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THE AUSTRALIAN BEE BULLETIN.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

VOL. 5. NO. 6. SEPTEMBER 24, 1896. PER COPY, 6d

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The Australian Bee Bulletin

A JOURNAL DEVOTED TO BEEKEEPING.

MAITLAND, N.S.W.—SEPT. 24, 1896.

MR. Bennett, on page 132, is severe on the editor, about that eucalyptus flavour. Our opinion is there is too much sending the honey to London for opinions. When some samples of Mr. J. E. Taylor's honey was sent some eighteen months ago to London, the Agent General of N.S.W simply referred it to the buyers for the army and navy or the Grocer's Company—people that are pestered with English honey producers as well as from all other parts of the world. It would be ridiculous to expect such people as our late visitor, Mr. Jones, to give our honey a good name. They want to buy everything they can as cheap as they can, and it is their business to run down everything submitted to them. What we want to do with our surplus honey—we had none last year, and will we have any this?—is to start an establishment for the sale of our honey in some of the many large centres of population besides London. Such started, with respectable agents or business men, and a guarantee of the constancy of supply, would dispose of more Australian honey at a good price than any of these wholesale buyers. Is it not also a fact, if an article from a certain country has a boom—whether honey, butter, or meat, any of good quality,—no matter where from, is given the name of the country that has the boom? Also, any inferior stuff, from the country with the best reputation, is put down as coming from the country with the bad reputation. *Vide*, is it not likely that our best honey would be palmed off as best English, while poor English would be put down as Australian Eucalyptus? Read that communication of Mr. Gale on page 151.

Mr. H. L. Jones, of Goodna, Queensland, reports his bees as doing splendid

Honey is now coming in fast in the neighbourhood of Musclebrook, N.S.W.

At the rear of Messrs. Campbell's stores, Musclebrook, is a large English oak tree, on which the bees were recently literally swarming.

Errata.—Page 125, August number, 9th line from bottom should read "horses" instead of "heroes." In last line the words "term in" should come before the word "disfavor."

Those who have not a stock of old combs should now go in for full sheets of foundation. Either of them save a lot of labour to the bees in making new combs, and help the colony to grow strong more quickly.

Mr Paul, of Musclebrook, has a small stream of water running down a cemented drain, in which is a quantity of charcoal. Bees are constantly alighting on the charcoal, through which they suck the water, but not on the sides or dirt that may be in the drain.

During the present month look out well for the moths. They, as well as the bees are now depositing their eggs, and where they get a foothold in a hive, either through the weakness in numbers or the want of energy of the bees, or the carlessness of the apiarist, be assured that hive is doomed.

Look out and remove all drone comb, except in one or two of your very best hives. A few hundred drones in a hive takes a lot of honey and bee labour to rear, and when reared consume a lot of honey that would otherwise help the colony to grow or add to the pocket of the apiarist.

Should any hives be queenless, it will pay you to send away at once and get laying queens. Every day without a queen at this time of year, means no brood being raised to replace the old bees dying off,—less bees to gather the honey when it comes. It will take you too long to rear a queen if you have not one. By the time she is laying the colony will be pretty well thinned down and useless.

We have found the advantages of those Bordman feeders during some late cold and stormy weather. We knew certain hives must be running short of food, but there was no chance of overhauling them to see. A Bordman feeder at the entrance saved a lot of anxiety.

That Englishman Jones would not give *his* opinion of Australian honey. His companions might do so, but he, the business man of the three, was too cunning. He came to see what could be bought, and at what price. It was not his business to give us a good opinion of our honey.

We have been given to understand that a forest reserve at Bishops Bridge, near Maitland, the timber has been ruthlessly cleared away; large contracts for such being supplied, without any government supervision or charge of any kind. Some few years ago a reserve at Paterson, specially reserved for supplying railway sleeepers, was entirely stripped of timber in the same way.

In a month or two's time there will be plenty of New South Wales honey coming in, and among the things that will keep its price down, will be tons of adulterated stuff. The government have promised a bill against such, but we hear nothing about it now, and with what heart can the committee of the N. B. K. A. go to the Government to urge on the same or anything else after the way they have been undermined in Government confidence by some beekeepers themselves.

We know the season has been very bad, and many have been discouraged, but with the fine weather now ruling that hope that

"Springs eternal in the human breast"

should certainly bud a bit now. We have a little of it, but would surely have more if a little more overdue cash was coming in. We do our best to help you by the information we gather and give. Now do send your arrears along. We really want them.

Some well written "Experiences" from Teesdale, Vic., unavoidably held over till our next.

Mr. Burke, Loyalstone, reports splendid rains just now. Blue gum is out in blossom, also wattle. Yellow box will be out a little later.

The "Drone," in a late number of the Victorian *Australasian*, says:— "The drought has at last broken, and at a most favourable time for the bees. The wattle blooms that were out had been thoroughly exploited by the workers, and the welcome rain that fell will give a slight honey flow from orchard trees, and wild flowers, now blooming. The supply, though it must of necessity be small, will be of immense value to the colonies. Reports from all sides show the dreadful losses sustained by beekeepers, owing to the bad season. Even fed bees are dying out, and many apiaries will lose a third, some perhaps even more. Spring dwindling and bee paralysis are prevalent, and even the apiaries least affected will have to lessen their numbers by amalgamating hives too weak to exist alone."

QUESTIONS.

H. H. DAVEY, MELBOURNE (VIC.)

71.—What do you think of the Eucalyptus qualities of honey from the Eucalyptus trees? Does not the tree give the flavour, and if so has it not the quality?

72.—What do you think of a united exportation of honey with the one brand 'AUSTRALIAN EUCALYPTAL HONEY.' Will you make *one* for a try.

73.—What position do red and white gum honey take as to quality?

74.-Is one-third a fair thing to do the extracting for other people, or is it too much (that is for doing from 20 to 50 hives, one tin out of every three to come to me for extracting)?

75.—Are Italians or Cypro-Italians better resisters of disease (such as foul brood) than the common blacks? If not, is there a breed that can resist foul brood to any extent?

R. H. JERVIS.

74.—It depends on the distance you have to go. It may be an out apiary and worth more if in good locality and every convenience, and plenty of spare combs, so you can run them three or four stories high, so when you have to extract you have solid frames of capped honey, one tin out of every four would do. On the other hand it may be worth one in three.

A VICTORIAN SUBSCRIBER.

71.—I think you would find eucalyptus traceable in black box. It would be very mild, yet it might be sufficient to prove it. It is well known that eucalyptus is in the honey from any of the gum species and if such honey is put on the market as it ought to be, it will put down any other. It is by selling honey as eucalyptus honey that I have got my best price and firmest hold of the market.

GEO. MCKAY.

71—Never had any experience with any other than eucalyptus honey, so am not a competent judge.

72.—Too many different sorts to sell under one name.

73.—No experience with white gum.

74.—One third is too much for extracting only.

75.—Had black bees the past eight years without any disease until last season and have not had any other sort long enough to know, but think the best resistance is in the beekeeper himself.

JAMES POTTS.

68.—I have ten or a dozen different varieties of timber in use in my apiary. Beach is about the best, it is the least liable to shrink or warp.

69.—Give your bees plenty of room, keep them as cool as you can in the way of plenty of shade. Last, but not least, only keep pure Italians. I don't think it possible to prevent swarming altogether. A few years ago when we used to keep our bees in the old box hives we had a paling fence running east and west. We had a row of bees on both sides. The hives on the north side gave plenty of swarms with a fair amount of honey while the row on the south side yielded an extra amount of honey, but no swarms.

A. H. LEWES.

72.—1st Better let our honey win its way on its merits, and not bother with fancy names. Let us get our own agents to handle our produce, and take care to supply only a first class article and we will find business will soon come. 2nd. No.

73.—Cannot say, as there are not enough of the trees named to test the matter in this district.

74.—I should consider one fourth or one-fifth as ample payment for extracting in ordinary cases,

75.—Italians, either pure, Cypro, or Carni, are far ahead of blacks in every way.

H. V. M'GEE.

68.—The first thing to consider in a timber for hive-making is lightness combined with durability, and for that purpose I should say redwood or Kauri pine. If one is in a place where these cannot be had, then turn to the best local timber procurable. Making hives out of packing cases is only waste of time and labour They do not last for long.

69.—Use a large hive, allow your queen all the room she requires, and if swarms come off hive in supers and return to parent hive in seven days—in the meantime destroy all Queen-cells in parent hive.

70.—The best way to clean kerosene tins and such like for honey, is, put your honey in NEW TINS. Let the tin-smith iive.

A. BALLINGER.

71.—By all means Eucalyptus trees do give the flavour. Hence the quality far and above any other honey, even Manchester white clover honey.

72.—Requires consideration. Could not yet.

73.—To my mind red gum is superior and much stronger, though white gum is not to be despised. It is mild and I think would suits the people's taste (Manchester.)

74.—Yes, quite fair. At the same time the people who you extract for have the best of it; still you are well paid.

75.—Both are really good, and will prove themselves defenders of foul brood. Superior to blacks in every respect.

J. D. WARD.

71.—If you mean the flavour of eucalyptus extract—no. Honey gathered from eucalyptus has several flavours according to the kind of eucalyptus from which it is gathered. You will get dark strong honey from some of the gums, and pale mild honey from the boxes. For instance, between the honey from apple gum and that from yellow or white box there is an immeasurable distance. Eucalyptus honey has numerous flavours and numerous qualities—but it has neither the flavour nor the medicinal quality of eucalyptus extract, and it is a good thing it has not the flavour.

72.—A very good idea, but you will need to have the honey carefully graded, and unless you stick to one kind of eucalyptus, it will be necessary to give full particulars on the label. The brand should be registered here and in England. I am willing to make one for a try.

75.—I have had paralysis in hybrids while neither pure Italians nor pure blacks were affected.

W. S. & H. J. WILSON.

70.—Boil tins in caustic soda and water, fairly strong solution, let stand in open air for a few days, then another light boiling in clean water. This method is short, sharp, and perfect.

71.—The qualities of honey from eucalyptus trees cannot be excelled, looked at from any point. Its medicinal qualities, according to many medical men to whom we have spoken, are very great. Certainly the tree gives the flavour just as honey from any other source has its own particular flavour.

72.—Don't exactly like the idea of branding honey as eucalyptal, but don't mind giving it a trial as suggested.

73.—Red gum stands far ahead of white gum honey, in quality, consistency, color, in fact there is no comparison.

74.—Should rather think one-third a very fair thing for extracting. Wish a long job would come this way.

75.—We think either breeds are better resisters of disease than are blacks. All breeds are liable to foul brood. The cure rests with the apiarist (mainly), and not so much with the breed.

JOHN SMITH, QUEENSLAND.

71—The active principle of the eucalyptus tree is in the leaves and blossom and permeates the exuding nectar. I refer readers to that article on Pure Honey, published in A. B. B. about two years ago. If the active principles were not in the plant and tree, how account for the wonderful variety of different kinds of honey, all of which have their several peculiarities, such as white clover, heather, dandelion, sage, alfalfa, &c. The beneficial or injurious qualities of honey therefore depend on the source from which the honey is obtained.

72.—As some Australian honey has very little eucalyptus honey in it, it would not be right to ship it by that name unless the honey was gathered where there was little else but eucalyptus trees. In many cultivated districts there are very few eucalyptus trees. Sell a thing for what it really is; to do otherwise would be something like a fraud.

