The Australian bee bulletin. Vol. 5, no. 5 August 24, 1896

West Maitland, N.S.W.: E. Tipper, August 24, 1896

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THE AUSTRALIAN BEE BULLETIN.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

VOL. 5. No. 5. AUGUST 24, 1896. PER COPY, 6d

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A JOURNAL DEVOTED TO BEEKEEPING.

MAITLAND, N.S.W.—AUGUST 24, 1896.

THE same healthy looking conditions as regards the weather as stated last month still continues, and those who have bees are looking forward hopefully to a bountiful spring. Let us hope their highest anticipations will be realised. The queens are now beginning to lay well and the apiarist's work is carefully watching the amount of brood, and seeing the queen is not crowded for room to lay. To give her room a frame of comb or full foundation may be placed in the centre of the brood nest provided there are plenty of bees in the hive. A more cautious way is to exchange the frames with small patches of brood on the outside of the brood circle with the fuller ones in the centre. The queen is said to hurry to complete the filling with brood of the now centre frames. Perhaps, however, the really best plan for the general beekeeper is not to interfere with the brood at all, but simply add a frame of foundation outside the cluster as it increases, removing the follower only to that extent. Be sure you have hives and frames with foundation or starters ready for the swarming, which may be on next month. If you should have a failure this year dont let it be on accouut of old or inferior queens. Our advertising pages give a good choice of queen breeders not only of good repute but who have spared no expense to get and breed from the very best and choicest strains. Still keep watch for grubs, bnt you need have no no anxiety about these if you have good strong colonies of Italians. As things are looking in a good many places the extracting house will also need to be seen to that it is in order. A little foresight now will save a lot of annoyance and worry a little later on. Another matter should be well borne in mind, that brood rearing is now going on, and a very great quantity of food—both honey and pollen is needed to feed the thousands of young larvæ coming into existenee, so don't let yonr bees run short of food. Helping weak colonies is another question of importance just now. A little brood from a strong colony given to a weak colony will push the latter on wonderfully, but be sure you give no more than the bees in the latter can well cover.

Messrs Clay, Jones and Stoker, the English Co-operative Delegates, paid West Maitland a visit recently. We were introduced to them, and in conversation asked how it was that Australian honey was quoted so much lower than New Zealand honey. Mr. Jones' (the business man) reply was, "*on account of the Eucalyptus flavour*, the *English taste was for clover honey, and you must pander to that taste.*" That word *Eucalyptus* came as a jar to our ears, and we scarcely knew how to express the thoughts that ran through our minds in a very short space of time, even including the query as to what he knew about honey. However, we gathered ourselves mentally together, and asked, "Could not that Eucalyptus flavour be made a source of value to our honey?" to which he replied "I intend to get a lot of it put up in 2lb. tins and labelled eucalyptus honey, to try it." As they were leaving next day we handed them a 9lb. tin of yellow-box honey, and asked them if on their arrival in Sydney they would taste it and write us their opinion of it, which they promised to do We afterwards learnt that they had forwarded to England a two ton sample of Victorian honey. [Up to time of going to press we had received no reply from them.]

A failure this year anticipated in the California honey crop.

We have not heard anything about that Pure Food Bill of N.S. Wales.

Some very interesting "Crumbs," by *Australian Yankee*, unavoidably held over till our next.

A Mr. T. S. Ford attributes great success with his bees to their having access to salt in early spring.

Mr. Jones, of the English Co-operative Company, stated in Melbourne the retail price of honey in England, usually varied from 7d to 10d per lb.

We acknowledge receipt of circular from Mr. A. J. Brown, Parkville, with prices, &c., of Italian Queens. We would call attention to his advertisement elsewhere.

We would call attention to Mr. Bennett's article elsewhere, re tins for export. The whole beekeeping fraternity of Australia are indebted to him for his practical experiments.

G. M. Doolittle says, from 27 years experience, 1½ inches from centre to centre is the proper space for brood comb, and 1⅝ for drone comb. He measured the tops of a number of hives from which combs had been cut.

Mr. H. Peterson has sold out his bee farm at Nuggety Hill, Wattle Flat, to Mr. C. W. Griffin. We wish Mr. Griffen every success in his venture. Mr Peterson in writing us, says Mr. Griffin is a good practical man, and will keep up the name of the old place.

We acknowledge receipt, from the U. S. Department of Agriculture, of copy of "The Honey Bee," a Manual of Instruction in Apiculture, by Frank Benton, M.S. It consists of 118 pages of well written up to date bee lore, and is a valuable addittion to the bee literature of the day.

We have received from Mr. H. L. Jones, of Goodna, Queensland, his 9th annual Illustrated Catalogue of Beekeepers' Requisites. It consists of 54 pages of well assorted matter. We advise every beekeeper to send for copy of same.

The *Southland Queen*, edited by the Atchley family, for May, being the commencement of the second volume, was an exceedingly good number, not only in the reading matter, always excellent, but this particular issue is embellished with a number of excellent photos of beekeepers, including that of Mr. H. L. Jones, of Goodna, Queensland, and your humble servant, the Editor of this journal. We would call attention to advertisement in another page.

A QUEEN'S SWARMING IMPULSE.

W. ABRAM, BEECROFT.

A queen reared in January 1892, next spring issued with a swarm ten days earlier than any other. In spring /93 the same queen led off a swarm 14 days earlier than others, and this peculiar habit caused me to try some experiments. I made use of every queen cell from her in the old hive with the view of testing whether the young queens would exhibit the same advanced swarming desire as their mother. In the spring of /94 that particular queen again cast out with a swarm seven days before any other, but her daughters were not remarkable above the average in this respect. Still I reared queens from her again and also as many drones as she liked to lay eggs for. Last season that queen appeared with a swarm eight days sooner than others. In December she died four years old. Not finding the queen progeny exceptional remarkable to other queens I induced her to rear drones, but I could not make any special select breeding until last spring when I succeeded to get drones from her over a fortnight earlier than from others, and I reared nine queens which are fertilised by her drones, as there were no others in my apiary. Three of these I have sold last season, and six are wintered. Four stocks were in remarkable good condition all the season through and at

wintering them. I looked into two the other day and found one with three, the other with four frames of brood and bees hatching. I also looked into two hives of other strain. One had two frames of brood in all stages, the other only unsealed brood. The weather is too cold yet to go through them all to ascertain their condition, but as they left off breed ing at end of March and the late cold weather interferes with breeding it is not to be wondered at if they are found weaker than usual at this time of the year. There is now an abundance of wild scrub in blossom and it is to be hoped warmer weather will soon prevail.

BEEKEEPERS' MEETING AT CUMNOCK.

From the Molong Express.

On Saturday last a deputation from the Molong Beekeepers' Association, consisting of Mr. G. Packham (president), Rev. W. C. Hughes (vice-president), Mr. G. H. Davis (hon. secretary), Mr. P. F. A. Kinna, and Mr. W. Charters, journeyed to Cumnock for the purpose of holding a meeting there in connection with the Association. The meeting was held in the hall, but, unfortunately, owing to a number of counter attractions in the way of hare drives, there was not a large gathering. The President was voted to the chair on the motion of Mr. William Black.

Mr. Packham said it afforded him pleasure to be amongst his brother beekeepers in Cumnock, and he would be glad if he could be of any asaistance in the matter of enlightening them upon any matters connected with apiculture. It was about 25 years ago since he obtained his first swarm of bees after a chase of a couple of miles. This swarm did not prove a profitable one to him ; but in later years he obtained some colonies and had since worked the bee industry successfully in Molong. He would like to see more people taking an interest in the bee, and going in for producing honey. There was money in it, and all that was needed to work the industry successfully was a little study and enterprise.

Rev. W. C. Hughes said that although only a learner in the industry of apiculture, he was an older beekeeper than the Chairman, for it was 45 years ago since he obtained his first swarm of bees. He had, however, not been keeping bees ever since, for it was only a few years back that he enlisted in the army of beekeepers of New South Wales. He was very much interested in the study of the bee itself, and the more he studied the little things the more deeply he became interested in them and their work. They were out there that day in the interest of their Association, and they wished to obtain as many members as they could get. The more members they had the more they were able to do. Union meant strength, and by co-operating it was possible for them to reap advantages which could not be secured if they did not band together. At the present time the Railway Commissioners made no provision in their list of freights for the carriage of bees. The matter, perhaps, had never entered their minds, and the consequence was, if a beekeeper desired to remove his bees from one place to another and had to use the train he had to pay a heavy amount for carriage. This was a matter which could be brought under the notice of the Commissioners by the Association, and a benefit would most likely accrue to beekeepers in consequence. Then the lower freight charged by obtaining a large quantity of tins and cases was another thing they could take advantage of, for by working together they could get up all they required in this respect at one time, thus it would be much cheaper to them. He also believed that eventually the Association would be able to regulate the price of honey. Threepence per lb. was, in his opinion, not sufficient. Fourpence was little enough. If they put a good article on the market it would be much in favour of them securing the higher price. Efforts had been made to injure the sale of Australian honey in the Home markets, and they, he regretted to say, had been to an extent successful. The eucalypti flavour in their honey was not looked upon with favour, but he thought it an advantage and should make the article more valuable. There were other matters than those he had mentioned that if they worked together they would reap benefits upon. There was, for instance, the purchase of queens. By getting a number at one time they could be bought cheaper. The putting of their honey upon the market was another important thing, and if united there was more probability of success in this direction also than would be the case otherwise. The speaker concluded by expressing his pleasure at being present at the meeting, and his appreciation of the splendid road which led to their village from Molong. He was also pleased to see such good promise of them having plenty of wheat for the barns this season. If they obtained a remunerative price for it, had plenty of honey for the table, and other good things, they should be a happy and successful people. (Applause.)

