—Two tons of honey in exchange for queens. Now is your chance. 3½ allowed for orders of £2; 3¾d for £3; and for orders £3, sample with order.

R. H. JERVIS.

FOR

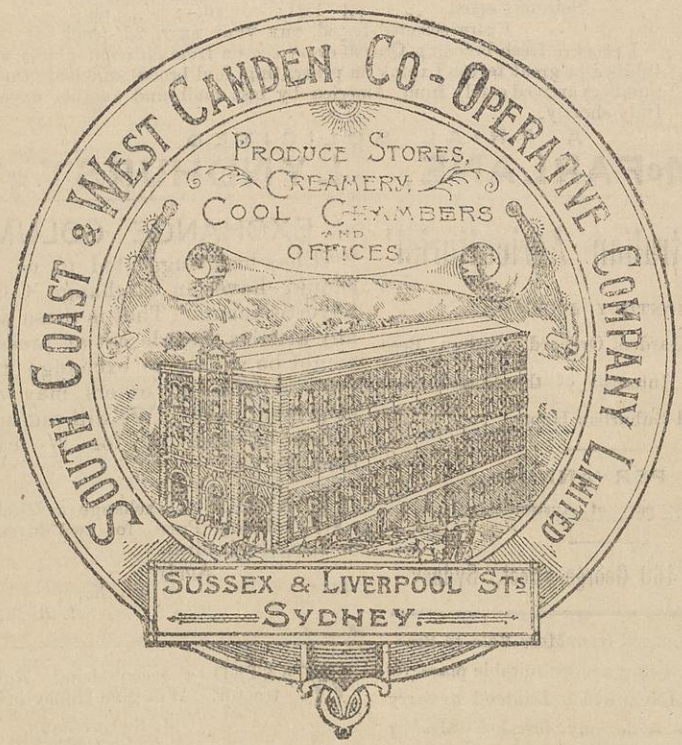
HONEY LABELS,

EVERY DESCRIPTION OF PRINTING

SEND TO

"Bee Bulletin" Office.

Honey Sales a Specialty



Produce & Live Stock Salesmen

SALES OF DAIRY PRODUCE, HONEY, &c., AT OUR WAREHOUSE DAILY.

FARM PRODUCE BY AUCTION AT REDFERN & DARLING HARBOR.

LIVE STOCK SALES AT CORPORATION YARDS.

A Big Honey Crop.

Is what all Beekeepers want, and to get it you must have good Queens. Upon no other one thing does the honey part of the apiary depend as it does upon the Queen. With a poor Queen, one that you must coax for eggs, your crop will be a failure. We all want good prolific Queens, whose bees are good workers and gentle to handle. After years of experience and constant importations I have succeeded in getting a strain of bees equal to any obtainable. The very best imported mothers only are used, and for industry, gentleness and beauty their bees are unsurpassed. I have a splendid lot of drones, and mismated queens are rare. 95 per cent. of my Queens proved purely mated last season. You can have your choice, either Leather or Golden.

	1	3	5	10
Untested Queens ..	5/-	13/-	20/-	39/-
Tested Queens ..	8/-	22/-	35/-	65/-

Select Tested (Breeder) 1 for 15/-, 2 for 27/6

Honey or Beeswax will be taken in payment (if preferred) for all orders of 10s. and upwards. Safe arrival guaranteed to any Post Office in the Australasian Colonies.

A. A. ROBERTS,

Rosebud Apiary, MUSWELLBROOK, N.S.W.

The New Zealand Farmer.

READ THIS POPULAR AGRICULTURAL JOURNAL.

It is practically the hand book of the New Zealand Agriculturist.

It keeps abreast of every enterprising farmer's daily requirements, enabling him to utilise all modern advantages within his reach.

The subjects dealt with cover the whole field of Agricultural, Pastoral, and Horticultural pursuits, and the legislation affecting these several industries. Its columns contain thoroughly practical as well as scientific information upon all branches of Farm Practice, Tillage, and the Cultivation of Crops, Stock Breeding, and Managemedt of Cattle, Horses, Sheep and Pigs, in health and disease ; Dairy Methods upon improved modern lines ; Fruit Growing, including the Suppression of Orchard Pests ; Poultry Rearing, Special Industries, etc., etc., besides critical Reports of Shows and Market Quotations from every farming centre in the colony.

The "New Zealand Farmer" is the only paper in the colony wholly devoted to the interests of Farmers, Wool Growers, and Orchardists.

Subscription: Per annum, 12s 6d, posted in advance, 10s.

Send your Subscription through any Stationer or direct to the

PUBLISHING OFFICE, FORT-ST., AUCKLAND

First Prize
COMB FOUNDATION.