73.—Iron bark in our opinion takes the cake for quality—box for colour.

"LOYALSTONE."

71.—Every flower gives a different flavour to the honey, but I would not term any honey "eucalyptus honey," that was from native trees As it is synonomous to saying that it has eucalyptus flavouring of some kind in it (adulterated.) The eucalyptus extract and other medicines from the same source have done much to prevent the sales of our honey. If I was ignorant of honey, and had used eucalyptus extract for a cold, and saw two jars labelled in a shop window, one called "eucalyptus honey," and the other "extracted bush honey," I would take the latter on account of my dislike to the eucalyptus extract, thinking the honey would have the same flavour.

72.—Beekeepers will not pull together at the present time, so it is useless to talk about united exportation at the present time. If you do export any, please don't call it "Eucalyptus Honey," but plainly "Australian Honey."

73.—White gum in my opinion is far before red gum for honey. The former is clear, dense, and well flavoured, a "tip-top" honey. The latter dark and strong flavour. White gum blossoms every year, red gum about every third year.

74.—Depends on the season. In a good season, one tin out of every three is not too much, if you have to do all extracting yourself.

75.—With me at present the black bees keep healthier than Italians, though I have blacks in a separate apiary on better sheltered ground than the Italians which may make the difference. I think Italians require acclimatising to the locality you take them to before they become as hardy as the bees already in the neighbourhood. I don't think one breed would resist it any better than another providing that all the colonies were strong.

J. T. ADAMS, VICTORIA.

71.—The source from which it is gathered, no doubt, imparts to the honey its flavour. But how? A secret of nature, I suppose. But be it understood not the oil (except when bees are working on the honey dew, which spreads over the leaves in very hot weather), the oil exudes from the leaf into it then, and then only do you get the flavour of eucalyptus oil.

72.—I certainly would be in favour of the one brand of Australian honey on condition it were all examined by and passed by a thorough judge of honey, for even beekeepers send some shady stuff in as I happen to know at our trial shipment in 1895, which if allowed to go through would ruin the whole. Yes, I'll pledge myself that far.

73.—Can only speak of the red. One of the best in quality, second to none, but being darker than others do not take the eye. I blended mine (for the London Market), with yellow box.

74.—Rather steep. I should say two lads to assist inside or out, could do it in 12 hours, if all full even 16 hours at most for 60 tins run, then leaves 20 for extracting. Not bad.

75.—If asked this straight out I should be inclined to say if bred with the same selection and care they are no more liable to foul brood than any other bee. They certainly can gather as much honey. Who will say an Italian queen mated to a black drone will not push the extracting record. It is no detriment there. Regarding the latter part of this question I think there is no hope (unless we interview Pasteur re inoculation with the virus), only to keep your eyes peeled and yourself and bees thoroughly clean, and a bottle of diluted carbolic to dip your fingers and anything used in when there is any doubt before using elsewhere.

"THE WASP."

71.—I think that the eucalyptus honey is the purest and wholesomest in the world even had it an objectionable flavour, which I contend is not to be found in properly ripened eucalyptus honey. We would require to distill some honey to see if it had the essence of eucalyptus in any marked degree. I think the volatile elements of the eucalyptus honey evaporates in the hive if honey is left to ripen, imparting health to the bees.

72.—I think that we had better begin at home and label our honey "eucalyptus" or "eucalyptal," and if any of us have honey to spare for export, for him or her as the case may be to eave it in the hive until properly ripe, and not to have it bursting the tins in transit, and otherwise manufacturing a condensed effluvia on the voyage that would make an alligator hold his nose between his hind leg and tail, when opened in London. Some people think they can dominate the world's market with anything from rotten fruit at the bottom of the case to wild cat flavoured honey just a day or two old when extracted. It won't do, and if anybody doubts me let them keep a half-dozen frames of honey from any fancy honey flow and ripen it in the hive or warm room and compare it with the self same honey extracted while unripe and stored in any large tin, unsealed or otherwise. I hold that each cellfull of honey evaporates independently of the other or the same way as it would if there was only one cellful of honey. But even admitting that it is not the case and the honey ripens more or less speedily in a ratio with the thickness of comb, heat of hive, &c., &c., how great the advantage of an inch or so of honey, on the point of evaporation, against a tinful or a tankful. If I had some very good eucalyptus honey I would throw in a small lot, We should adhere to a fixed label with none of the opossum or blackfellow about it to turn the dainty English palate. Such a move should be totally in the hand of the producers, and no more middlemen to pander to the English cottagers' bee interests. To my mind it should be a beekeepers' company, with very many rules.

73.—Red gum gives splendid water white honey on my range. Have no white gum, worse luck.

QUESTIONS NEXT MONTH.

FROM THE BACCHUS MARSH B.K.A.

76.—Can any of our readers give their experiences or opinions regarding the Bromide Cure which was mentioned in our last issue.

77.—Were narrow bottom bars, say $\frac{5}{8}$ inch, a success in having combs built right down to the bottoms without the open space which is usual where full sized bottom bars are used?

S. A. LONGMAN, FOOTSCRAY.

78.—Can you give experiences re the spider plant?

WILLIAM HARVEY.

79.—Bee-hives on a westerly aspect with entrance facing east. Will westerly winds affect the bees?

80.—Can Italian bees flying four miles to gather honey return a profit to the owner?

EUCALYPTUS FLAVOUR.

JAMES BENNETT.

In the last *Bulletin* the editor tells us that when the Manchester Delegates spoke of the "eucalyptus flavour" attached to our honey, he donned his war-paint and sharpened his scalping-knife, and so far as I can judge, the Editor's position on this subject is the one assumed by beekeepers in general. I am quite at a loss to understand what there is about this term "eucalyptus flavour," as applied by the London merchants to our honey, to arouse our anger. The merchants sampled our honey and "did'nt like it"—they objected to its flavour—and in order to describe their position more fully, and to point out the exact grounds for their dislike they invented a term "eucalyptus flavour," doubtless thinking that "even a child would be able to understand it now." The term simply meant that our honey was (to them) unpalatable, and its flavour unpleasant. These same people, speaking of some Australian butter which arrived in poor condition, described it as "fishy" in flavour, greatly to the disgust of the buttermen. In our case the term used is (quite by accident no doubt) almost scientifically correct, and if our honey is eucalyptus honey, and calling it such is free from objection, then the term "eucalyptus flavour," as applied to the distinct flavour of such honey must be objectionable too.

That the merchants in London did'nt like our honey should not be a matter of surprise to any one who has sold even a moderate quantity of honey. It is a matter of every-day knowledge that when a person has acquired a taste for one variety of honey he prefers that variety to any other, and if another variety is offered to him he will object to it strongly. A case in point is furnished by the editor himself. In the April BULLETIN, page 1, he tells us that if he sends his customers lucerne honey, they will send it back and ask for box, or other eucalyptus honey.

In the light of this experience, Mr. Editor, how could you even *think* of raising the scalp of poor Mr. Jones, because he told you in effect that the people at home similarly preferred a honey flavour that they had acquired a taste for, to one with which they are unfamiliar.

It is true he used a foolish term when describing the position, but that only shows that he is not well acquainted with beekeeping terms.

In order probably to disprove the existence of the "eucalyptus flavour" some beekeepers have sent samples of their honey to Dr. Miller and others to obtain their opinion as to its quality. A moment's reflection should convince these people that if Dr. Miller, and every other beekeeper in America declared that our honey was the finest in the world, it would not influence sales in England to the extent of a single ounce. You, Mr. Editor, might try this thing experimentally on those customers of yours who do not like lucerne honey. Explain to them that the beekeepers in America consider it the finest honey in the world, and let us know how it affects sales. They may purchase because they know you to be a reliable person; but they most certainly won't purchase because of American opinion as to its quality. They will perhaps say "Americans may please themselves, but *we* dont like it and we wont have it.

To those who consider the term "eucalyptus flavour" to be objectionable I would say: Suppose the London merchants told us that there is an immense demand for Australian honey, and what customers are especially delighted with, is its very pronounced eucalyptus flavour. Would you under those conditions consider the term objectionable? If not, then why is it objectionable when coupled with the information that there is no demand for our honey? It must be borne in mind that the word "eucalyptus" in this connection is superfluous, and that if it is dropped altogether the information with which it has been associated still remains intact, and still furnishes material for most serious thought. Our honey, which was specially selected by a Government expert, and guaranteed as pure by a Government brand, was a positive drug on the London market, the merchants to whom it was consigned were unable to obtain reasonable rates for it, and finally it was disposed of to the blacking manufacturers and the like at prices ranging from 3d per lb. for a small quantity to about half that price for the bulk. The reason assigned, and probably the true one, is that English buyers did not like its flavour. Instead of battling valiantly with a foolish term, I think we had better turn our attention to the solid fact that at present no demand exists in London for our honey, and consider what steps we can take towards creating a demand.

The supposition that Australian honey is objected to because it *is* Australian may I think be summarily dismissed. The price obtained for New Zealand honey proves this. If N. Z. honey is not objected to why should Australian *as Australian* be objected to either? As to why N. Z. honey realised a better price than ours in London I can only conjectnre that the N. Z. honey was either clover honey, or something which more nearly resembled clover in flavour and appearance than ours does.

That our honey is of good quality is undeniable, and that the people at home will acquire a taste for it if we can only induce them to become acquainted with it does not admit of a doubt, but that is just where the pinch comes, and there are many difficulties to be over-come, and many heartburnings to be experienced before a great and constant demand for Australian honey is created in England. Let us cease battling with a foolish phrase and turn our attention to the best means of overcoming the real difficulties that are before us.

SOME BEEKEEPING EXPERIENCE.

BY A PARTY OF THE NAME OF JOHNSTON.