Mr. Kinna said he was a juvenile in the matter of bees, for it was only three or four weeks ago that he had taken any interest in them since his boyhood. He had been reading up a little, preparatory to entering upon the industry, and he was commencing to get deeply interested in that noble little insect—the bee. He strongly

advised those who were going in for bees to obtain a copy of the book called "A.B.C. of Bee Culture," and study it carefully before establishing a colony. It was a valuable book, brimful of theoretical knowledge; and for practical information let them procure copies of the *Bee Bulletin*, a small publication, devoted solely to the interests of beekeepers. The little paper was so pleasant, so easy to read—everything was so realistically described by it—the plainest language only being used—that when reading it one almost imagined he had a colony before him. Everything in connection with bees was explained in this paper, questions were answered, and diseases which affected the apiary were dealt with and remedies suggested. By means of reading and studying what appeared in the works he had mentioned a man would learn a good deal, and would then be able to successfully work a colony or two of bees. The bee undoubtedly formed a wonderfully interesting subject for study, and was a marvellous insect, from which many practical lessons could be taken and applied to human life. The queen was the ruler of her colony. Without her there was no colony —without her the colony, if it did exist, would be profitless. They had the drones and the working bees, the same as in human life. The former did not work, while the latter did it all. And it was simply wonderful what they did do —how they had to work to gather the honey which they had collected in the hives. The real worker's life lasted only 42 days, some said 45, and at the end of that time they pass away and make room for others. But he was not there to give them an object lesson on bees, if he could. Their time was limited, and his remarks must be brief. He, however, wished to refer to a matter which the previous speaker had mentioned, and that was the disfavour which existed in some countries against Australian honey because it was flavoured with eucalypti. It appeared to him that the real medicinal properties of honey were not yet known. Bee farming was really only in its infancy, especially in Australia. When it became longer established, the value of honey would no doubt be appreciated at its true worth. It was the middle-men who had run down and condemned the Australian honey; but in spite of their efforts to ruin their (the Australian's) trade in the distant markets, if they put a good article upon these markets, the fact would eventually be realised, and it would be advantageous to all concerned. It stood to reason that honey which contained the pure nectar of the eucalypti must be more valuable from a medicinal point of view than that which does not possess it. And that it was, he instanced the fact that in some places where the eucalypti did not grow, eucalypti spirit was mixed with the honey for the purpose of giving it the flavour, and thus effecting a readier sale; but the properties of this article were not the same, as that honey which was impregnated by the bees with the genuine extract from the eucalypti blossom. Once the medicinal properties of Australian honey became known, the demand would increase and eventually large and profitable apiaries would doubtless be established. He could not help but say that the opposition displayed in some quarters against their honey was sheer nonsense. Let them, however, place none other than the best article on the distant markets, and they would reap the benefit. After he had studied a little more and had more time at his disposal he intended to have one or two colonies of bees, and if at any time anyone desired information and he could give it them, he would be only too pleased to impart what little knowledge he possessed on the subject to anyone. He solicited on behalf of the Molong Association the co-operation of those beekeepers who were present. By joining the Association they would help to make it an influential organisation, and the advantages which it might reap would be shared by the members. They had beautiful country about Cumnock for beekeeping. They had plenty of box and other timbers which should prove invaluable to anyone who had a few colonies of bees. They need never fear about the industry being overdone, for the demand for honey would keep apace with the supply. There was plenty room for more bee-keepers, and as the industry was one which entailed no great amount of trouble and very little expense at the start, he hoped many in this district would embark in it. He urged them not to be anxious at first to have a lot of colonies. Commence with one or two, and as they become acquainted with the working managing them then they could gradually increase the number! (Applause.)

Mr. G. H. Davis dwelt briefly on the objects of the Molong Bee-keepers' Association, viz., the encouragement, improvement, and advancement of bee culture. He also pointed out the advantages to be gained by becoming a member of the Association, which held monthly meetings at Molong. In addition to this, the Association intended to hold meetings occasionally at various centres of the district, in order to bring itself in contact with beekeepers who were unable to always attend the gatherings of the Association in Molong. He stated that since the establishment of the Society, not two months ago, a number of communications had been received from business people in Sydney and different parts of the colony inquiring if the Association could supply unlimited quantities of honey. In some cases very satisfactory prices were offered, but he was sorry to say they were unable to do business because the honey was not obtainable in the district.

Mr. W. Black said he was pleased indeed that the gentlemen who had spoken that afternoon had come all the way from Molong to assist and enlighten the beekeepers of Cumnock. He appreciated their kindness very much, and

he was sure others present did also. (Applause.) He believed the bee industry was a paying one, especially at the present day, with all the vast improvements in the management and working of the apiary. The speaker here described the method adopted many years ago at home of smothering the bees with straw when a hive was about to be robbed, and also related his first experience at keeping bees. Last year he said was an exceedingly bad one at Cumnock—in fact, it evidently had been everywhere—for honey. Out of 25 colonies he only got half-a-ton of honey. He disagreed with Mr. Kinna when he said that the queen was the ruler of the hive. He did not think so. He would like to see more people go in for keeping bees, and especially would he like to see more of the farmers go in for them. It would mean very little if any more, trouble to them, for their wives or children would look after them. There was nothing difficult about the management of the little insects, and he thought the work of looking after them was more suitable for a woman than a man. In order to encourage the industry he would give a colony to anyone who desired to make a start. (Applause.) He had much pleasure in enrolling himself a member of the Molong Association, and moved a hearty vote of thanks to the visitors. (Applause.)

Mr. Kinna here said there was one matter he forgot to mention in his former remarks, and that was that parents should encourage their children to take an interest in some hobby. He submitted they could not have a better or more profitable one than beekeeping, and he urged the parents who possibly could to obtain a colony of bees for their children, and entrust them with the care of it: procure for them books and papers on the subject of bee-keeping, and encourage them to take an interest in the work—to make it a hobby—and they and society at large and the colony also would be all the better when the children reached the years of manhood. (Applause.)

Dr. Florence gave a couple of practical illustrations of the value of the bee industry in America, and contended that there was nothing better adapted for this country than the industry of producing honey, the medicinal value of which he quite agreed with Mr. Kinna, was not yet known to the full extent. The industry was such an important one that he thought it should be brought under the notice of the Minister for Education with a view of having instruction on it imparted to the rising generation attending the schools of the colony.

The Chairman, in answer to Mr. Kinna, who wished to know whether he was right in saying that the queen was the ruler of the hive, said he agreed with Mr. Black that the queen was not the ruler of a colony. She was the mother of the hive, but not the boss. The bees themselves were the bosses.

Mr. Marston said, in order to encourage people to take an interest in bees and to make the Association a success, he would give every assistance he possibly could to new beginners in the matter of making a hive for them if they obtained the necessary material. He would only do this in the case of those who were members of the Molong Bee-keepers' Association. (Applause.)

After enrolling several members, a vote of thanks to the Chairman brought the proceedings to a close.

HONEY TINS FOR EXPORT.

JAMES BENNETT, AXEDALE, VIC.

In order to determine if possible the cause of the great leakage which occurred in the honey tins exported by the Victorian Government, and to discover how the same might be prevented in future, I recently called upon Messrs. Connelly & Co., of Bendigo, and requested them to carry out a few experiments which I suggested with their honey tins. They cheerfully consented, and the experiments (which consisted of filling the tins with water and dropping them a distanee of twenty inches until they leaked) were carried out in my presence. We tested three descriptions—one similar to the kerosene tin; one similar to the kerosene tin, except that the bottom was double-seamed; and one similar to the last, with double-seamed bottom and made out of heavier tin. Contrary to expectation, neither the double seaming nor the extra thickness of tin made the tins any more durable under punishment; indeed they introduced an element of weakness instead for they leaked sooner than the light single-seamed ones. Of course a double seam is stronger than a single seam, and heavy tin is stronger than light, but they seem to cause trouble by making the tin *more rigid*, and when the shock comes the solder breaks, while the more flexible light tins "give" and bend all over, and ease the strain from the solder. I suppose it is another illustration of the bending reed escaping injury, while the rigid oak is uprooted. Anyway, the tin which gave the best results was the kerosene pattern, made of light tin—the one that I considered the weakest of all.