SIXPENCE PER POUND.

Beekeepers may get their Foundation as above on sending their Wax to us direct, carriage paid. We will make it up for them at the price stated, and take either Cash or Wax, at market price, in payment. We have never advertised this line of our business before, because we have previously supplied the leading distributing houses in the colony. We are the original Comb Foundation Makers in the colony, and our trade was learnt with leading makers in England. We manufactured over three tons of Foundation last season. Our system is the same as followed out in England, and our Foundation requires less wiring than others.

W. T. SEABROOK & CO.

Orange Blossom Bee Farm, St. Ives, Gordon, N.S.W.

TO BEEKEEPERS.

AMERICAN Dove-tailed 8 and 10 frame Beehives and all appliances kept in stock and to arrive during the season—from Root's and other leading manufactories.

JOHN PEASE,

8, 9 and 10, Newtown Road,

DARLINGTON, SYDNEY,

IMPORTER OF

English and American Beekeepers' Supplies.

Indents executed on Reasonable Terms.

BEEKEEPERS!

SERVE your own interests in placing all your orders for Queens, Stock Hives, and all kinds of Bee Goods with me, the Most Experienced and Reliable Beekeeper in Australia.

ITALIAN QUEENS:

Untested	5/- each
Tested Pure	15/- ,,
Choice Breeding	30/- ,,

On a number of Queens special quotations.

ADDRESS:

W. ABRAM.

ITALIAN BEE FARM,

Beecrott, nr. Sydney, N.S.W.

DON'T YOU SEE? That to reduce the time spent at each hive means increase of profit. This is why you should have Cypro-Italian Bees. They can be more rapidly handled than Pure Italians or Pure Blacks. They will keep you busy—but at the extractor, They winter well, are hardy, prolific and handsome. If you have them you can run out-apiaries with comfort during "swarming," visiting once in nine days.

Autumn Prices—Untested, 4s; tested, 6s; select tested, 12s 6d; Post Free.

"I am so satisfied with your Cypro-Italian queens that I am intending to supersede all my black queens with them. They are a great aid against foul brood, very energetic, do not boil over and take wing like blacks."—W.L.D., Tooan E.

"I am highly pleased with the two queens you sent me last year; they are good honey gatherers, and keep strong colonies.—E.C., Lilliput, Victoria.

T. BOLTON,

Grampian Apiaries, Dunkeld, Vic.

The Australian Pastoralist,

AND BREEDERS' GAZETTE.

PUBLISHED MONTHLY.

Price, 3s Per Annum.

Contains all the leading Pastoral Intelligence.

Address Orders—

P.O., Woolloongabba,

BRISBANE, QUEENSLAND.

TO BE

OR

NOT TO BE!

High Prices or Low?

The Dear Shops or the Cheap?

A Lot for your Money or a Little?

CHOOSE!

Send your Orders to

ANTHONY HORDERN AND SONS,

Universal Providers,

HAYMARKET ONLY, SYDNEY.

QUEENS 3s. EACH.

Untested 5-Banded, Cyprian, Carni. and Ligurians, ..	3 for 7/6
Tested 5-Banded Golden and Ligurian	6/- each
Selected Tested Breeders	10/6 each

I can give special value in selected breeders, having near 200 to select from. If not satisfactory will change them.

E. J., Yarrawonga, writes: "The Cyprian queen to hand. I prefer them as my bees have a long way to fly, and they seem to fly further than Italians, anyway they gather more."

I have a limited quantity of foundation while it lasts, 5lb., 1/8; 20lb., 1/6; special quotation for cwt.

R. H. JERVIS,

WREKIN APIARY, MOSS VALE.

TO BEEKEEPERS.

STUDY your own interests by purchasing your Queens where you can be served fairly and faithfully. I can give you Quality and Cheapness combined, and a guarantee that no other Queen Breeder is giving, viz.: I guarantee that four out of five of my Untested Queens will prove purely mated. I sent out hundreds of Queens last season with this guarantee, and had no complaints, and can do so again, because I do not live in a town where BLACK bees are always kept. I have my locality under my control, and therefore have nothing but best Italian Drones for mating purposes. All TESTED Queens are thoroughly tried for the honey-gathering qualities of their progeny, as well as for evenness of colour, &c. I obtain tons of honey every year, and am thus enabled to prove them to be good and reliable.

MY IMPORTED QUEENS ARE TO HAND, and the Young Queens this Season are all that can be desired. I have sent out hundreds already all over the Colonies and Testimonials are continually arriving. Some customers have had 12, 18 and 24 untested Queens and word is to hand from them of everyone proving purely mated. Six of these queens with the guarantee I give, are the Cheapest Well Bred Queens in the market.