Dear Mr. Editor,—As you have several times asked me to give you some bee news, and as I happen now to have a little leisure, I will take the opportunity of doing some scribbling for you. I will, however, not be offended if you think it only fit for the waste paper basket. It is some five years since I commenced dabbling with bees. My two first hives, not having the inclination to look at them till I saw they were not working much, I got someone else to do so, who informed me there were no bees left, but thousands of fine fat grubs. My next venture was a little better. I got more familiar with them, and worked up as many as eleven hives, but an immense flood swept over all the low lands on which the town of Weston is situate, and destroyed for several years to follow all that was likely to furnish bee forage. Nothing remained but to feed, a rather expensive undertaking—or to remove them. This I did to Mangrovia, some ten miles away, on the farm of a dear friend. It was the first of January, 1894. The bees began to pick up immediately, and I was looking forward to reap some fruits for my trouble and expense. Alas! however, about the 1st of February, a heavy rain set in; what honey was in the bush was washed away, and what the bees had gathered was all consumed during their enforced idleness. On the 15th April, what was termed the broad leaved ti-tree came fully into bloom, and the bees stored well from it. It was suggested I should extract it, but the honey was of a very strong flavour, and the winter coming on, I thought it wise to leave it with them. That winter and the spring of 1895 witnessed the disastrous drought that destroyed bees everywhere, and but for that ti-tree flow mine would probably have gone too. No nectar was yielded by the trees, and but for lucerne that yielded a thin honey, they would have had to be fed again. April, 1896, was time for the broad leaved ti-tree to come into bloom again, but instead of a six weeks flow as on previous year, it only lasted as many days. Feeding had again to be resorted to. However, although no honey or very little had been stored, with the care taken I had increased my bees from 31 hives on September 1895 to 48 in September, 1896. But it had been, all expense and no gain. The ledger showed a big deficit. But, "Faint heart never won a fair lady," so I thought I would try another change, and so from what this one said, and that one said, I thought I would go where *there was never a season of failure.* A small amount of travelling and expense and I have picked on a part of the colony that seem to look as if it would meet my requirements. I did such before and was disappointed. I know others who were served the same. Anyway, for good and bad I have 'bin a' gone a' done it.' And now for some of the *fun* of shifting, if it is only a moderate sized apiary. As the spot selected was among mountains and forest, with no house erected, I resolved to tent it for a time to try what it was worth. For some fortnight previous to shifting, what a lot of things there were to think of. Such will be wanted, that must be got, such a thing must be done in such a way, and no end of etceteras will have to be seen to. I thought the end of August about the best time for removing the bees. There was not much honey in the combs, very little brood, and therefore no fear of smothering them. So beyond seeing the frames were fixtures, wire cloth over the entrances, sufficient stores in each hive to last for a few days, and that the frames were parrallel with the road, no further trouble was taken—no taking off cover and putting wire cloth instead, as is necessary in summer. A lot of odds and ends to see to, it was left to the second last day to send cheque and pay for the tent, also to purchase one of those iron bedsteads and arm chair arrangements with scarlet cushions that I thought would be so handy in my new mode of

life. Well, the bees and appliances were all sent away, and I with an assistant, followed after them in a quick travelling train. I do not know what the fates mean to do to me, but they have served me very badly at first. I was fortunate in securing the services of a good bushman with a small spring cart which took several days in removing my fixtures to the assigned spot and fixing up the tent, during the greater part of which the rain was pouring heavens hard, the wind blowing a hurricane, and the weather bitter cold. It was a genuine case of cold, mud, and slush. But that was not the worst. We had sent a cheque for the tent at the price given on a printed card, naturally thinking that it would arrive at its destination needing only to be put up. Instead of being so however, there was not a single bit of rope sent with it, and all the spare twine we could command was a ball of grocer's twine! So our needed repose was broken by the need of being on the alert to seize hold of the tent whenever one of the furious storm blasts blew it away from over us. But that was not the worst trouble. That lovely bedstead armchair, I was so glad to rest my limbs on after such a day's work in such weather, had evidently been in stock for many a year. On first stretching it out some of the thin supports broke away from their moorings. The beautiful crimson cushions were rotten, and the flock inside took a notion of dropping on the floor to escape from its long imprisonment, so that, ere half the night had passed, the iron framework first went on its knees, and then to the ground, and the escaping flock left my unsupported sides exposed to the merciless cold. I have been suffering from lumbago ever since. If the firms from whom I purchased the tent or the bedstead sleep with a good conscience it is more than they deserve. Morning actually dawned at last. I sent some twenty miles away for a clothes line to fix up the tent, and with the aid of a few spare hives made the bedstead—no use as armchair now—too much cranky—made my next night's rest a little more endurable. I have not told all my troubles yet, Mr. Editor. Through the continued bad weather our stock of provisions had run out. We applied at a little store some miles away, but no meat to be had. Two butchers came twice a week. We ordered some off them, but it never came, as they take on no new customers, the only people ever coming this way being tramps looking for work, and who generally camp alongside the creek. Several large stations and thousands of sheep are within a few miles of us. But we have to send some 20 miles away for a supply of meat which—*here in the heart of Anstralia*,—comes ultimately in the shape of "*Compressed Cooked Corn Beef, from the Armour Canning Co., New York, U.S.A.*" I did think what a glorious thing Free-trade must be ? And now a word about my bees. Instead of being able to look at them the next day or so after arrival it was more than a week before the warmth would let me have a peep at them. Two of them had succumbed, a number of the bees dead with their heads in their cells, the queen —(such a beautiful yellow one she was), with the rest of the bees lying on the bottom-board, evidently only died the previous day. Well, Mr. Editor, I must draw this rambling epistle to a close. The sun shone at last, The trees for a long distance round are in bud. When will they be out in blossom ? I'll have to be happy like Mark Tapley in Martin Chuzzlewit, but do my best by sugar feeding till the trees are in blossom. Meanwhile dreaming of tons of honey coming in. Till then Mr. Editor, Farewell.

P. E., Echuca, Vic. Aug 7th,—Last season was very poor, bees only filled their hives at end of season. Did not extract so that I ought to have some strong swarms this season. Very little rain this season which makes it bad for everybody.

THE VICTORIAN CONVENTION.

J. T. ADAMS.

To the Editor of *A.B.B.*—Dear Sir,—I would like to ask your permission through the BEE BULLETIN to make a few remarks on Friend W. D. Russell's scathing remarks re Victorian Conference. My advice to him would be go slow in that direction, for its cuts him as hard as any other beekeeper, Mr. Buehne included, for they were both there in meeting of children, or as he awfully near puts it, meeting of fools. Perhaps if he had been as plain in his speech when there he might have put some of those slow ones on their mettle, and received a few ideas he would not have expected. We are not all born preachers, but when you dont preach much you have less to practice, and it is not all gospel our friend preaches (I for one have not swallowed that phenomenal yield of his yet), and when it comes to a company I for one want to see some clear channel before I plank down my paper, for I have paid for a little experience in hasty formed company which lasted not a day after the last call, and although W. D. aired his oratory and poured out a great volubility of speech (which by the way wound up by offering himself as a canvasser to go home and canvas the United Kingdom), it could have been said by some in that meeting in one dozen words and been clearer understood, but the last part is what put me against it. It appeared very much like billet hunting, and put me against the mover and his idea. Now, as regards leaving in the hands of the Secretary—one word in his defence and ours. He is in Melbourne, at the door of all the channels, and there is not another man could form ideas and carry them out too. He knows every place and everybody, and knows just where to put his hand on the thing or man he wants, and I venture to say that he could do more in a day than W.D.R., could in a month if he had the time, but unfortunately he has not. The Secretary is a hard worked and run man outside the Association, or otherwise he would be invincible as a worker for the whole, and nothing would be impossible to push along. I have that much faith in his ability that if he said it could not be done I would not put the matter further and I flatter myself I am no fool, and if Mr. R. buys me for one he will have something more to cry about. I am not so much so as to give him a trip round the little Island for nix. But a truce to this, after he had wasted so long and seen the hard though unsuccessful attempts you N. S. Welshmen have made where you have a loyal lot of beekeepers with Government on your side (for that N.B.K.A. is always in evidence), he might have held his peace. For what chance have we to form a company.—I have read Friend Davey's account of his first nine months of his ways and means, also his caution to beekeepers re Foul Brood Act. I would remind our friend that "one swallow doesn't make a summer,' and to have a care or all his fine hopes of next year may lay scattered to the winds. Our friend no doubt is right in his case. He appears not to have a neighbour who won't cure his bees nor allow any one else to do so. What would he do in this case? There is none so foolish do you say. Well just stroll around and ask beekeepers, or better ask them through the BEE BULLETIN). He dare not use force, and without the Act is passed has not the power, but if it were passed you can wave that at him. Failing that a court of Justice. Of course I do not mean that the Inspectors and the Act are to be dealt with as one. Associations could be their own inspectors the same as the Rabbit Associations here do to offenders in that line. Well, there now, we have no act here (Vic), and not likely to have, so we are not interested. All the same, you Sydney friends are welcome to my opinion, although a beginner of only few years (about nineteen), and so slow that when shifting from box to bar-frames 12 years ago, it took me five years to master foul brood thoroughly, within two miles of me.

THE PREVENTION OF SWARMING.

In the *American Bee Journal*, Dr. Miller, in a communication to the Messrs Dadant, says :—"You have done what you could to embitter my life by keeping bees that would not swarm, or by keeping hives from which bees would not swarm. At any rate, you report only from three to five colonies out of a hundred as swarming, and you attribute it chiefly to the large amount of room you give your colonies. This year I gave to most of my colonies 16 Langstroth combs, making, I think, about one-third more capacity than you give to your colonies. Most of them were reduced to one story with eight frames at the time of putting on supers, but before being so reduced a number of them made ready for swarming, and of those left on 16 frames the large majority decided to swarm. It might be said that being in two stories the bees did not work in both, but that is a mistake, there was brood in both stories, and the queen went freely from one to another. Now, why do my bees deport themselves so differently from yours? Is it 'locality,' or is there something in the shape of the hive. Is it some witchcraft you brought over from France? If the latter, will you teach me the secret if I come down to your place?"

To which Chas. Dadant replies :—"There is nothing in discordance with what we hold to be the habits of the bees, in the above fact as described by Dr. Miller. The frames of our large hives have about 100,000 cells; those of the 8-frame Langstroth about 60,000, or two together about 120,000, but as soon as the crop begins we add one super containing about 50,000 cells, and when this is a little over half full we add a second one, if the season is favourable, thus raising the capacity of the hive to 200,000 cells. The difference in the quantity of swarms is not due only to those successive enlargments of the hive. A colony, in a state of nature, always builds its combs from the top down, and continues them downward without interruption without leaving any space open. The queen may thus run over them without obstacles or irregularities,. It is not thus with a double-story hive, and for that reason the queen always hesitates more or less either to go up into the upper tier or down again into the lower. The upper combs are separated from the lower, by the top-bar of the lower combs the empty space, and the bottom bar of the upper combs. This space compels her to hunt around in the dark, in a way which is not according to her instinct. In a large, single-story hive the case is different. She finds in the brood chamber the entire space that she needs. In our apiary of about 80 colonies, here at home, we have had but two swarms this season.

BACCHUS MARSH (VIC.) B. K. A.

GIDEON HOLLIS (HON. SEC.)

The usual monthly meeting of the Bacchus Marsh Bee-keepers Association was held at W. Hollis' Tea Rooms on Wednesday, Aug. 19th. Mr. W. Smith (pres.) in the chair.

The Sec. was instructed to make inquiries re the new bromide cure and the utility of narrow bottom-bars.

Notices of motion for next meeting. (1.) That the night of meeting be altered from Wednesday night to Tuesday. (2.) That ladies be admitted as members without being required to pay subscriptions.

There was a general discussion on Foul Brood and other subjects. Date of next meeting Wednesday, Sep. 16th.

HERE'S A DOLEFUL LETTER: D. F., Wonwondan East, Vic., Aug 17th.—As this season has been very dry, no blossoms, no heney for the bees, foul brood raging among them, and finding no cure, I dont wish to take the *Bee Bulletin* this year, so kindly scratch my name from the roll.

CAPPINGS.

From American and other Bee Journals.

Mrs. Atchley says she has found out, by repeated tests, drones do not live over 70 days in any hive, hives queenless or not.

Emmerson T. Abbot says :—There is one point that is fully settled in my mind and that is, that the Carniolans are much more valuable than the mass of beekeepers at the present time seem to think. I am thoroughly convinced that all that is needed is to put them to the test in order to demonstrate their superior qualities. I think, too, that the mixture of yellow blood improves them. Here is a field for some of our workers at the experiment stations.