The experiments further shewed that as a factor in the strength of a honey tin the *soldering* is of immense importance, and in consequence of the results obtained, the firm in question decided to abandon the method previously employed by them in soldering, and to adopt a special method. As showing the importance of the soldering, I tried two heavy double-seamed tins, one as usually soldered, and the other specially soldered. The old style of soldering leaked first drop, as all this class of tin have done in these trials. The new style stood six drops without leaking, but leaked the seventh—a very creditable performance, but not quite so good as the kerosene pattern which leaked the eighth drop.

If we should ever be in the fortunate position to require more honey tins for export purposes (which at present seems doubtful for some of us) these experiments seem to indicate that the light kerosene pattern is at least as good, if not better than any other, and as this is the cheapest of all we are fortunate in that respect, but we must insist upon the soldering being of the best and strongest description possible.

I intended to repeat these experiments at the Convention, and so to obtain the opinion and experience of all present, but the powers willed it otherwise. If, however, those who have any experience of this matter will relate it in the A.B.B. they will be doing us all a service.

R. H. Jervis, Moss Vale, Aug. 15th,—Spring is more forward than usual and bees are breeding up fast. In the out apiary bees are working on black wattle, not on the bloom but on the underside of the leaves, what our American friends call honey dew, any way it is in due time—nice and early. As regards planting for honey, one has to plant to suit climate and soil. Mr. Naveau and I have been sowing sweet clover seed in all the likely spots, as I think the district is very suitable for it.

SINGLETON SHOW.

The following are the prizes awarded at the Northern Agricultural Association Show, held 19th & 20th August.—Extracted honey, most attractive display: Pender Bros,, West Maitland, 1. Honey in comb, most attractive display: Pender Bros., 1. Extracted honey (liquid): J. L. M. Schomberg, West Tamworth 1; Pender Bros., 2. Extracted honey (granulated): Pender Bros., 1; Peter Krams, 2. Extracted honey (liquid): Pender Bros., 1; A. J. Brown, 2. Large frames of comb honey, Pender Bros., 1 & 2. Small frames: Pender Bros., 1 & 2. Beeswax: Pender Bros., 1; A. J. Brown, 2. Comb foundation: A. J. Brown, 1 & 2. Empty combs: A. J. Brown, 1 & 2. Wired frame of comb foundation: A.J. Brown, 1 & 2. Beehive, suitable to district: Pender Bros., 1 & 2. Queen and bees in observatory hive: A. J. Brown, 1.

Mr. L. T. Chambers, Melbourne, Vic., Aug 18th,—I have enquiry from Manchester, Liverpool, and Glasgow for honey and particulars, and have but little doubt that before long we shall be able to get a satisfactory footing in the English markets. I feel rather disgusted at some correspondents attempting to keep up the fable of "Eucalyptus flavour" and corresponding supposed valuable properties, seeing that it has been proved up to the hilt that no such thing as a defined Eucalyptus flavour exists. There are no two species of Eucalyptus trees which produce the same flavour.

W. Abram, Beecroft, Aug 20th,—Since Monday the weather is beautifully fine, and as I did not touch them since middle of April, I went through most of the hives and find them all in good order, every one, with bees hatching in most of them, while the queens extend their operations greatly. They had a long rest and now they appear to exhibit all the more vigor for it, and if the weather continues they will soon accumulate, though they started later in the season than usual. Last year I had drones flying at beginning of September; thus far I have seen no drone brood yet, but I won't be long after this. The nights are cold, almost frosty.

RAMBLING.

One Tuesday afternoon we found ourselves at ths apiary of Mr J. Le M. Schomberg, of West Tamworth. Mr Schomberg, at eleven years of age went to sea, and as a seaman visited most parts of the civilised world. But he found himself in port at last, right inland at Tamworth, captured and held by silken bonds, bonds in time strengthened by the addition of two bright b(u)oys. And, with employment away that occupy his mornings, the rest of his time is devoted to the cultivation of an acre of ground and the management of an apiary of some fifty colonies situate on same. When first starting beekeeping, he did not possess many guides in the shape of books, so worked out in his own mind what he thought was the best size frame, which was twelve inches for the top bar, the frames in the upper story being seven and the bottom eight inches deep. As he is within some half mile of groves of box trees, and the mountains are within a mile or so, he has been fairly successful in securing good yields of honey, and his bees were all snug and comfortable waiting for the spring to set them to work. Mostly all who have spent a few years at sea are handy men with tools and are very inventive, and Mr. Schomberg is no exception. He showed us his solar extractor. He had not been satisfied with it with one glass on top, but found out it did better work with two, and then added a third in the shape of a looking glass on hinges that could be arranged to throw its reflection on them again. He says it does its work beautifully, and he secures all the honey in the cappings, which he draws ofl by a spout at one corner. He has a tin mould, eighteen inches long, two one-third inches wide at top, two inches wide at bottom, and two inches deep. This he has ticked ofl in 2 in. spaces, and with slides that fit close he cuts the wax into pound or half-pound cakes, eight inches long making one pound. He has also been trying the English market, having sent three samples of honey there—yellow box, white box, and eucalypti. He was told it excelled English honey for flavour, but yet offered him only 25s. per cwt. for it wholesale. He calculated, however, that when all expenses were paid he would only get about 12s. or 14s. Another good idea he has got hold of is in the use the Daisy section foundation fastener, also the hot water vessel for heating the uncapping knife. Instead of a small kerosene lamp, which blackens with its smoke everything against which it comes, he uses for both purposes a small methylated spirits lamp, which leaves whatever it burns against perfectly clean. He says he obtains honey that will not granulate. If a large body of honey be placed in a tank and left for a time, that which settles to the bottom will be more dense than the rest and will not granulate. We spent a very pleasant and happy time with Mr. and Mrs. Schomberg and their little family, and next morning found us in the train going south.

We left the train at Duri, 12 miles from Tamworth, near where we understood Mr. Pankhurst resided. We found however, we had four miles to go. It was a sharp cold morning, the frost laying thick upon the ground. The track lay through the bush for the greater part of the way, the timber consisting of white box, red gum, apple tree. and a few yellow box. This might have been a splendid bee country, but the ringbarker had been at work, and in every direction we looked, it was cruel to see the waste of timber that was so going on. Towards the end of the tramp the clearing had been, however, done to some purpose, as there were several large wheat paddocks 70 to 100 acres each, in beautiful green spring. Arriving at our destination we were awarded a most hearty welcome, although our host was at the time preparing to start with his team for Currabubula. After partaking of refreshment and being pressed to stay for the night we accompanied him on the trip, some five miles away, during which we met Mr. F. W. Smith, whose tall figure those

of our readers who were at the Ultimo Convention will remember. He told us it was not a good place for bees, and he had had to feed the few he had to get them through the winter. In Currabubula a lady assured us it was impossible to keep bees there, the worms always destroyed them. However, after a short stay we returned to Mr. P's. residence, calling at a woolshed on the way. Mr. Pankhurst has been considerably more successful, however, than the instances just stated, having secured a very good return last year, much of it however, being dark apple. He had taken especial care of his box trees, and pointed with pride to several in his grounds that he had carefully pruned, the result being they were becoming very handsome trees. A pleasant evening with our host and his family, a sound sleep, a substantial breakfast and a smart drive to catch the morning train, and we are on our way to Werris Creek. Here at Werriston, the residence of Messrs Doyle, we found some 200 hives in two apiaries 2½ miles apart. It being a sheep and cattle station there were large cleared paddocks, bounded by the creek, from the banks of which rise a long range of mountains covered with honey bearing timber. We noticed some magnificent specimens of what are termed 'yellow jackets,' just ready to burst into bloom. One of the Messrs. Doyle told us last year the swarming ever among the bees was very much greater than it had ever been before. From Werris Creek, we came on to Murrurundi. The country as we came along, while originally fairly well timbered, does not seem to have had much scrub, and some of the holders instead of clearing the trees all away, had left a good sprinkling here here and there, with a result there was plenty of grass right up to the trunks of the trees, the latter affording not only good shade, but receiving their nourishment from the subsoil, not interfering with the growth of the grass. Arriving at Murrurundi early in the afternoon, we were warmly received by Messrs Goard Davis, Teys and Horne, and last though not least, the genial Dr. Bell. In the little township there are some 200 hives. Last year they had only a flow of apple tree, dark and bad flavoured, not a good one, and hardly any swarming. The trees are being cleared off the sides of the mountains, there is not much yellow box left, and there are too many bees in the neighbourhood. However it was told us it had been rumoured one man had cleared some £70 out of about 50 hives. We hope it is true, and that he will do so again and more.

We are in the train again, and start soliloquising. We look up at Mount Murlough and the grand mountain country around, portion of the dividing range of N. S. Wales, that run parallel with the coast some 100 miles inland, the drainage from the eastern side going to the ocean, from the western side travelling some 2000 miles to Adelaide, in South Australia—some of the grandest mountain scenery in Australia, which we had not visited for some seven or eight years, but had conjured it up in our mind as a beeman's paradise. We felt now disappointed. Many of the hills had been ringbarked to the summit, looking barren and dry, and the dead timber here and there quite weird. We asked ourselves, are these hills going the way of the Pyranees between France and Spain, and the Holy Land, once a land of gardens and pomegranites, now a series of barren rocky hills.