When sending order make P.O. Orders payable at Scone, or Postal Notes to my address—

A. J. BROWN,

LEAFORD APIARY, PARKVILLE.

The Largest Prizewinner for past year in the Northern Districts, and the first to introduce letter writing by bees.

Winner of over 50 Prizes for Italian Bees and their product at Maitland, Singleton, Muswellbrook, Tamworth and Narrabri Shows.

1896. PRICE LIST 1897.

BEE HIVES AND SUPPLIES.

All previous Lists Cancelled.

For Full Description see Catalogue.

Page			
3	No. 1	Bee Keepers' Outfits ..	56/-
,,	1A	,, ,, ..	60/-
,,	1B	,, ,, ..	60/-
,,	2	,, ,, ..	60/-
,,	2A	,, ,, ..	66/-
,,	2B	,, ,, ..	66/-
,,	3	,, ,, ..	126/-
,,	3A	,, ,, ..	135/-
,,	3B	,, ,, ..	135/-
,,	4	,, ,, ..	130/-
,,	4A	,, ,, ..	140/-
,,	4B	,, ,, ..	140/-

7 HIVES.

NOTE.—Contents of our Hives (Comb Nails, &c., supplied.)

	Nailed up.	In pieces Crates of		
	1	5	10	20
No. 1, 8-Frame, Dovetailed ..	6/-	each —	each 4/9	each 4/8
,, 2 ,, ..	8/-	6/6	6/3	6/-
,, 2A ,, ..	8/-	6/6	6/3	6/-
,, 3 ,, ..	8/-	7/-	6/10	6/9
,, 1, 10-Frame, Dovetailed.	7/-	—	5/9	5/6
,, 2 ,, ..	9/-	7/6	7/3	7/-
,, 2A ,, ..	9/-	7/6	7/3	7/-
,, 3 ,, ..	10/-	9/-	8/9	8/6
,, 1, 10-Frame Simplicity ...	7/-	6/-	5/9	5/6
,, 2 ,, ..	9/-	7/6	7/3	7/-
,, 2A ,, ..	9/-	7/6	7/3	7/-
,, 3 ,, ..	10/-	9/-	8/9	8/6
Hives, "Heddon," 4-story ..	12or	10/6	10/-	9/6
Hive Stands (8-Frame, D H)				1/- each
Observatory Hives (Single Frame)				4/- each

DISCOUNTS.

Under £2, nett; £2 to £5, 2½ p.c.; £5 to £10, 5 p.c.; £10 to £20, 7½ p.c.; £20 and over, 10 p.c.

HIVE PARTS.

Page		Each	FOR 6	12
9	Eight-Frame Hives—			
	Bottom Board ..	9d	8d	7½d ea
	Flat Covers	1/-	11d	10d ,,
	Higginsville Covers ..	1/-	11d	10d ,,
	Gable (ventil't'd Covers	1/3	1/1	1/- ,,
	Full depth body (empty	2/3	2/-	1/10 ,,
	½ Bodies or supers ,,	1/-	11d	10d ,,
	Division Boards ..	4d	3½d	3d ,,
	Followers and Wedges	3d	—	2d ,,
	Ten-Frame Hives—			
	Bottom Boards ..	1/-	11d	10d ..
	Flat Covers	1/-	11d	10d ..
	Higginsv lle Covers ..	1/-	11d	10d ..
	Full depth bodies (em'ty	2/6	2/3	2/- ,,
	½ Bodies or supers ,,	1/6	1/5	1/4 ,,
	Division Boards ..	4d	3½d	3d ,,
	Followers and Wedges	3d	—	2d ..
	Simplicity Hives—			
	Bottom Board ..	1/-	11d	10½d,,
	Flat Covers	1/-	11d	10½d,,
	Full depth bodies (empty	3/-	2/9	2/6 ,,
	Half ,, ,,	2/-	1/1	1/9 ,,
	T Supers or Sect. Crates	1/-	10d	9d ,,
	T Tins for ,, ,,	—	—	9d dz
	Alighting Boards ..	4d	3½d	3d ea
	Enamel Sheets ..	6d	5d	4½ d,,
	Metal Rabbets ..	—	—	9d dz

Our Frames and Sections fit all the above mentioned Hives, see page 11.

FRAMES.

		Per 100	500	1000
11	Allwood	7/6	35/-	67/6
	Thick-Top	9/6	45/-	85/-
	Hoffmann (self-spacing)	12/-	57/6	110/-
	,, ,, shallow	8/6	40/-	75/-
	Allwood (shallow) ..	7/6	35/-	67/6

HEBBLEWHITE & CO., 377 George-street, Sydney.