Mr. W. H. Pridgen says, in the *Southland Queen.*—On June 12th I placed a clean comb in a breeder's hive ; on the 15th, gave it to queenless bees ; the 16th, transferred larvæ from it to cell cups, rejecting the oldest, because they could not be transferred without mashing out the food with my "cocoon-transfer," on account of its abundance. On the 27th, I distributed the cells, the same time of day that the clean comb was given to breeder just 15 full days before, and had two queens to emerge from the cells while distributing them. On July 2nd I saw one of the young queens leave the hive, and return after mating. None of this is guess work ; who can beat it? If the egg was deposited in one hour from the time the comb was given, that this queen hatched from, she mated in exactly 20 full days from the time the egg was laid. Well developed queens, with everything favourable, hatch on the 16th day, counting the first and last, or, in 15 full days.

HOLDING QUEENS FOR MARKET.—W.H. Pridgen says,—Just take a frame of honey with a few bees and a small patch of brood in it, put them in an empty hive or nucleus, stop them up and set them in the shade. Don't let them work any, if you do they will likely get discouraged and swarm out causing lots of trouble. If you hav'nt any empty hives on hand you can make a small box, about 6 or 8 inches square, and have a small frame to fit it, and fill the frame with honey and a little brood. Put about a half pint of bees with it, then close the entrance with a strip of wire cloth, so they will not smother, and they can be stacked up in a room or in the shade where they can keep cool. Queens can be kept this way without any loss, because they are not crowded ; they have plenty of room and nothing to do, so they have no cause to die.

R. C. Aikin, in *American Beekeeper* says :—The first mistake with apiarists is to make their solar wax extractor too small. The next mistake is to make the box and sash of wood. Wood will not stand the extremes of heat, wet and dry. The putty will loosen and cracks open. I have a sash part wood and part iron. The iron stays alright, but the wood part is always more or less loose. The walls are of brick built upon the ground, and the inner parts of tin. It is six feet square and fronts south. Were I to build again I would make it longer east and west, or, what I think still better, build with the corners pointing north, east, west and south, making a hip roof with a southeast and southwest slope, and so get the sun all day. Large glass is not necessary. I have glass in mine that is not over 4 inches by 16. I use straight-edge glass and oil the joints, the glass butted not lapped. A large solar will also serve as a liquefying concern. Once, I liquified a thousand pounds in two days. The honey was in three and two pound lard pails, and all put in at one time. Fire was used beneath in this case, but where the cans of honey are spread over the solar so that the sun shines on each pail or can direct, the sun alone will do the work any ordinary clear summer day. Should I continue to produce extracted honey, and have to liquify the same, I would not do it with water or steam. An appliance for the use of hot air—much on the plan of an oven—will do the work just as well and much cheaper, and any kind of a vessel

can be put in. I have been using lacquered and stencilled, and it is no little satisfaction to be able to melt honey right in the pails when it has become candied in them. To set these pails in water would spoil the paint and lettering, but the dry hot air does no damage whatever.

The Rheinische Bienenzeitung.—One of Gravenhorsts' methods of making artificial swarms is as follows: All the bees of a strong colony are brushed into an empty hive with starters, which is given a new location, while the combs, with the old hive, remain on the old stand. The latter receives many old flight-bees, but most of the bees remain with the swarm, if it is made before the bees take their play-spell, or if they are given a chance to fill themselves with honey. Though ordinary artificial swarms sometimes get the start of such a swarm, it makes it up later, since it contains more young bees. Gravenhorst's best colonies are formed by a combination of the above with the ordinary method. From colony A is made an artificial swarm C. consisting of the queen and part of the bees, which are put in an empty hive with starters on the old stand. Eight brood combs of A, with the bees on them, are put in the surplus apartment of a new hive in a new location. On the same day is made an artificial swarm D, by the method of the preceeding paragraph, from colony B. The best eight brood combs (of course free of bees) of B are put in the brood chamber of the hive which has received the brood combs of A in its surplus apartment. This hive is now full, and is set on the stand of B. It parts with its flight bees, which return to the old stand of A. (where C. is), but at the same time receives the flight-bees of B. It has and continues to have plenty of young bees, together with the flight bees of one colony (B), and resembles a colony which has swarmed, but which continues hard at work. A swarm from it may be reckoned on with certainty in 15 to 18 days if it swarms at all. While this swarm is out all cells are cut out, and the swarm is returned. Gravenhorst in hiving swarms uses starters at first and lets them build part of their combs, or 5 to 8 of the size he uses, then adds foundation or drawn combs.

BUILDING UP WEAK COLONIES.

BY G. M. DOOLITTLE, in *American Beekeeper.*

The all important question which confronts at the start in this matter of building up weak colonies, and a question not fully understood by most novices, is the best means of securing and keeping the degree of heat required by the law of nature, with the fewest bees demanded for the successful rearing of young bees during the fickle weather of early spring. In order that brood-rearing may go on successfully the temperature inside of the cluster of bees must be at least 92°, as I have proven by many experiments with a self-registering thermometer. Now, suppose that we had a cluster of bees that on a moderately cool morning occupies three or four spaces between the combs in a full hive containing 2,000 cubic inches; we will usually find brood in but two combs and but small patches at that, with this brood increasing very slowly as the days go by on account of lack of sufficient heat to carry on brood rearing to the best advantage. Shall we leave this colony as it is or shall we try to help them, is the question? Many will tell us to leave them as they are, as to do differently will only be a waste of time. For the novelty of the thing let us experiment a little and see if the advice of the many is correct. We will set these two combs having some brood in them close to one side of the hive, and by means of a nicely fitting division board shut all of the bees on these two combs, allowing a little space under one corner of the division board sufficient for the bees to run under to secure food whenever they wish, from a comb of honey placed just outside of this board,

thus giving them the assurance that there is no danger of becoming short of stores, thus stimulating them to brood rearing. By looking a few days later we will find that the queen, under these conditions, can and has occupied from two to three times the space that has the one which was left with her bees and brood in the centre of a full sized hive. As the above has been spoken lightly of by some, they called it "spring fussing," I have made some experiments regarding it and for example I will give one of them. I selected two colonies as nearly alike as possible, both being clustered the between five ranges of combs and shut one on two combs, while the other has the whole hive. Both were treated as near alike as possible, except this, and the result was that the one shut on the two frames had them filled with brood to the bottom bar and out at the corners by the 10th of May, while the other had brood in the centre of three frames to the amount of less than one frame full or a little more than one third of what the other had. When we had gotten thus far, it will be seen that we could put a comb partly filled with honey, (the same having the capping broken, if it was sealed honey, so the bee would become excited in manipulating this honey) in the brood nest of the first hive, and the queen under this stimulating process would fill it with eggs and brood in a very short time, and that to the bottom and side bars; while if we undertook to stimulate the others in the same way we should be likely to ruin more or less of the brood which they already had. As soon as the bees become crowded in this contracted hive we shove along the division board and put in the centre one comb having the desired amount of honey in, enough to cause great activity with the bees in removing it, yet not enough to be in the way of the queens' depositing eggs in the cells, and so we continue to do so until the hive is full, doing this as often as the bees become populous enough to allow it. This hive will be filled with bees and brood long before the other thinks of being so, which will give us many more bees for the harvest, should such be from early flowers, such as clover and basswood. This is what is called a judicious spreading of the brood. No one, whether novice or expert, should think of spreading the brood when the bees are not crowded for room, or when they are covering and holding all of the brood that they can; for when they have all of the brood they can cover it is only a waste of time, brood and heat to spread them further. To illustrate a little farther: Take one of these colonies which we have had shut on two or three combs for a week or ten days and watch and see how many bees are going to the fields. Now at night, take out the division board and place the two or three combs of brood which they have, in the centre of the hive the same as they would have been had not the apiarist interfered, and the next day very few bees will be seen leaving the hive for field work, while if at night they are fixed back as before, double the number of bees will go to the field the next day, this showing conclusively that we are working along the lines of nature's wants in contracting the hive to suit her wants. Of course, this is only applicable to April and May weather, and not to weather when the mercury is 90° in the shade; for then the heat outside is sufficient for brood rearing in any part of the hive, providing there are only nurse bees enough to feed the brood. Well does this pay? I say yes! not only in dollars and cents, but also in the fun there is in seeing the business prosper in your hands, by dint of a little extra effort put forth to accomplish an object we are desirous of accomplishing. It is worth something to us to be successful in our pursuits.

HONEY MIXED WITH FAT.—Mr. J. J. Dick, Port Macquarie, writes,—Splendid spring here for bees, went into winter with 47 colonies and not lost one. Had an order to day for a 60lb. tin, the writer asked for it not to be mixed with fat, as he heard beekeepers used fat to mix!!!

THE ELWOOD DE-QUEENING METHOD.

FOR THE PREVENTION OF SWARMING; SOME OF THE DIFFICULTIES, AND HOW OVERCOME.

BY T. H. KLOER, in *Gleanings*.

About the time when the colonies become so crowded with bees and honey that there is danger of there getting the swarming-fever, and preferably, before the troublesome disorder has actually begun to make them dissatisfied, the apiarist hunts up the queen in each hive; he takes one or two combs, with some hatching brood, and adhering bees enough to make a small nucleus, and hangs them in a nucleus hive, which stands near the colony, and the queen is placed on these combs, to be kept in the nucleus until she is needed again. Nine days after this operation, the dequeened hive is carefully gone over and *every* queen cell removed from the combs. The colony is now *hopelessly queenless*—that is, there remains, at this time, only sealed brood in the hive, from which it is impossible for the bees to raise a queen. In this hopeless state the bees are left for a week or ten days, when the old queen is re-introduced into the hive. During the nine days succeeding the removal of the queen, and while the construction of queen cells goes on, there is no noticable slacking-up in the work of the bees. They seem to work on, so far as I can see, about as contentedly as if they had their queen among them. But after the destruction of the queen-cells there is a noticable let-up in the energies of the bees. After the queen has been re-introduced into the hive, and she has been accepted, and has commenced to lay, the bees begin to work with much more energy and vim. There being plenty of empty cells in the combs, the queen can exercise her laying powers to the fullest extent, and all desire to swarm is for the time being expunged. If some honey has accumulated in the cells, from which young bees have emerged, it will be removed by the workers into the sections, to give room to the queen. As the full strength of the colony, excepting the bees taken from the nucleus, has been held together and even constantly augmented by the hatching brood, the colony is in good condition to store honey. The season of comparative sluggishness during the hopeless period is, under natural swarming, often equalled by the sulkiness of the bees, which sometimes seem to be unable to make up their mind as to whether they want to swarm or not, during which time of indisposition they do no work. It has seemed to me, frequently, that Mr. Elwood omitted to say many things which he should have mentioned, and which would have saved me many a disappointment, and, perhaps a good many dollars. Or is it possible that his bees act so differently from mine? The first thing I found out was, that it is necessary to close the entrance of the nucleus hive at the time the queen and her companion workers are placed into it, and leave it closed at least until dark of the first day, or else there is much danger of the queen leaving it, and getting lost, or returning to the hive she was just taken from. The first summer I left all the entrances open, and I found several queens marching around on the ground followed by a few bees. How they left, whether by swarming out of the bees, and the queen following them, or whether the queen herself became so excited and disgusted with her new quarters and small company that she left of her own accord, I cannot say, as I never caught them in the act. There were always some bees, the young bees, left in the nucleus; and what old field bees are put in to the nucleus will naturally go back to the hive anyway. After I found several queens on the ground (remember, they were all clipped) I I examined all the nuclei I had made up to that time, and found a few more gone. In several instances I found them in the old hive, where they had been well received. In others they were lost. Thereafter I always closed the entrance with a plug made of wire cloth, which is with-