The trees, left in their natural position on the mountains, derive a great portion of their nourishment from the air that floats around them. Their periodical dropping leaves and branches form the soil in which they grow, and reservoirs of water, which gradually trickle over the lower country below. The trees destroyed, the soil is washed away by the rains. Nothing to retain the rainfall, it rushes impetuously at once to the sea in the shape of the increasingly enormous floods that now and then de-

vastate the lower grounds below, And we have heard of one grazier, who having destroyed all the trees on his land, had the greatest difficulty in starting a few trees to give shade for his cattle. We thought of a beautiful old song and melody not many years since very popular :—

"Oh Woodman spare that tree."

Dont we want an Australian version of same?

The train is at Parkville. A short walk and we are at the apiary and farm of Mr. Brown. Unfortunately he was from home, but Mrs. Brown very kindly showed us the apiary, nicely situated, facing the mountains some half mile away. He had been making great preparations for queen rearing. He had a good flow last year, principally from iron-bark and apple. After dinner, kindly prepared for us by Mrs Brown, we crossed the line to the residence and apiary of Mr. Thrift, who complained of the decreasing crops of honey owing to the clearing of the land. After a short stay we started by train to Scone, whence by mail train we reached Musclebrook At Muswellbrook we soon came across those enthusiastic beekeepers, Messrs Roberts, Ellerton, and Paul, who seemingly could not do too much to make our visit enjoyable, and in Mr. Roberts' company we visited the sick chamber where Mr. Donald Grant has been lying with a most painful illness for some seven or eight weeks. He was now, however, on the mend and quite hopeful to get about in the course of a week or so. Next morning, in company with Mr. Paul, we visited Mr. Roberts' apiary, and queen-rearing appliance's, and was also shown the materials that formed the basis of the magnificent apicultural section at the late Musclebrook Show. At 12 a.m. the train left for the south, and after a few hours' stay in Singleton, during which we had an interview with that veteran beekeeper, Mr. T. H. Moore, we arrived home at Maitland, having spent a most enjoyable and health-giving week.

We cannot conclude without giving our most sincere thanks to the various beekeepers we met for their kind hospitality, and their efforts to make our trip a real pleasureable one.

During the trip we came across one case of foul brood. Fifteen hives of bees had been purchased from a distance "A bargain." They would have been cheap almost at a gift.

H. R. B. K. A.

A meeting of the above was held at West Maitland on Saturday evening, July 27th. Present: Messrs Tipper, (in the chair), M. Scobie (sec.), W. S. Pender, G. Pender, R. Patten and Noad.

Mr. Tipper gave an account of proceedings at the Goulburn Convention.

Mr. Patten was proposed, and seconded as a member of the Asseciation. Carried.

Members gave accounts of the state of their bees and prospects of honey in their districts, which were fairly satisfactory.

It was resolved that immediately the proposed Pure Food Bill was introduced into Parliament, and a copy obtained, a meeting to be held to consider same, in order to strengthen the hands of the committee of the N.B.K.A.

BACCHUS MARSH B. K. A.

G. HOLLIS.

The usual monthly meeting of the Bacchus Marsh B. K. A. was held in the Mechanics Institute on Wednesday, July 22nd. The President, Mr. W. Smith in the chair.

The minutes of the previous meeting were read and confirmed. An account for printing was passed for payment.

The next business was the reading of nine replies received by the secretary in response to a request for information as to the best cure and preventative for foul brood. A discussion followed the reading of each letter, which proved both interesting and instructive. Moved by C.

Player, seconded by H. Simon, that the secretary write to the *A.B.B.* thanking those beekeepers who sent in replies. Carried.

Mr Hollis offered the Association the use of a room free of charge Proposed by Mr W. Sargeant, seconded by Mr H. Simon, that Mr Hollis' offer be accepted. Carried.

G. H. A., Inverell, August 4th, 1896. —We are having splendid weather here nights cald with warm days. which I am afraid will bring the yellow box into bloom a little too early for the bees. I noticed a few trees bursting into bloom yesterday. The wattle also is just opening out.

W. S. P., Wyndella, Armidale, June 9th.—I think "Australian Yankee," has swept up some rubbish with his crumbs. The proper place for all thorns is in a hedge, and if he would enclose his flower fields with hedges and substitute white thorn for blackberry, which is a far better honey plant, it would add to the picturesqueness of the place. I hope if he is ever the possessor of any land he will not encumber it with thorns and brambles, unless he wants to give work to the unemployed. Thousands of pounds have been spent in destroying the sweet briar, and the blackberry is ten times worse. The ends of their long branches dip into the ground, take root and go on again, and if you grub them up it only makes matters worse, for the smallest root will send up a sucker, making in a few years an impenetrable wilderness, the resort of numerous birds which would carry the seeds in all directions and feast unmolested on blackberries and bees. I know many places that would cost more to exterminate blackberries than the land would be worth. Their period of bloom is of short duration, and I never heard of any great honey yield from them. Cosmos are a flower I would not advice anyone to cultivate, as they spread at an alarming rate and if steps are not taken to discourage planting them, they will become in the near future a pest.

A correspondent of the *Beekeepers' Review* gathers from a pamphlet published by the U.S. Department of Agriculture that most of the honey shipped from California to England is very largely adulterated with glucose.

S. A. L., Hobbs Street, Footscray, July, 2nd.—I see that a number of your subscribers are giving an account of themselves, not all of them to their entire satisfaction. I shall class myself as one of them. Last season being my first I had nine box hives, which are now reduced to four, one of which is in a Langstroth, being the only swarm from last season. Last March a friend some 70 miles from here was good enough to send me a fine young Italian queen, which I prized very much, as it was the first of its kind I ever possessed and I took special care in introducing her, which was done successfully although it was my first attempt. About three days after I examined hive, and saw her all right; three weeks later I saw her again, and about two weeks after that I saw her no more, and the next time I looked into the hive, I was fully convinced she was gone as the bees commenced to dwindle fast and having no other queen I had to unite, there was plenty of honey in the hive. What could have induced her to go or was she killed do you think? As there has been some discussion re feeding, I'll give you my plan, but you can hardly expect any improvement from a new chum beekeeper. It is simple and most effectual as against robbing, It is the simplicity feeder, which I make myself according to my requirements and enclose it on four sides. Top (loose lid) both ends, with $\frac{7}{8}$ stuff, front, $\frac{1}{4}$, allowing an opening not larger than necessary say 2 inches, put in front of hive, allowing bee space between hive and feeder, also between lid and top and bottom of feeder.

THAT EUCALYPTUS FLAVOUR.

ENCORE TO R.H.L. IN APRIL A.B.B.

Then let those Middlemen beware,
For they will find out everywhere
That their little game, it soon shall altered be.
We'll make the Foreign Market hum,
With the Honey from the Gum,
Then they'll wish they had that what-dye-call [it tree.
And the British Public too,
They will find out how untrue
Are those Middlemen who say, Oh ! not for me.
And they'll say (now aint it funny)
Give us that Australian Honey
With the flavour of that Eucalyptus tree.

Then bye and bye will come a date,
When perhaps for him too late,
John Bull will want Australians all to see,
How they can make most money
Is to send home all their honey
With the flavour of the eucalyptus tree.

W. A. MCK.

THE MURMUR OF THE BEES.

W. D. RUSSELL

In summer time, when birds and flowers bask in the sun's warm ray,
And on the gentle breezes come the perfume of the hay,
And merry childhood's laugh and song drive time and care away—
Once then I strolled out for a walk, and wandered to the wood
Where the tall Eucalyptus trees in blossoming grandeur stood,
And all so silent seemed that scarce a sound disturbed my mood.
Still there was sound, but soft and low its music indistinct did flow.
Yet music t'was, and as I lent a listening ear with heart intent,
To learn what did such charm bestow to woodland scene so soft and low,
As still I listened it seemed to me the sounds were borne from flower and tree.
As if by some enchanter's spell the place was changed to fairy dell;
And in the tree tops glad and free the fairies held high revelry.
Delighted, I could scarce believe my senses, till among the leaves
And white fringed flowers and branch distort, I saw the cause for which I sought.
There, flitting fast from bloom to bloom, nor tarrying long but darting soon,
I note from where I stood with ease the busy honey-gathering bees.
Thus did I find the sounding trees gave forth the murmur of the bees.
All interest now I watch them work as they 'neath scented petals lurk—
One instant on a flower nigh, the next another flower try—
Another yet—they seem to sup some wonderous beverage from the cup.
Now, curious I look within a flower, late where a bee had been,
And there like diamonds sparkling true, a gem of worth —or drop of dew.
There in the secret recess lies a tiny drop beneath my eyes.
This, then, their guest, this nectar sweet, fit repast for a God, and meet
To grace the regal board of King, or to the peasants relish bring.
Scarce had the bee its burden won than to its hive the burden's borne.
I watched it go, it rose aloft, first turned about, and then was off.
So straight it went when off it flew; I followed keeping it in view;
But soon in space to sight 'twas lost, I could not follow half so fast
As its frail wings its treasure bore to add its mite to winter's store.
I stopped for breath, gave up the chase, evening was coming on apace,
So sought the track by which I came, and turned my footsteps home again.