drawn the evening of the first day. By next morning the occupants of the nucleus will be sufficiently cooled down to stay. The nuclei should be well shaded and not made too strong, or there will be danger of smothering. I have never found any difficulty in destroying all the queen cells. This is best done on the eighth or ninth day. If done before the eighth day there is some danger of there still being some unsealed larvæ in the hive, from which the bees will raise a little scrub of a worthless queen, which is apt to give trouble. On the ninth day all larvæ are sealed, and the bees will be hopeless if all queen cells are taken out. I have occasionally had to defer the operations to the tenth day; but then you may expect to find one young queen emerge from her cell, and a number of others ready to do so, even if there were no queen cells started at the time of dequeening. If there are queen-cells started at the time the queen is removed they should be destroyed, else there is no telling how soon they may not have a queen. Now, as to the way in which I proceed so as to make it a sure thing and get every cell. I carry along an empty hive, into which I put all the combs and adhering bees. From this I take the combs one by one, shake most of the bees in front of their hive, and then the eye has a clear sweep of the almost naked comb, and I can pick off every queen-cell without fail—at least I have never had one escape me in six years' practice. There will be some occasional cells, hardly larger than a drone-cell, but the shape is sufficiently different to betray them. There will be cells stuck away on the sides of the combs next to the end-bars; but the practiced eye will detect them. After each comb has been picked clean of queen cells it is replaced into the hive, the bees going in at the entrance. I am confident it would be useless to try to get all the cells, with the bees thickly covering the combs, and I surmise that is the way those proceed who report having difficulty in this matter. If only one cell escapes there will not be any swarming unless it be on the fifth or sixth day after the birth of the young queen, when she leaves the hive to mate. Of this and of the reason for it, I shall speak later. If more than one cell escapes there is sure to be swarming when you are not expecting it. Hence the importance of making a clean sweep.

CRUMBS.

AUSTRALIAN YANKEE.

PRODUCING & HARVESTING OUR CROPS.

I think all will agree with me when I say that extracted honey production pays best in the Australian colonies, or at least in the country districts where weare a long distance from market, as comb honey is so fragile a commodity to ship by rail, whereas extracted honey may, if properly put up, be handled as easily as sacks of corn. I shall therefore have more to say on producing extracted honey than I shall on comb honey raising. When our hives are full of bees we will take an upper storey containing say four frames (if simplicity size is used); those frames should be full of empty comb. Take one to each hive, and when we have as many upper stories as we can put on the one day, we will commence putting them on. We will commence at say hive No. 1. We want our smoker well alight, so that we can give the bees a whiff of smoke whenever they shew any signs of stinging, as at this time of year, when the honey is just beginning to come in, they sometimes seem rather inclined to resent any intrusion on the part of the apiarist, but by blowing a little smoke over them whenever we see any signs of stinging, we can get along very nicely. Well, we will suppose that we are all rigged out with smoker and veil (always use a veil, as your wife or best girl would not like to see you going around with a bungey eye, or with your nose out of all proportion to the other features.) We will now lift off the cover and quilt, blowing a little smoke over the frames as we do so. Now lift out two or three of the frames containing the most hatching brood, and hang them in the centre of the upper story, which should be standing conveniently close to the hive. Now hang in their place in the brood chamber frames of empty combs that we brought in the upper story. When we have the brood chamber full we put a queen excluding honey board on it, and set the upper story on the honey board. Arrange the remaining frames of empty comb on each side of the frames containing hatching brood, and if there is any honey coming in the bees will commence to store honey in them, whereas if we had not taken any frames of brood from the brood chambers to hang in the upper story the bees would be likely to store a lot of honey in the brood combs before

going above to commence storing there, and thus crowd the queen and cause swarming. Giving the queen the empty combs in the brood chamber tends very much to retard swarming, as by the time she has filled them with eggs the bees have got well to storing honey in the upper story, and are not inclined to swarm, provided the honey is kept extracted, so as to give them plenty of room to store it as fast as they can gather it. As soon as the bees fully occupy the frames that we gave them at first in the upper story, we will fill out the super, so as to give them an abundance of room. Of course we treat each hive the same as No. 1. I omitted to say that in taking the frames of brood out of the brood chamber we should be very careful not to take the queen with them, as we want her to remain below the honey board.

When the combs have about half of their surfaces capped over, I would remove them and extract the honey. I always take a set of empty combs to put on the hive at the time I take off the full ones; in this way the bees are not delayed in their honey gathering. I still practice and recommend the old method of shaking and brushing the bees off the combs, as I find that the honey extracts so much better when taken direct from the cluster of bees. If we use the escape it takes a long time for all the bees to leave the combs, and if the weather is any way cold the honey gets stiff, and takes much longer to extract, therefore when everything is taken into account I do not think much time is saved. besides there is an extra expense attached to escapes, and it requires a greater number of surplus combs. Some prefer half-depth frame for extracting supers, but I much prefer the regular size, used in the brood chamber, as they are interchangeable. I consider the Gallup frame the best in the world for extracting, as it is convenient to handle, and it hangs in the extractor the same way that it does in the hive. As to which is the best extractor to use, I do not hesitate in saying the Cowan Rapid Reversible, although I do not at present use one; but I have handled them in other apiaries, and intend turning my old extractor cans into honey tanks, and getting a Cowan for the coming harvest. For storing the honey I like shallow tanks so that the honey may fully ripen. The tanks should stand in a warm room and the honey should be allowed to stand in them for at least eight or ten days, when it may be drawn off into sixty pound tins and shipped to market or stored away, as the apiarist may desire.

SELLING OUR CROP.

I find that I can sell much more honey in my district by putting the extracted honey in 2lb. and 4lb tins. Thoy should be put up so as to weigh 4lbs gross weight, they may then be sold at a reasonable price, so that working people can afford to buy then. If they held 4lbs. nett they would be sold as a 4lb. tin, and at an advanced price which would make the honey appear dear, whereas the producer would not get any more for his honey. The public look at the size of the tin. They don't stop to ask if there is four pounds of honey or three and a half, they buy it as a four pound tin and are satisfied. I speak from experience as I have sold tons of honey put up in just that way. I do not consider it practicable to put our honey up in glass, as we have to pay such a high price for attractive jars and tumblers, that it brings the price of a pound of honey so high that working people cannot afford to buy it for their children.

If beekeepers were to put their honey up in 2lb. and 4lb. tins I am sure that there would be tons more honey consumed in our towns. I could mention several stores in my nearest town where they could not or did not sell four sixty pound tins of honey in twelve months, but after I had induced them to try my honey put up in small tins and neatly labelled, why, bless you, they sold at the rate of about two dozen four pound tins per week. At first they would order two dozen at a time, but they soon increased their orders to six, and then twelve dozen at a time. My whole crop was sold out in a short time.

COMB HONEY.

I have never produced much comb honey, so cannot speak from much experience. What little experience I have leads me to favour single tier wide frames, for producing comb honey. I would have them made with insets in both top and bottom to correspond with the openings in the sections. They are easily made by nailing a top on the Root section holder. When ordering them order enough bottoms so as to allow one for a top bar for each holder, thus converting it into a frame. I would use them in the super just the same as the holders, only having a top on. You can reverse any one so as to cause the bees to build the comb clear to the wood of the section.

If only producing small quantities I would remove sections as soon as capped over, as they do not get travel-stained. Those over the centre of the brood nest will be finished first. Remove them them and draw in the other frames, so as to place the empty sections at the side of the super. When the honey flow begins to slacken, I would not put on any more sections but keep closing in the sections as fast as full ones are removed. By so doing we will have very few unfinished sections at the end of the harvest.

QUEEN REARING.

It is my opinion that in these days of cheap honey, every apiarist should rear his own queens unless he is one of those fortunate beings who have an abundance of ready cash, or when a colony becomes queenless at a time when he could save more by buying a queen than waiting to rear one, but if all would follow the advice

given under the heading of nuclei, they need never be without a supply of queens. There are so many ways of rearing queens that the novice is oftentimes puzzled to know which plan to adopt, therefore I intend to give only the one plan in these Crumbs, as I consider it the best, when all things are considered. The Doolittle method is an excellent one, but there are a great number of apiarists who do not succeed with it, therefore, I do not consider it advisable to recommend it for the novice, although I would say get Doolittle's book and try a few cells. The plan I advise is as follows: Remove the queen from a strong healthy colony, one that has a lot of unsealed brood is to be preferred, close the hive and remain so for 24 hours, when you are to open the hive and remove all the frames that contain any unsealed brood, giving them to other colonies. Now, go to the hive containing your best queen, and take out a frame having eggs and young larvæ, none more than 36 hours old; cut a few holes in it where the eggs are and hang it in your queenless hive, adding frames of empty combs sufficient for the bees to all cluster on. Watch this frame to see when the first queen cells are capped, and then leave them for a few days. I allow mine nine days from the time. Place the frame in the queenless colony. On the ninth day cut out all but one cell, and introduce them to nuclei or queenless hives. I prefer giving them to nuclei.

NUCLEI.

I make my nuclei hive to hold four Gallup frames. If simplicity frames are used three would be sufficient. Always use the same size frames in your nuclei that you do in your regular hives as they are then interchangeable. Every apiarist should have at least 12 nuclei for every 50 colonies, thus ensuring a supply of queens. I would rather have more so as to be able to test each queen before introducing her to a full colony. The best way to form nuclei is to make a strong colony queenless and remove all frames that does not contain a great amount of capped and hatching brood. Shake the bees off these combs and place them in your comb bucket and go to other hives and get as many frames containing much hatching brood as you have combs in your bucket, that was taken from the queenless hive, giving them one from the comb bucket for each one of hatching brood taken, thus you will not perceptibly weaken the colony. When you have secured frames of hatching brood sufficient to fill the queenless hive, hang them in it at once, close the hive and leave it until the next day. On the next day you are to take two of the frames and adhering bees from this queenless hive and hang them in an empty nuclei hive (which you should have ready on the stand you wish it to occupy.) Now go to one of your nuclei having a laying queen and bring the frame she is on, bees, queen and all and hang it in the newly formed nuclei. Proceed thus with all except your queenless hive, leave the one frame in the old hive on the old stand, giving them a frame of brood, bees, and queen from a nuclei the same as the others. In this way of forming nuclei, nearly all the bees will stay where they are put, whereas if the bees were taken from a colony having a laying queen all, but the young bees would go back to their old hive, if you have not got the laying queens to give to the freshly formed nuclei. Capped queen cells will answer very well, but nothing holds bees to a new location like a laying queen.

THE BEST HIVE FOR HOT CLIMATES

The best hive for Australia in my humble opinion, is made as follows: End pieces of ⅞in. or one inch stuff, sides of ⅝in lining boards, nail on 1in. x 1in. strip of wood at each corner, then nail on cheap calico all around the outside, stretching it tight, thus forming an outer shell. Give the calico a coat or two of paint and it will last for years.

DIVISION BOARDS.

To make division boards fit the hives well, and still prevent the bees from sticking them to the hive with propolis, I nail a strip of sheepskin around the edges, placing the woolly side outward. The wool should be about ½in. long. Now is the time to bring the division boards into use, so as to keep the cluster compact and economise heat, thus stimulating brood rearing.

THE RAKING MOTION.

Many apiarists seem to be of the opinion that when bees are seen raking the alighting board that it is a sign of swarming. I very much doubt it as my bees are going through the ceremony almost every day in the summer, and yet they don't swarm much. My theory is that they are just raking up the litters in their door yard, or quite possible they are young bees exercising their muscle.

HOW TO MAKE A START IN BEES.

BY LOYALSTONE (CONCLUDED.)

XII.—QUEEN REARING, CONTINUED.—And you have a tin slide that slips over the top of the cage which you close after putting the queen cell in. If you wish to keep the queen in this cage when she hatches out, you fill the other hole with a little candy so that you can take the slide away and allow the bees to release her whenever you like. Having put the cell in this cage, you cut a piece of comb out of one of the brood frames in the hive you intend to insert it, large enough to allow the cage to fit in firm, slanting so as to allow you to be able to draw slide out when you want to release the queen.

All these operations such as cutting out cells, fitting brood for queen rearing in frame, and putting cells in cages, must be done in a room where the temperature is not over 90° nor under 80° You can rear a large number of young queens in a queenless colony with a frame made suitable to hold say 15 or 20 of these nursery cages, and when they hatch out, they will be quite safe in the queenless colony until you find room for them in your nuclei hives. After the queen hatches out and you release her in one of your small hives, within 10 days from the time you released her she should be mated and laying away, and in 21 days from the time she lays her young progeny should be hatching out, and you will be able to tell whether she is pure or not. Don't run away with the idea that there are such bees as one-banded. Your progeny from queen if mismated will be half and half or some pure Italians and some pure blacks Fill any one banded bee with honey, place him on a window and you will detect that the bee has three bands instead of one. It is quite important that the drones you rear should be from as good a queen, if not better, than the queen you keep for queen rearing, as the drones exercise most influence over the progeny. All hives you don't require to rear drones, must have nothing but worker comb in their hive. Give them full sheets of foundation in any frame you give them, but do what you will they will find some corner to rear a few drones, which you must try and prevent by cutting off their heads before they come out of the cell, or by catching them in a drone trap after they have hatched or come out of their cells. With regard to the hive you wish to rear drones from, you collect all the good drone comb you can find, and insert a frame in the centre of the brood nest, and when this is filled up with eggs, insert another alongside of it, and when this is filled insert a third between the two. Three frames is quite enough for each hive and if your colonies are strong you will rear a large quantity of drones from three colonies, enough to ensure your queens being early mated. You want to have plenty of these drones flying before you start to rear queens. At the end of the season you can unite two of these small hives together and thus make a colony strong enough to tide over the winter.

XIII.—CONCLUSION.—In concluding this series of articles I trust they will assist many beginners, and if so then I am satisfied and pleased to find they have been useful to them. I have given in brief my experience, and if I have been wrong in any of the articles it is for experienced beekeepers to correct them, if they want to help on the industry of beekeeping in Australia. No industry succeeds unless everyone pulls together which is far from being the case in this industry. I might mention a little about extracting honey. Always if possible extract your honey when sealed, it has a better flavor than unsealed hone and keeps better. Always take plenty of time to do anything in the apiary. By doing things by the halves you will never succeed in any business. Don't think you know more than any other beekeeper, but pay attention to what you hear from even a novice. Help others and you help yourself, and do everything in your power to help the industry along.

THE END.

P. A., Narre Warren, Vic., July 7th—I would request your advice how I could feed pollen to my hives in spring and what I should feed, as the weather is uncertain this time of the year fo. the bees to gather it. Also what course should I adopt for stimulative feeding as my bees have got down to such a low state that I will have to adopt some means to strengthen them on again.

[Feed pollen by mixing pea-meal with honey and warm water, and pour from a height on to an empty comb, so as to cause] it to fill the cells, then give it to the bees in the evening. Or you might use any of the feeders advertised.

W. R., Boloko, Monaro, Aug. 14th.—I have had nearly 40 years' experience amongst the bees, but I find I don't know everything yet. Every copy of your paper teaches me something new. I cannot see where it is possible for any beekeeper to know the state of the honey trade, condition of bees in N. S. W. or anywhere else. So far as I can hear, about 80 per. cent. of the bees died last summer. There is a good demand for honey in this district. I am of opinion that foul brood was known here about 1887. Italian bees were here at that time. First I heard of foul brood was about then. Mr. Waddell of Adaminaby obtained an Italian Queen from one Mr. Allport. That gentleman (I mean Mr. Waddle), may set me right if I am wrong. I would like to see a letter from him in your paper. I would like to see the following question answered (if I am not trespassing too much.) "The best kind of bees to breed for honey." I so far prefer the Golden Italians. I recommend your paper to all my friends.

[You are about right. Many thanks for your good words and for the new names you sent.

THE DEVELOPMENT OF THE BEE.

By RICHARD HELMS, *in the Journal of the Bureau of Agriculture.* WESTERN AUSTRALIA.

The evolutionary process of the bee, like that of all other insects of the higher orders, progress steadily through four distinct forms. These forms are characteristic stages of a definite duration, varying to some extent with the three kinds of bees found in a colony. Although readily recognisable at certain periods the gradation of these phrases are hidden under protective coverings. The cycle of forms which constantly occurs in the life history of the bee embraces the ovum (or egg), larva pupa, and imago (or perfect insect), which again produces the lowest form—the egg. Two stages of this transformation, occuring alternately, are quiescent (namely, the ovum and pupa), the other two (the larva and imago) being active.

THE OVUM.

The egg is deposited at the bottom of the cell, to which it is fastened in a rectangular position by a glutinous substance secreted in the oviduct of the mother. Its length is about 1-16th of an inch, and scarcely a third as wide as its thickest part. Its appearance is glossy white, and under a magnifying glass the outer vestment is seen to form a regular network. At the upper and broader end the threads of the network converge towards a shallow depression, in the middle of which the membranous shell of the egg is perforated by a microscopic opening. This orifice is techically termed micropyle (small gate). It extends as far as the yolk of the egg, and serves the purpose of admitting the fertilising cell called spermatazoon. The spermatazoon, the male germ, enters the micropyle during the act of intrusion, and rapidly coalesces with the ovulum, or female germ, which is enclosed in the yolk. The internal structure of the bee egg much resembles that of any birds' eggs on a minute scale, but without the distinct colouration between the yolk and the white as in those. The yolk and the white in the bee egg also acts functionally in the same manner as these substances do in the eggs of all other animals. The yolk containing the ovulum develops from this cell into an embryo. The embryo gradually absorbs the white, which serves no other purpose than that of its nutrition. With the help of moderate warmth the transformation within the egg is completed in three days. The egg in the meantime has gradually bent down, and now is found in a horizontal position; the integument ruptures and a small white maggot, the larva, emerges. Part of the foregoing applies only to eggs from which queens or workers, according to the treatment of the larvae, will arise. The eggs from which drones emanate are originally the same as all other bee eggs, and cannot be distinguished from them. But, one of the strangest phenomenas of nature is found connected with them, namely, they seem unfertilised and yet produce young. This marvellous fact is well authenticated and scientifically proved. Every fertilised egg, if not prematurely destroyed, most ultimately produce either a queen or a worker, and every unfertilised egg a drone. The nature of the egg when in the ovary of the female is male, when, during the laying operation, a specialised cell, originally emanated from the male, is added, and successfully coalesces with the ovulum, the sex of the egg is changed to that of a female.

THE LARVA.

This first active stage is variously termed maggot or grub, and also, but erroneously, caterpilla and worm. Grub is not strictly applicable, because this term implies boring and grubbing, and is generally applied to the larvae of beetles, which mostly bore in wood or the ground. They are possessed of feet, whilst maggots are footless larvae as is the case with those of bees. The word larva is perhaps the best, being a general term applied to all insects when in the

second stage. It is derived from the Latin, and signifies a mask, and is given in allusion to the hidden forms that will evolve from it in time. The larva, at first smallor than the egg, grows very rapidly, and in about five days increases to upwards of fifteen hundred times its original weight. At first stretched out it soon finds the cell too narrow for a straight position and becomes consequently curved, in order to accomodate itself to the room, till ultimately it lies in almost a perfect circle with the mouth touching the tail. All the time it is surrounded by food pap, which it swallows and probably also to some extent may absorb through the skin. Besides finding the width of its cradle too limited for a straight position it is also embarrassed by its own covering. The rapid growth of the larva does not extend to its outer skin, which soon gets too tight for its comfort, and not yielding is ruptured and cast off; a new one, more elastic, which has been formed underneath, taking its place. Soon also this skin becomes too narrow and another moulting is necessary, such casts being of almost daily repetition. The helpless, fat and whitish looking baby moves slowly round whilst floating on its food. Twelve light constrictions mark its body, dividing it into thirteen segments. The first segment bears the eyeless head, having a mouth with soft lips and jaws. The simple intestine is without a dual opening. The foeces, in consequence, cannot be discharged in the ordinary way and are retained in it until the last moult. A number of the segments are provided with breathing orifices or *spiricales*, which leads to ramifying tubes called *tracheae*, extending through the body. A nerve cord runs through the whole length of the body, forming at every segment knots (*ganglia*), whence nerve-threads branch in all directions.

(*To be continued.*)

It was quite a sight to see the bees hustling in near some fine old fruit trees in full bloom rear of Mr. Farrell's store, Murrurundi.

FORESTRY.

One of (if not the) most useful pubcations in New South Wales is the *Agricultural Gazette*. The August number, just to hand, has several very valuable contributions that beekeepers will read with interest, at least those tnat feel the welfare of their bees depends on the preservation and renewal of the native forests. One is "Forrestry Operations—the State Forest Nursery—at Gosford," by H. V. Jackson. Another "Rate of Growth of Indigenous Trees, compiled from the Reports of Forresters." From the latter we gather a few facts. In eighteen years in Brisbane Water and Moonbi districts, box and woolly butt were over 40 feet high, and 15 to 18 inches in diameter 3 feet from the ground; coachwood, 30 feet high, 18 in. in diameter 3 feet from the ground; a blue gum 20 year old gave a pile 40 feet long. Ironbark was considered one of the most slow growing trees we have. The following figures were given from the South Coast.

Spotted gum—Age 20 years, height 60 feet, diameter 24 inches.

Spotted gum—Age ten years, height 40 feet, diameter 10 inches.

Blackbutt—Age ten years, height 40 feet, diameter 12 inches.

Ironbark—Age ten years, height 30 feet, diameter 8 inches.

Woollybutt (not to be confused with the true woolleybutt, *E. longifolia*)—Age 24 years, height 70 feet, diameter 28 inches.

At Gosford a blue gum, nine years old, was 50 feet high with a circumference of 3ft. 6in. 4 feet. from the ground. Blackbutt and spotted gum in 20 years, girth to 5 or 6 feet. At Booral ironbark 10 years old, of sixteen trees measured, the average girth at four feet was 4ft. 11in., height to first branch 36ft. 8in.; average height 77ft. 6in. One tree reached 90 feet high, with a girth at four feet of 7ft. 5in. A seedling blue-gum one year and eight months was 6ft. 3in. in height.