THE BEES.

E. H. LONG.

[With apologies to A. E. Poe.]

See the blossoms with the bees—
Golden Bees.
What a world of sweet content in those gentle melodies!
How they crinkle, crinkle, crinkle,
Tiny footprints in each flower,
While the blue-bells seem to tinkle
To their tread, and oversprinkle
In a dainty pollen shower.
Sipping Thyme, Thyme, Thyme
In a wooing sort of rhyme,
To the busy babulation, in the happiest of keys,
Of the bees, bees, bees,
To the dipping and the sipping of bees.

Hear the blended hum of bees—
Swarming bees.
What world of future toiling's in those rushing harmonies!
How they cluster, cluster, cluster,
In those ever restless rings
While the sunlight as they muster
Seems to glance with silv'ry lustre
Thro' their countless wafting wings,
Keeping time, time, time,
In a trustful humming ryhme,
To the power unseen controlling the future destinies
Of the bees, bees, bees—
To the God unseen controlling the swarming of the bees.

Hear the buzzing of the bees,
Angry bees, [sees,
What a world of future trouble in their turbulence one
Round the novice, wild with fright,
How they buzz in fierce delight.
Too much horrified to speak,
He can only shriek, shriek, shriek,
Out of tune.
In a clamorous appealing to have mercy in their ire,
But they heed no cry for mercy in their fierce and [frantic ire.

Flying higher, higher, higher,
With a desperate desire
And a resolute endeavour
Now, now to sting or never,
The nose of that pale faced coon,
Oh the bees, bees, bees,

What a tale floats on the breeze,
Of despair.
How they buzz and poise and soar!
What a horror they outpour
On the bosom of the palpitating air!
Yet the ear instinctive knows
How the danger ebbs and flows.
Yes, the ear distinctly tells
How the danger sinks and swells,
By the sinking or the swelling in the buzz of angry bees
Of the bees, bees, bees,
By the modulated buzzing of the bees

ADULTERATION IN CALIFORNIA.

C. H. CLAYTON IN "GLEANINGS."

The Government scientists tell us that almost every article of food in use is adulterated with some inferior substance which is either positively harmless or merely of inferior value. In looking over their reports one is astonished at the lengths to which this shameful business is carried. Much of the communion wine which is used throughout the country is made by fermenting mouldy raisins and decayed currants. Sugar and sand are familiar mixtures. It is said that there is a substance on the market sold as powdered cinnamon, consisting entirely of pulverized cigar boxes, flavored with an essential oil. Of 200 samples of chocolate tested, only 20 were found to be pure. And so the list continues, embracing hundreds of articles of daily use. That adulteration is wellnigh universal is a known fact; but it is very difficult to fix the guilt upon the culprits. In order to receive attention in a court of law, charges must be specific, alleging time, place, &c., and be supported by competent evidence.

California has a law to "provide against the adulteration of food and drugs," and also a law, crudely drawn as to phraseology, defining what shall constitute "pure extract of honey (whatever that may be.) The law makes it a misdemeanour to "manufacture for sale, offer for sale, or sell any drug or article of food which is adulterated within the meaning of this act." The meaning given in the act, as to food, is—"If any substance or substances have been mixed with it, so as to lower or depreciate, or injuriously affect its quality, strength or purity."

This, standing alone, would appear to be sufficient; but further on in the same act we find this exception—"*Provided* that the provisions of this act shall not apply to mixtures or compounds recognised as ordinary articles or ingredients of articles of food if each and every package sold or offered for sale be distinctly labelled as mixtures or compounds, with the name and per cent of each ingredient therein, *are not injurious to health.*" These six concluding words of the exception provide the loophole for adulterators of honey. Glucose itself is largely adulterated; but so far as I know now, pure glucose has never been held to be injurious to health. No one is specially charged with the execution of the law, and it seems that "what is everybody's business is nobody's business."

In 1886, Southern California sold about 5,000 tons, at an average price of $120 per ton, or $600,000. We have decreased year by year until now our production may not exceed 3000 tons, at an average price of $80 per ton, or $240,000—a falling off in money value of $360,000.

HOW TO CONSTRUCT A CHEAP BUT SERVICEABLE HONEY HOUSE.

GEO. JAMES, WYAGDON.

Sometime ago the question was asked through the A.B.B. how to erect a honey house, and at the time being rather busy I could not then answer, and will now describe what I consider about the best and cheapest, as well as serviceable house for the purpose, and as most beekeepers are so situated that good saplings can be got near at hand, I will say at the outset that the cost will not exceed £2 to build a room 12 x 10 feet, and can be made smaller if so desired, but 12 x 10 is small enough any way. You will want two poles 13ft. 6in. to carry your ridge pole, and 16 studs 9ft. Less would do, but this allows for the studs to be 2ft. 6in. apart, but 3ft. at the doorway. This length of studs allows them to go into the ground 2ft., and 3ft. for the two to carry the ridge pole. 1 ridge pole 14ft., 2 wall plates 14ft., and two wall plates 10ft.; 14 rafters 7 feet, 10 yards 6ft. wire net, 3in. mesh, 3 1-6th dozen corn or flour sacks, 1 dozen yards scrim, 5 gallons coal tar, ½ bushel lime,

and you are ready to begin work. Dig out the holes for the studding, 16 of them, 2ft. deep, and two for the ridge poles, 3ft. deep. Lay on your plates, which you can let into the studs at top, according to your own fancy. I forgot to mention the three ceiling joists, or tie beams. These should be 10ft. long, but they can be done without if desired. You will notice that the ridge pole and two of the wall plates are 14ft. long. I would make them to project one foot over each end, as a protection to keep the weather off, and besides it takes off the bare look. When putting on the rafters you will notice they extend over the sides nine inches, and allow the first rafter to come out flush to ends of ridge pole and wall plate, and the next rafter should be one foot from the ends, or flush with the outside of the end walls, the purpose of which you will see directly. After you have the rafters on, stretch the wire net across from eave to eave, but you will have to allow the foot at each end to go short, as the net is only six feet wide. Now look sharp when you put on your rafters that the middle one strikes the selvage end of your wire net. Tack the net secure, and draw it tight as a drum. After this you are ready for your bags. Open 12 of the bags down the seams at sides and top, sew very securely (for this you will want one hank 5-ply seaming twine, and wax it well), six of the bags side to side for one half of the roof, and six of the same for the other half, but before putting on sew them so that the two lots when sewn together will have the long seam along the ridge pole, and all the other seams will then run the same way as the rafters—this to avoid any leak. Draw this also tight, and tack secure (for tacking on the bagging use Saddler's ½in. clout tacks with broad heads.) Open the remaining two dozen bags as before, but sew them altogether, side to side, for the walls, and commence to tack on from one of the door posts all around your wall plate, until you meet the other doorpost; then draw down tight and tack on the bottom. A 6 x 1 floor board would be just the thing to go all round the bottom to tack on to, but even a 3 x 1 batten is better than none at all. The remaining two bags are to be opened and used for the gable ends. Next boil your tar in some old can, but mind it don't get over into the fire. Whilst it is quite hot give your bags a good coat (outside only) roof and all. After it has got quite dry give a second coat, and whilst wet throw on dry, clean sand—all it will take (like making "Good" candy.) When this second coat is dry, whitewash all over, *in and out.* Now you are ready for your scrim. Tack this on the *inside*, all over rafters, and all this will make it bee proof to perfection. I have said nothing about flooring, but good case boards are just the thing, and can be got cheapest, or a good concrete floor can be made with tar and gravel, if well rammed down. Now this of course is not ant proof, but if you don't happen to be able to do better, well then cut all your studding another foot or more longer, and raise the floor the foot above the ground, by letting sleepers into the studs to carry your flooring joists, and around each stud, about six inches from the ground, wrap a piece of oily sheepskin, fur out, or just rub on a little tar during extracting time, and I don't think you will complain of ants in the honey house. Those who are troubled with ants in their hives would do well to adopt a plan used by Mr. Rose, O'Connell. Get four ale bottles, and with a dibble make four holes in the ground at about the four corners of your floor boards, to take the neck of the bottles. Stand the bottles in, neck down, lay on your floor board and tamp down firmly, and use a spirit level to be true. Stand on your hive of bees, and keep the bottles from getting dirty, and nary an ant will ever mount such an obstacle.

HOW TO MAKE A START IN BEES.