One Bunya Bunya pine tree at "Milbi," whose age is now 36 years, and found it to girth at four feet, 9ft. 4in., height about 60 feet, also one English oak of the same age, whose girth is

9ft. 10in., its height about 45 feet, and in spread of branches it is 74 feet. Both these trees are growing on rich alluvial land.

At Port Macquarie a river oak on the bank of a creek in three years grew from 2ft. 3in. in girth by 17ft. high to 5ft. 6in. in girth by 25 feet high.

A spotted-gum in Shoalhaven district in an old saw pit, not used for 17 years, was then 2ft. in diameter by 25 feet to first limb, and 45 feet high ; good soil, side of a hill.

A blackbutt tree grew in 21 years large enough to make a mast 65ft. x 14 in. square for the "Maggie Gollan," ketch.

A blue-gum five years ago, 3 inches in diameter and 15 feet high, is now 12 inches in diameter by 15 feet to first limb, and 35 feet high ; red second-class soil. in the open.

A tree was uprooted nine years ago 12 yards from side of road, no tree-growth being left between it and side of road ; now there are blackbutt, blue-gum. tallow-wood, and blood-wood from 3 inches in girth, and 15 feet high up to 8 inches in girth, and 30 feet high.

A blackbutt sapling seventeen years ago 12 inches in diameter and 30 feet high, is now 2 ft. 9 in. in diameter and 40 feet to first limb, 70 feet high.

At Kempsey the average height of blackbutt on the reserves is about 200 feet, and the girth of the matured trees about 10 feet. A few old trees measured up to a height of 250 feet by a girth of 20 feet, and one about 30 feet at 5 feet from the ground.

From Dubbo the Forrester says :—White-box and red-box grow at about the same rate as the iron-bark, yellow-box a little more rapidly. Seedlings come up quickly after the white and yellow-box has been felled or ringbarked. In five years they will reach 5 or 6 feet high, but I have never seen them grow into straight saplings, probably in consequence of sheep nibbling them. They generally grow bushy. If left alone they might grow into serviceable trees, but instead of that they are cut down or scrubbed to allow the grass to grow Unless cut below the bulb they come up again more bushy than ever, putting out numerous shoots. Thousands of sheep have been kept alive this last bad season by cutting white-box and seedlings for them ; the leaves must be partially dry, say two days cut, before either cattle or sheep will eat them. Stock if hard pressed will eat stringy-bark under same conditions, but not yellow-box, iron-bark or gum.

Red-gum grows quickly, and to a large size on river banks and swampy places ; 1 foot in diameter and 20 feet high in about 15 years is not uncommon, but after 20 years old, it does not grow so quickly. It will reafforest readily from seeds, and in 30 years would probably measure 15 to 16 inches in diameter, and 30 feet high. I have seen one on the Lachlan River that measured 15 feet in diameter.

Stringy bark saplings shoot up straight about 15 feet in 10 years, with a diameter of 4 or 5 inches, and increases about half an inch in diameter and one foot in height every year.

White gum grows up to 80 feet in height, with a diameter of 2½ feet ; is found in gravelly soil ; often with ironbark ; grows at the rate of 10 feet in ten years, and half an inch in diameter yearly.

At Deniliquin eighteen years ago, young red-gum seedlings that were then only a few feet high, are at the present time a foot or 15 inches in diameter, and from 30 to 50 feet high.

The following are the scientific names of trees familiar to beekeepers :—

Angophora intermedia, Apple tree.
Eucalyptus acmenoides, White mahogany.
" *amygalina*, Messmate.
" *corymbosa*, Bloodwood.
" *eugenioides*, Stringybark.
" *hæmastoma*, White gum.
" *hemiphloia*, Grey box.
" " Box.
" " White Box.
" *longifolia*, Woollybutt.
" *macrorrhyncha*, Stringybark.
" *maculata*, Spotted gum.
" *microcorys*, Tallow-wood.
" *melliodora*, Yellow box.
" *paniculata*, Ironbark.
" " Grey Ironbark.
" *pilularis*, Blackbutt.
" *polyanthima*, Red box.
" *punctata* and *propinqua*, Grey gum.
" *resinifera*, Mahogany.
" *rostrata*, Murray River Red gum and Red gum.
" *saligna*, Flooded gum.
" " Blue gum.
" *siderophloia*, Red ironbark.
" *sideroxylon*, Red ironbark.
" *tereticornis*, Forest red gum.
" *viminalis*, Cabbage gum.

At Burringbar, on the Queensland border, the following list of growths are given :—

Name of Timber.	Diameter in 12yrs.	Height in 12
	HARDWOODS.	
Ironbark (grey)	6 inches	30 feet
Bloodwood	6 "	30 "
Tallow-wood	8 "	50 "
Grey gum	4 "	25 "
Blue gum	Very slow	no data reliable
Mahogany	6 "	30 feet
Messmate	6 "	30 "
Blackbutt		50 "
Turpentine		40 "
Flooded gum	1 foot	70 "

SOFTWOODS—BRUSH TIMBER.

Red cedar	10 inches	50 feet
Teak	8 "	30 "
Red bean	8 "	25 "
Rosewood	8 "	30 "
Cudgerie	8 "	40 "
Silky oak	9 "	40 "
Black bean	6 "	20 "
Blue fig	8 "	40 "
Pine	7 "	40 "

A FEW POINTS TO BE CLEARED UP RELATIVE TO FOUL BROOD.

BY LOYALSTONE.

This is about the only disease that is dreaded in beekeeping, though rather easy to cure. You don't know whether anyone else in your neighbourhood or someone brought a lot of foul broody honey into the the town or to his home from the bush, and he may strain it in a cloth out in the open for your bees to have a lick at. And so you have the disease again, perhaps just after you have treated a few hives successfully, and began to congratulate yourself you were rid of it, or that your neighbour has the foul brood and won't try and cure it. In cases like this you can cure your colonies just to be affected again by it, and in a case like this the only thing a person can do is to leave the neighbourhood and seek fresh fields and pastures new. But to come to the few points I want answered fair and square, not evasively. What is ths cause of foul brood? Where does it come from? What medium has the bacillus alvei or the spores besides honey? Is it possible that it comes from the inside and not the outside of the hive? And how is it if the bacillis alvei breeds so fast that any brood is allowed to escape its voracity? And is the brood so reared proof against any future attack? You will notice in a very bad case of foul brood that about a hundred young larvæ escape in a frame full of brood. Now, this is what I can't understand, when a hive is so rotten with the disease, and yet some brood escapes. But how does it escape when there are millions and millions of bacillus alvei looking for further prey, and do not attack these few larva. I cannot agree with Mr. Bolton in your last A.B.B. that a queen will spread foul brood, as I experimented over and over again putting queen from infected hive in healthy hive, and in not one case did foul brood appear. If the queen spreads it what is the good of the starvation cure? You would have it again as bad as ever when she started to breed again if her ovaries had the disease. I dare say you took the queen from the diseased hive and introduced her straight away into the healthy hive. She may carry a spore or two on her body into the hive, and develop foul brood. But put her in a cage disinfected and introduce her that way, and I guarantee all will go well. If the disease comes from the queen, kill her by all means, but prove it first. I do not know the reason why, but for an experiment I put a healthy queen in a diseased colony that was very bad and not over strong, and they recovered without any assistance of their own accord, but I would not care to always repeat the experiment for fear it would not turn out so well. In the last *A.B.B.* re foul brood by Thos. W. Cowan, he heads one place "Cause of the disease and means of its propagation," but what do we learn under that heading as to the CAUSE. He says "Although many theories have been advanced, the cause of the disease is not yet quite known." Quite so, and beekeepers should present the first scientist who finds out THAT CAUSE with a substantial testimonial. I would give £2 towards it, as I consider it would be the greatest boon ever given to beekeepers. I got sick of asking beekeepers the CAUSE myself. They would say, why the Bacillus Alvei. I said where did it come from? Answer: Oh! from a spore. And where did that infernal spore come from? Answer: Oh! honey is the medium. Just so, but there is another medium besides that, find it out, who can? Mr. McEvoy, in his plan of curing, which is the most successful, does not change the box at all, only take the frames away. According to him then, there is not much danger of the box being infected, and he is a man that ought to know, having superintended the cure of over 3,000 hives. Now to conclude this vexed question I wish to convince obstinate beekeepers that they can breed foul brood in their own healthy apiary without the bees bringing it in from any outside source. Are you listening fellow beekeepers—Well here goes—Take a ten frame strong colony of bees just before the winter, say March, get a quart of bees, smother them in an air-tight tin, when dead wet them well and place in a heap on bottom-board of your ten frame hive. Now, take three frames of young brood, just hatching, up to about ten days old, leave these frames in a cold place until brood is dead, then place these on the outside in your ten frame hive (you don't want to place where the queen is laying). Now open this hive now and again during cold weather in the winter. As spring comes on place two quarts more of dead bees well wet on floor of hive and shift frames that had dead brood to outside of brood nest, so that the queen will lay in them. In a month from then, look to your brood, what do you see, deak brood? No Foul Brood. Let any sceptic try it. Could a man and family live healthy shut up with a dozen dead men for five months. No they would die and what would be the cause? Will some of you experienced bee-keepers please commene on this.

MARRIED!

R. H. LONG.

"We'll take a kiss," the bees have cried,
"You Sha'nt," the blushing flowers replied.
The bees alighted on their breasts,
The petaled cheeks with kisses pressed.
But, in the struggle shook the flowers—
Down came like hail the pollen showers.

"We've had our kiss." they proudly cry
And off to other blossoms fly,
But Oh ! how wond'rous strange it seems,
The bees but act as go-betweens ;
For o'er them fell, with pollen shower
Love messages from flower to flower,
And while on other blooms they tarried
Their sweethearts, to their rivals—married.

AB-ORIGINAL POETRY.

"IN REPLY."

Mr. Russell, Dear Sir—
You *never* can err
In replying to verses you've seen,
Their merits don't matter
If only you flatter
And dwell on the "order not mean."

Lay it on with a spade,
And don't be afraid,
You never need "deem t'wont be wrong,"
Just swear blue and yellow
The poet Longfellow,
Ain't in it with that fellow Long?

No honey's so sweet
As compliments neat,
For praise is the nectar of men,
When I read "you're so droll,"
It went straight to my soul,
And I read and re-read it again.

I hope Mr. Russell
Your risible muscle
I've managed to move with this song,
And trust my dear Russell,
The leaves soon will rustle
With praises of Russell and Long.

THE RINGING OF OUR TIMBER TREES.

W. A. MCKERIHAN.

Oh, Woodman spare that tree that is growing on the ridges;
Its timber is the very best for railroads and for bridges.
The miner wants its timber, and the beeman wants its nectar—
To ringbark all our forests is condemned by each Inspector.
For upon my word
To ringbark all those splendid trees is quite absurd.

To keep my bees I looked around to find a good location;
I found a splendid lot of trees on Mr. Blank's top station.
Just then I thought I'd shift my bees while I was in the humour,
But I was told that Mr. Blank would ring those trees much sooner.
For upon my word
To ringbark all those splendid trees is quite absurd.

The pastoralists will tell you there is nothing yet surpasses
The ringing of our timber to improve the native grasses,
But according to the evidence of Forest Ranger Martin,
Its very little grass they'll have and much that they'll be wanting,
For upon my word
To ringbark all those splendid trees is quite absurd.

Our Government are slow to see such men will burst the bubble,
For when those trees have rotted off just then will come the trouble;
But to say a word gainst Mr. Blank just now they say is cruel;
Then later on they'll have no trees for fencing or for fuel.
For upon my word
To ringbark all those splendid trees is quite absurd.

The honey from our forest trees is splendid, I admit it;
And men with bees in bar-frame hives and extractors they can get it,
But then of course 'twill be too late when Mr. Blank's done ringing,
For when those trees are dry and dead no honey they'll be bringing.
For upon my word
To ringbark all those splendid trees is quite absurd.

Our timber trees are all the best, there is no one can deny it;
And the honey from the blossoms too. If you dont know, just try it—
And the nectar from our blue-gum tree of virtue is not lacking—
Of course we never will submit to send it to make blacking.
For upon my word
Such a vile proceeding would be quite absurd.

CURE FOR FOUL BROOD.

Place bees in fresh hive with starters only, queen excluding zinc at entrance. Burn the old combs, and disinfect hive with carbolic acid. In three days after, put them in a fresh hive with starters, giving them food. It is often cured without the second removal.

S. Bros., Binnaway, Sept 15th, —Our bees are in splendid order, I expect young swarms very shortly. I had to put on a lot of extra boxes to give them room. We have every prospect of a large honey flow this spring, honey is just beginning to come in nicely. We will send you more news later on.

R.C.L., Albury, Sep. 15th,—My bees are doing well, plenty of brood hatching and they are gathering a little honey. I only lost two swarms during the winter and I think I came off very luckily.

CORRESPONDENCE

W. D., Kogarah Bay, Sep. 7th,—This district is not in a honey zone, or rather I have not found it so, after seven years trial, so I have now decided to keep a half-dozen colonies as a hobby pure and simple.

D. G., Muswellbrook, Sept 17th,—Nothing of much interest about here, bees are breeding up well, but in the bush 20 or 25 miles west of here the yellow jacket and mountain scrub plants are out and swarming has begun.

G.M., Lismore, Aug 31st.,—I went into last winter with ten colonies. A few weeks ago I noticed from outside observation that one of them was queenless which I confirmed on examination. I then united it with another colony, leaving me nine all in fair condition and plenty of stores.

J. S. Junr., Benalla, Aug 31st,—I have no bee news to give as I have very little experience having only three hives, from which I obtained last season 230lbs by the cutting out system. The bees appear to be very strong now to commence the season, though I have not opened them as I am waiting for warmer weather.

M.E., Warrandyte.—You asked me for bee news but there is nothing to tell but bad. I did not take 6lb. of honey last season, and out of 50 hives got about 12 left. It has been the worst season for me for eighteen years, but I hope this coming season will be better. I am very pleased with the BULLETIN. I pulled all my snapdragons out years ago and thought I had good cause, for I have found as many as five dead bees in one flower at a time. I daresay some are more sensible and don't go inside but puncture the flower at the base. You have got snapdragons down in the BULLETIN, on page 101, as a honey plant.

W.N., Garland, Aug 26th,—My bees are in very fair condition considering the very severe winter we have had. Last year as you are aware was a poor honey season. I managed to get a fair amount of honey. The wattles are just bursting into bloom, and as we are having rain there is a prospect of a very good season. Now, Mr. Editor, Don't you think it would be a good plan to have the McEvoy method of curing foul brood a fixture, say on the cover of *A.B.B.*, for I notice that you are actually pestered with questions, How to cure Foul Brood ? month after month. It is the easiest, simplest and safest, for if a novice begins to make a cure with chemicals the result is that before he is aware, the disease has spread very quickly through the apiary.

(A very good suggestion.)

A.D.C., Fyan's Creek, Victoria, Aug. 20th,—We have experienced the worst season that has been known here for a great number of years, positively no honey whatever, and bees dying in all directions. A neighbour had some 70 colonies last season, now he has only two left. The winter so far has been very dry, creeks and gullies in this direction are hardly wet yet, and Spring seems to have set in already. Butter-cups and different kinds of small spring flowers out in abundance. I had a look through some of my bees to-day on account of it being a fine warm day, and was glad to see that there was a little new honey and pollen coming in ; brood in all stages. The yellow box has started to come out, and red-gum, etc., looks very promising for a good yield this coming season. Foul brood very bad around here. The days are fine and warm on the whole, but nights very cold and frosty.

A. B., Nurrabiel, V., Aug 31st.—To let you know how we are here I send a few lines. The last season as in most parts has been a total failure, many bees having died out with starvation and foul brood. I am glad I have escaped fairly well, though last January all my queens stopped laying for 6 weeks, and I felt very uneasy about them. I felt sure it was not the fault of the queens, as all were young ones. I traced the fault to not having any pollen to feed young bees with. I shifted four miles away and

the result was I got 3½ tons of honey and saved my bees. What is a good substitute for pollen? Prospects are good now should the very dry weather we are and have experienced not retard the full growth of the flowers. I am afraid of it. I have some Cyprian-Italian queens mated with pure Italian drones, also pure Italian queens *vice versa*. What would you call them. I have drones flying the last 8 days. This is early for this part.

J.G.C., Kangarilla, S.A., Sept 2nd,—Bees have wintered well this season, and are working strong on bright sunny days on blue-gum, which is in full bloom. At present there is every prospect of a good honey flow this season from blue gum and red and white gum. Bee Paralysis has made its appearance amongst Italian bees, but I have not seen any in black hives as yet. Bees have wintered much better than last year, being stronger now than in the middle of October last year. Have tried wintering in single stories, which has probably been a great help to the welfare of the bees.

A. J. Brown, Parkville, writes :—For the information of Amateur Queen Breeders, I may mention, that a queen excluder placed between top and bottom boxes of a strong colony, with a laying queen below, does not always result in queen cells being built in top box, even if larvæ of all ages is placed there. I recently had a strong colony refuse to build cells under these conditions, and after waiting a fortnight, I tried an extra excluder, placing one on top of the other. This brought about what I desired, for in three days queen-cells were started, and by replacing the frames of larvæ with a prepared frame of grafted cells, a splendid lot of cells was the result. One excluder was apparently not enough to give the upper portion of this colony.

J.H.C., Woolbrook, New England, Sept 14th,—Last season I extracted 2600lbs. of honey from 16 hives, spring count, increasing to 28, coming through the winter without a loss ; although two hives are affected with dysentry, they are in good condition, the weakest having nine Munday frames with brood in all stages, seven of the frames with only a few cells missed. I am trying the sulphur cure. Can you tell me how often it should be used ? At present my bees are working with a will on heather and wattle, and storing a little of each, which I hope will set the extractor going in a few days. Last season honey was gathered principally from white gum, apple and stringy bark trees. The latter blossomed from the end of March to June. Although we had frost right through the time mentioned it did not affect the blossom in the least, while the bees were working on stringy-bark trees (the nearest tree being 1½ miles distant from the hives.) In April last I noticed the bees, not a few in number, resting nearly a minute on their way home, ¼ of a mile from the hives. Bees will swarm early if the weather keeps fine. Yellow jacket and white gum trees I think will yield the first flow of honey, which is as far as I can see.

Mr. Gale, Queanbeyan, writes,—8th Sept. : My Dear Sir,—Here is an extract from an English letter received by my daughter from a young friend of hers who a few months back left these parts to take up her residence in England. How the truth will out! There surely is a ring or conspiracy of some sort operating against the success and merits of our Australian honey. The enclosed extract is a thorough repetition of the calumnies spread abroad so industriously to the prejudice of our bee-farmers and their produce in the English market :—"The jar of honey which Mr. Gale gave me was very much appreciated on board, and in Leeds every one pronounced it excellent, and it really is much nicer than the English honey, which sells from 10d to 1/- per lb, the squares of honey-comb 2/-, so it is dear enough over here. Brisbane honey (Queensland), is sold in Leeds at 1/- per lb ; it is in small glass jars with screw

tops. I know that this will be of interest to Mr. Gale, as he is so wrapt up in his bees. I have not had had an opportunity of seeing a bee-farm in England yet, and although we drive out in the country a great deal, have not seen any bees. We are too far north for them, so I am told; that in the south of England, bee-farming is quite an industry."

H.J.W., Teesdale, Vic,—By the way—I should like to ask "somebody" when we are to hold our next Convention. I, like Mr. Beuhne, am one of the "Advisory Committee of Country Members" but also have had nothing to advise about, but I suppose we are as much to blame for inactiveness as anyone else. However, we must try and make up for it all at our next Convention, which I suppose, will be held next May. I notice a little talk in the *A.B.B.* re Painted v Unpainted hives. I certainly am a little bit surprised at beekeepers in this country (at least) advocating unpainted hives. As far as the bees themselves are concerned, I don't think it matters one scrap, but what about the hives themselves? I should'nt care to give much for an unpainted hive after 5 or 6 years use. We paint ours about every fourth year, using "Carson's Anticorrosive paint" stone colour. It is far superior to any other out-door paint I know. Have known it to stand on bridge-work, etc., for 9 or 10 ten years, and be almost as preserving then as when first put on. It may be a little more expensive at first cost, but certainly not so in the long run. Has anyone tried coating the bottom side of bottom-boards with boiling tar. We have, it's splendid

H.C., Woolbrook, New England, Aug 31st.—Knowing you are ever ready to help and give information to anyone requiring knowledge in bee culture, I am writing as an applicant for the above favour. I am sending you by to-day's mail a few dead bees picked up from outside of the hive affected, you will notice some of the bees are swollen more than others, but if either are pressed you will find they are filled with yellow matter which has a very strong smell. This hive has been affected about two months. About a fortnight ago I took the super off, and a week ago I gave them a clean hive, but this five or six days of bad weather seems to be putting the set on them as the entrance this morning was choked with dead bees, otherwise the hive is in good condition, there being 5 frames of brood in all stages and seven frames of bees. Do you think it would be old bees too weak to fly to clean themselves, as some of them have torn wings? I noticed this morning most of the hives had dead bees laying outside, which seem to be affected the same way.

[Bees to hand. Am sorry cannot give much light on the matter of these dead bees. It is no doubt Paralysis. That disease has puzzled and is puzzling all the bee scientists of the world. One good thing about it, however is, that it often goes away of itself. Sprinkle powdered sulphur on top of frames and at entrance has been recommended. Possibly it acts as a scourer and cleanses the bee system. At any rate a good many cases have been reported as getting better after sulphur has been applied. Also well clean and disinfect the bottom board. What you say about old bees might also possibly be true—last year's bees that have lived through the winter. As a disinfectant try Littles' Soluble Phenyle, 1/- per bottle. Instructions are on the bottle.]

No. 96-811.
Department of Public Instruction,
Technical Education Branch.

The Technological Museum,
Sydney, 2nd Sept., 1896.

Sir,—In reply to your commnnication of the 24th ultimo, I beg to inform you that the bees forwarded belong to the short tongued group of the family *Andrenidas*, and the genus *Lamprocolletis*, which are probably and undescribed species. They hive in old clay walls, &c. forming single cells at the end of the burrow in which they place an egg and bee bread.

I have the honor to be,
Sir,
Your obedient Servant,
R. N. MORRIS,
Superintendant.

Mr. E. Tipper,
West Maitland,
N.S.W.

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