BY LOYALSTONE (*Continued.*)

XI.—Absconding Swarms.—Sometimes when you are fortunate enough to secure a good strong swarm of bees in the bush, you put them in a new hive with frames with starters, and are surprised to find the bees not contented with staying in it, leave to seek a nest in the bush. You perhaps see them leaving your box and after a lot of trouble you ring them down and put them back again, only to see them leave again. Now, I think when a swarm settles, scout bees are immediately sent out to look for a good tree in the bush, close to where there is a good honey fodder, and when they return to the swarm they communicate their news by some means, and their desire is so great to get to their new home, that they will not stay in any hive you put them in, unless you put some thing in the hive to coax them to stay. A good plan is to give them, immediately on hiving, a comb from some other hive containing unsealed honey and brood about two days old and not older. Another way: Place a queen excluder on the entrance and keep it there for three weeks. I have known a swarm of bees to be hived, queen excluder put on the entrance, and taken away when the brood is about a day old, and then the bees to leave their hive and go into the bush, hence my reason for keeping the excluder on until the young bees are coming out. When you hive a swarm with a virgin queen, of course you could not put the excluder on, as she would not be able to go out to be mated. In this case you would have to trust to a comb with young brood in. Occasionally I have seen a swarm accompany a virgin queen in her wedding flight and return with her back to the hive again. When you give a new swarm the frame with young brood they will rear a queen from the brood if you have been unfortunate enough to kill the queen on hiving them, so you see it does for a double purpose. When hiving a new swarm always place some shade over them, for if you leave the hive in the glaring sun, they will soon show their disapproval of it by leaving. I have seen these scout bees, or what I took to be scout bees, overhauling a good hollow spout in a tree. They will go in after a good bit of flying about, look the spout all over, come out and hover round it for a quarter of an hour or so, then fly off, and in a short time, if you keep watch you will observe the swarm come and settle in it. I have been dissappointed now and again and came to the conclusion that the hollow in the tree was not up to expectations.

XII. Queen Rearing.—To be able to rear good prolific queen bees is something to be proud of, and requires a lot of careful attention and study. Anyone can rear queens haphazard fashion, but I reckon it requires some science to do the thing properly. You think you would like to try your hand, so here goes for a simple way. You have say all Italian bees, because you cant expect to rear purely mated queens when you have other breeds in the same apiary, though you may get a fair per centage purely mated. You pick out what you know to be your best hive for honey gathering. This is the one to rear queens from. You then pick out the three next best hives, they are to breed your drones. You make say 5 neucli hives to hold, I prefer four frames. Go to one of your full colonies, take three framess of brood just hatching, (one that you notice plenty of young bees biting their way out) and one frame of honey half sealed. Put this lot with bees attached and (mind and dont take the queen with them), and place them in one of your small hives and place on a new stand, and do ditto with your other small hives. But before making these small colonies you want queen cells ready to put in them when they are hived. You make one of your strongest colonies queenless by dividing, and after they have been queenless for 5 days you open their hive and cut out what queen cells they have built, and have ready some young brood from the hive you wish to rear queens from, which you get ready in this manner: Open the hive of your best queen and select a frame wherein you cannot see eggs or brood, only a little milky fluid at the bottom of the cell; brood of the right age for queen rearing is hidden or covered over with this fluid. Cut a strip of comb out of this frame about ten inches long and three cells wide. You blot out with the head of a match (a wax vestas that has been lighted) all the young brood in these cells but say seven, which you leave an equal distance apart and cut off about $\frac{2}{3}$ of the cells from which you want the queen cells built, which you can do with a thin table knife heated with boiling water, and fasten this piece of comb on to the top of the empty frame with a little warm beeswax and resin and place this in the hive you have made queenless, right in the middle of the brood nest. After six more days open this hive again to see how many cells they have started from the piece of comb, and cut out any they may have started from their own brood. If you fail to do this one of their own progeny will hatch and perhaps destroy your queen cells. Now, start and hive as many small swarms in your small hives as you have queen cells, and on the ninth day from the time you put the brood in queenless hive the cells will be ready to cut out and the small hives ready to accept them. With your thin table knife seperate the cells carefully and place them in one of West's cell protectors and attach one to a comb in as many little hives as you have cells. A better way so that you can see if the queen emerges from her cell properly, is to have a nursery cage made thus: Take a piece of soft timber $2\frac{1}{2}$ in.

long and 1½ inches wide and one inch thick, through one end of this bore a hole one inch in diameter, and then bore two more holes ¾ of an inch in diameter through the top of it, one of the holes to go into the inch hole and the other alongside of it, and make an entrance large enough from this hole into the large hole for a queen to pass through. You tack two pieces of wire cloth on to each side of the large hole. You place your queen cell into the hole that is bored into the large hole.

(TO BE CONTINUED.)

CAPPINGS.

From American and other Bee Journals.

The prospects for a honey crop in North America, *Gleanings* says, were never better than this year.

Willie Atchley says he has only 100 colonies of bees, but he will give half of them for a queen whose bees will move eggs.

At least a third more honey can be produced in sections, by using wide frames, with frames of white sealed honey used for separators.

Dr. Miller says:—I don't suppose many people know that children will be better satisfied and nourished with a pound of honey than with a pound of butter.

Giving the bees a broad brood nest, and getting the supers as close to the brood as possible, without anything in the way, will pay the apiarist larger profits than if excluders are used, not counting the expense of the excluders.

The *Southland Queen* says:—We are fast coming more and more to the conclusion that our saying is right; that any obstruction between the upper and lower story of hives, such as queen excluding honey boards, etc., is a loss to the owner.

Sections made green by too much sulphur, C. Davenport remedies by soaking in water. If that loosens the sections from the wood, he gives them back to be fastened by the bees, choosing a colony that has its brood-nest full of honey.—*American Bee Journal.*

Dr. Miller says:—I never had combs troubled with worms after they had stayed out over winter where they could freeze, and I never had a set of combs on which a colony of bees died in spring that failed to become wormy, if not cared for.

Dr. Vance, of Wisconsin says that honey is the only food taken into the stomach that leaves no residue. He claimed that it requires no action of the stomach whatever to digest it, as it is merely absorbed and taken up into the system by the action of the blood—*Gleanings.*

M. Legrot, in France, has been trying and with some success, to breed bees for increased size. He measures his success by an instrument called the glassometer, which measures the length of bees' tongues, and his method of increasing the size of the bees, is by giving foundation with cells larger than the usual worker size.

A Mr. Pridgen, of Creek, N. C., has invented what he calls a Cocoon stick. It is made just the size of the inside of a worker cell, and is counter sunk in the end, so as to fit over the larvæ to be moved, without touching it. Give the stick a little twirl and the cocoon turns loose and is placed right down in the bottom of the wax cup, and the larvæ never knows the transfer has been made. This is an invention calculated to be a great help to those rearing queens on the Willie Atchley plan.

A farmer named Saunders, residing at Torradin, Victoria, has just taken a swarm of bees and a kerosene tin full of honey from inside the skeleton of a bullock, near the Great Southern railway line, at Koo-wee-rup West. The animal about a year ago become strangled in some barbed wire, and died there, and a swarm of bees came along and made their hive in the carcase. A similar incident is alluded to in the Bible (14th chapter of Judges), where the bees built a hive in the the carcase of a lion slain by Sampson.

We think cells carry better between the 15th and 16th days ; in fact we have had them hatch on the way from one apiary to another. A just hatched virgin can be turned loose in any queenless colony almost without danger. In distributing cells, we give the cells to nuclei, or colonies about three days queenless. We have long since quit using cell protectors; we find it best for us to place cells where bees can get to them, properly fasten and care for them.

A new bee escape with six openings, is announced in America. Mr. A. I. Root says of them :— "Perhaps I ought to state that the Porters claim that more than one exit for the escape of bees does not facilitate the emptying of the super, as one would naturally suppose. They tried escapes with one exit, and then with a number of exits; and after a long series of experiments they came to the conclusion that there was no gain by increasing the number of exits. On the contrary, something was lost by increasing the expense unnecessarily. These experiments were verified at the time by one or two others whose names I do not now recall."

Willie Atchley says the best way to rear queens, would be to take the queen away from some one of your strongest colonies, and also take all the unsealed brood, and the third day after give this colony a frame of eggs and larvæ from the queen you wish to raise from, and the bees will start cells at once on that frame. Then mark the day you put this frame of eggs and larvæ in the queenless hive, so you will not loose track of the date, counting the day you put the frame in, remove all the cells but one, to nuclei prepared to receive them. Your nuclei should be made about three days before your queen cells hatch, to be sure the bees will not tear them down. If you do not wish to prepare nuclei to receive your cells, and wish to re-queen your apiary, you must take out your old queens (which you wish to supersede), three days before your cells are ready to take off.

CORRESPONDENCE.

W. F., Bungowannah, July 9—The past season has been a very bad one, only extracted 7cwt from 50 hives, but have a quantity of full combs in reserve to stimulate any that are short of stores in the early spring. The coming season promises to be a good one.

W. B., Meranburn, July 2nd,—There is a great show for buds here and I anticipate a good spring flow, but owing to sickness I could not attend to feeding at the proper time and have consequently had some losses. But it is no use crying, better luck next season.

G.P., Quickburn, June 11th,—Since my last report from here, the bees have been storing honey in fine weather. Yellow and white box have commenced to bloom and beekeepers are more hopeful that their losses will not be so severe as at one time feared. We have had three weeks cloudy weather, which has prevented the bees from going out, but little rain has fallen so far.

J. P., Wingham, July 6th.—The season just passed has been a very poor one for bees, about one third of the honey we usually get. We had no autumn flow at all except a little they gathered from stinking roger or tansy in the latter part of April. Only for that I think we would have lost nearly all our bees. However, better times are coming. The prospects are bright for the coming year. Ironbarks, tallowwood, gum and mahogany are in full bud, so we must keep our faith up for next year.

J.D., Gulligal, June 23,—Can you tell me in your *A.B.B.* if pepper-trees are good honey producers. I see they work well on them. I have about 30 colonies, mostly boxes, started a few frames last year. I think this is a very poor district for honey, got about 700lbs about the end of December, nothing after that and only one swarm. Timber nearly all ringbarked.

[Your district is not such a very bad one. Many reports have come to hand of far worse results. It has been an exceptionally bad season everywhere. Pepper trees are good for producing honey, but the honey is not nice.

A. C., Spring Vale, near Dubbo, July 20th.—Just a few lines to let you know we have had a very hard winter in this district, but I am pleased to be able to inform you that I have had little or no loss with my bees so far. I had a look over them to day and only found three dead out of one hundred and sixty. I believe by the looks of the buds on the various kinds of timber that we are going to have a splendid season in this district. I am going to make all my hives three story this season, as I believe it is the best way to prevent excessive swarming, as I have as many now as I can look after properly.

Mrs. Jennie Atchley, Beeville, Bee County, Texas, U. S. A., May 22nd.—We have had and are still having one of the best honey years for a long time. We will harvest ten tons of honey from our out apiaries this season, some colonies will give over 200 lbs surplus honey. The Holylands are away ahead of any thing we have in the way of honey getting, and the last importation of Holylands we received from Palestine are as gentle as Italians. We have put in a new steam printing press, on which the *Southland Queen* is now being printed. May number will not be out in time to catch this month's steamer but will follow in the next. Wishing you and yours well, and great success for the *A. B. B.*

J. A. B., Cumnock, July 22nd.—I started beekeeping in February last, by collecting black swarms from the bush, The fall was bad for honey, so they got very little, so when winter cams in I had to start feeding. I did this at first by punching $\frac{5}{8}$ holes in the side of mustard tins and hanging them over a hole the same size in the hive, placing a wooden floater in, and running melted wax dowu one side of the tin to give the bees a footing. But I found that the bees used to crowd in and sink the floater in the syrup, and they were unable to get out when the syrup got on them. So I feed now by putting the syrup in the combs, which is the best way of all, in my opinion. I think I will be able to take all my swarms (13) through the winter. I shall Italianize in spring.

L. L. W., Vacy, June 10th.—Just a few lines to let you know how things are here. It has been one of the worst seasons I have experienced since I started beekeeping, no honey the latter part of the year at all and very little in the beginning. The clover never blossomed on account of the dry winter and spring, therefore no swarms till December. Paralysis has visited me again this winter but so far it has been slight. I hope to have a better season next year. The ironbark and stringybark is loaded with buds and the late rains are what they wanted to make them bloom. I have seen great discussion in the *Bee Bulletin* about foul brood in trees. I have seen a great many fallen, and have fallen a great many myself for the bees, and I never saw foul brood, though the swarms mostly take a long time to enlarge on account of the queen mostly dying from one to three weeks after on account I think of the fall when in full laying. Wishing the *A.B.B.* every success.

D. N., Canberra, July 11th.—As regards bee matters, there has been very little doing here for the past season. I did not take a pound from my bees, and they barely stored enough to keep them through the winter. Out of 12 swarms at the end of last season, only four are now alive, but these seem strong and have a good store of honey. Foul brood is a stranger here as yet, but the bee moth gives us a good deal of trouble. We are going to have a splendid honey season next summer. All the yellow box trees (and in my opinion these are the boss honey trees) are fairly loaded with blossom buds ; also white gum, blue gum and stringy bark. All the neighbouring beekeepers are girding up their loins, and preparing to set to work in the spring with renewed ardour, and sundry gin and kerosene cases. We are

a good deal troubled by ants here, especially the large red variety. The advice of the sage, "Go to the ant thou sluggard," is unnecessary. The ant comes to the sluggard, and the curse of his presence, like the rain, falls on the just and unjust alike. Good thing it falls on the unjust or the drought would be nniversal.

G. S. H., Cootamundra, July 14th.—There is not much bee news available from this district at present, all being dormant owing to the continuous cold weather we are experiencing. Foul brood has been pretty rampant at the close of the season, and consequently will weakens stocks generally. I have been one of the fortunate ones. It appeared in one of mine in the early months. I attempted the McEvoy treatment but after 24 hours the bees bid farewell for fresh fields. I promptly cremated the hive, combs and frames, and had no further trouble, but traced the departed bees to their new owner, who hived them but only to re-develop the complaint, and left for the second time. At the end of the season all my neighbours' bees had the disease bad. It appeared in a small nucleus of mine which I immediately destroyed by the aid of the furnace, and have not seen it since. It seems to me that overdoing the extracting has much to do with the spread of Foul Brood, especially should a sudden stoppage to the honey flow take place, as then the bees from over extracted hives must have honey, honestly if they can, but at all hazards they must have it, if even from a disease stricken colony of your neighbours. Present appearances seem to auger a good season in this district, and should the disease leave no ill effects, I hope to be able to report good yields.

[You should have put queen excluding zinc at entrance of clean hive.

L.T., Orbust, June 25th,—With this you will find a small packet containing a piece of comb, a worm, and some minute things found in a hive to-day. I really dont know what they are! Can you tell me from them what is wrong with my bees? I have 6 hives and that is the only one that does not seem to improve. They have plenty stores. But we have had a great quantity of rain here for the past three weeks, and though I had the hive on bricks I found the bottom board quite damp, and a number of dead bees lying on it. They were quite green and mouldy, and inside of them little hard wormy things. I smoked them and looked over the frames, and to me they appear alright, with plenty brood, but the frames felt light I have chaff bags on top and a stout piece of bagging under the bag, and I lined the top of the lid with tarred felt, so as to keep away insects and damp. I raised the hive today on a zinc lined box so as to be well away from the damp. When I tap the hive at night they do not give out the hearty buzzing sound that the other bees do. I must say it is not a strong hive but I am afraid to unite it with the others as I imagine there must be something wrong with them. I hope this will be in time to be answered in your next Bulletin. I enjoy your paper very much and as I am quite a novice at beekeeping, everything in it is most interesting. I have taken up the study of bees not only as a profitable pastime, but having been in ill health, and having to live much in the open air, I find the bees the best amusement one can have. I hope I have not taken up too much of your time, but I don't want to loose my bees, and I want to do the best I can for them.

[The packet contained a moth grub. Keep the bottom board clean, and look out for any moths that my be in the combs. If the hive was strong, or Italians, they would keep them in check. Black bees are conquered by the moths, if the latter are not properly looked after.]

FOUL BROOD AND ITS TREATMENT.

BY THOS. W. COWAN.

[*Per favour of the N.S.W. Agricultural Gazette.*]

NATURE OF FOUL BROOD.

It was at one time supposed that only the brood or larvæ were attacked by the disease, hence the name "foul brood." But Hilbert's investigations in 1875 enabled him to state that it was not only a disease of the brood, but that the mature bees—sometimes including the queen—were liable to be affected by it. In consequence of this the disease is sometimes called in Bee-pest."

In a healthy hive the brood in the combs lies "compact masses, and the larvæ are plump, of a pearly whiteness, and when quite young lie curled up at the bottom of the cells much in the form of a C. When a hive is attacked and the disease begins to develop, the affected larvæ commences to move unnaturally; instead of lying curled up, and being plump in appearance, it becomes extended horizontally in the cell and has a flabby aspect, which indicates death. The beautiful pearly whiteness of the healthy larvæ now changes to a pale yellow colour, afterwards turning to brown; then the dead larva begins to decompose. Although bees remove ordinary chilled or dead brood from the hive, they do not usually attempt to carry out that which has died from the disease, except under conditions which we shall presently mention. As a consequence, the decomposing larva eventually shrivels up and nothing remains but a dry brown scale, which adhers to the side of the cell.

We would here note that chilled broood should not be mistaken—as it very frequently is—for foul brood. In the former the dead larva turns first grey, and afterwards become nearly black (never brown as with foul brood). The dead larvæ are also generally removed by the bees.

When the larvæ die after the cells have been capped over, cells here and there will be found with cappings indented and darker than those of healthy brood. The cappings, too, are frequently perforated with irregular holes, as seen in the illustration fig. 1. On removing the capping from a cell and inserting the end of a match, the latter, on withdrawal, will have adhering to it, as a putrid, ropy, tenacious, coffee-coloured mass, all that remains of the dead larva, often (but not always) emitting a most disagreeable stench. Eventually this mass dries up, and nothing but a dark-brown scale remains. Later on the bees become inactive, to a great extent losing their desire to fly abroad, and numbers will be seen fanning at the hive-mouth, from which in very bad cases the disagreeable odour mentioned is emitted, the smell in extreme cases being noticeable at some distance from the hive.

LIFE HISTORY OF BACILLUS ALVEI.

It will only be necessary to give a brief outline of the life history of *Bacillus alvei* to enable us to understand somewhat of the nature of this disease.

Bacillus alvei is a parthogenic or disease-producing micro-organism, in form cylindrical or rod-shaped, and increasing by splitting or fissuration. The rods increase in length without growing thicker, and at a certain point divide and separate in two, to again increase, divide, and separate. Sometimes, in suitable nourishing media, the lengthening of the rod is not accompanied by separation, but only by repeated division into longer or shorter chains of bacillus-filaments, or leptothrix. The rods are also provided with a flagellum at one end, and are endowed with the power of locomotion. Under certain conditions bacilli have the power of forming spores, in which case a speck appears at a particular point of the bacillus, which gradually enlarges and develops into an oval highly refractive body, thicker but shorter than the original rod. The spore grows at the expense of the protoplasm of the cell, which in time dissappears, setting free the spore. The latter formation closes the cycle of the life history of the bacillus. The spores—representing the seeds—retain the power of germinating into bacilli when introduced into a suitable nourishing medium, and at a proper temperature, even after the lapse of long periods of time. At germination the spore first loses its brilliancy, swells up, and eventually its membrane bursts in the middle. The inner part of the spore then projects through the opening, and grows to a new rod.

The spores also possess the power of enduring adverse influences of various kinds without injury to their vitality, so far as germinating is concerned, even if subjected to influences fatal to bacilli themselves. The latter are destroyed at the temperature of boiling water, while the spore apparently suffers no damage at that temperature. Freezing also kills the bacilli, but not the spores. In the same way chemical reagents, completely destructive of the bacilli, do not affect the vitality of the spores. Carbolic acid, phenol, thymol, salicylic acid, napthol beta, perchloride of mercury, and many other substances, even when considerably diluted, prevent the growth of bacilli, but have no effect whatever upon the spores. The great resistance of spores to high and low temperature, to acids and other substances, is due to their being encased within a thick double membrane.

There are certain chemical substances which evaporate at the ordinary temperature of the hive, and whose vapours, while not actually killing the bacilli, arrest their increase or growth. Among such substances are carbolic acid, phenyl or creolin, lysol, eucalyptus, camphor, napthalene, and several others.

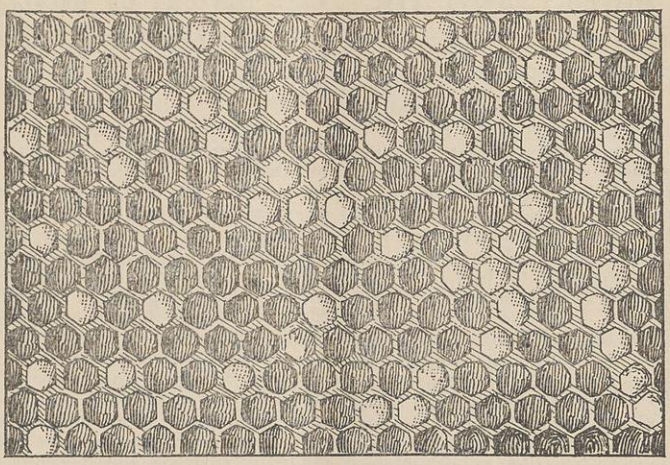

Fig. 1.—Foul brood in an advanced stage.

If a healthy larva be taken, and a small quantity of the juice from its body spread on a glass slide be placed under the microscope, we shall see a number of flat globules and blood-discs (fig. 2.), amongst which molecules are in constant motion. If, on the other hand, a young larva diseased, but not yet dead, be treated as

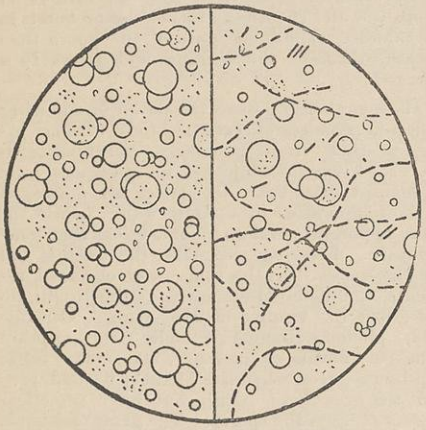

Fig. 2.—Healthy juices. Fig. 3.—Early stage,

above, its juices will, when subjected to a similar examination, be seen to contain a great number of active rods swimming backwards and forwards among the blood-discs and fat globules, which latter, as will be noticed (fig. 3.), are fewer than those in the juices of a healthy larva. We shall also find, as the disease makes rapid

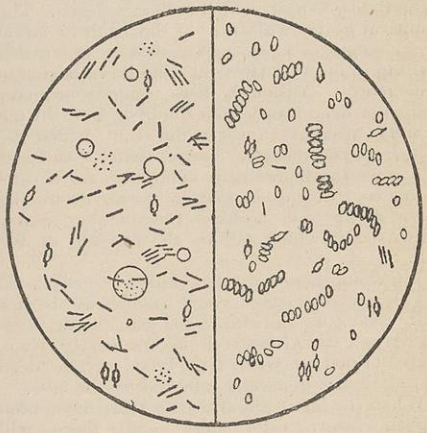

Fig. 4.—Later stage. Fig. 5.—Last stage.

progress, chains of bacilli—the leptothrix form—becoming common. In fig. 4. we have a representation of a latter stage of the disease when larva is dead and decomposing. Here the fat and albuminoids will be found disappearing, and the bacilli assuming the spore condition. In fig 5 we see the disease in its latest stage, when the whole rotten mass has become coffee-coloured, or has dried to a scale. Blood-discs, fat globules, and molecular movements have disappeared, only a few bacilli are seen, and at last, as the nourishing material becomes exhausted, only spores remain.

It will now be understood that, owing to the great resistance of the spores, chemical sub-

stances have no effect at all upon them unless administered under such conditions as would destroy the bees. From this it will be seen how great is the difficulty in curing foul brood unless the disease is attacked in its earliest stages.

It has previously been stated that adult bees are sometimes attacked by the disease. To prove this, it is only necessary to take a weakly bee on the point of death, and examine what remains of its fluids under the microscope, when a large number of active bacilli will be found. Such bees leave the hive to die, whereas the infected larvæ remains in the cells, unless disinfectants to arrest decomposition are used, in which case the bees remove them from the hives.

CAUSE OF THE DISEASE AND MEANS OF ITS PROPAGATION.

Although many theories have been advanced, the causes of the disease are not yet quite known. Experience has, however, plainly shown that with foul brood—as in all epidemic diseases—the weak, sickly, and badly nourished are attacked and become centres of infection to others. So rapidly does the disease spread by contagion that in one season, unless precautions are taken, a whole neighbourhood may become affected in a short time.

Combs which have contained foul brood retain the spores. The queen lays eggs in the cells and the workers deposit their honey and pollen in them. Both honey and pollen in this way become vehicles for the transport of the disease to the larvæ in the process of feeding these by the nurse-bees. The workers in endeavouring to clean the combs scatter the spores, which may also be driven out of the hive by the currant of air produced by the fanners at the entrance, in their endeavour to rid the dwelling of the foul odours.

As colonies become weak, bees from healthy hives rob them, and thus carry off the germs of the disease along with their ill-gotten gains. Bees in straw skeps often die without the owners knowing why, and as these skeps are frequently allowed to remain on their stands, in the hope of catching a stray swarm, the result may be imagined. Formerly, when few bees were kept, and these in the same garden, and swarms seldom sold ont of the neighbourhood, it was possible to keep foul brood within bounds by destroying the bees. Now, however, the facilities for its propagation are greatly increased by the large traffic there is in bees. The beekeeper even may himself be a cause of spreading the pest by indiscriminately manipulating first diseased and then healthy hives without taking proper precautions to disinfect himself or his appliances. Bee-keepers also, who have not succeeded with their bees in consequence o foul brood, have been known to sell by auction hives in which the bees have died, without the slightest attempt at disinfection on their part, the purchasers being frequently beginners who have no idea of the danger they are incurring.

METHOD OF TREATMENT.

The superiority of the modern frame hive over the straw skep is here strikingly apparent. The latter was as a sealed book to its owner, who had no means of detecting the presence of foul brood except by outward signs, and these, as already pointed out, are only manifested when the disease is in its last and most virulent stage, at which time any treatment short of total destruction is entirely hopeless. The owner of a movable frame hive, on the contrary, can, by the facilities it affords for examining the combs, at once detect the disease in its earliest stages, and adopt measures for arresting its progress or for stamping it out altogether. Unfortunately the disease is seldom noticed on its first appearance, but it has nearly always to be dealt with when more or fewer spores are already in the hive.

If, on examining combs, to all appearance healthy, with brood compact and larvæ bright and plump, we find here and there a cell with young larvæ moving uneasily, or extended horizontally instead of curled up, and changing to a pale yellow colour, we at once detect the first symptoms of foul brood. The further progress of the diiease can, at this stage, be arrested by feeding the bees with syrup, to which three grains of napthol beta are added to every pound of sugar used. This is employed by the nurse-bees in preparing food for the larvæ. We can further assist the bees by putting napthaline or eucalyptus in the hive. The bees then usually remove the dead larvæ.

Apart, however, from experienced beekeepers or trained experts, very few are fortunate enough to detect the disease at such an early stage, or to effect a cure so easily, and it becomes adviseable to describe the method of procedure in ordinary cases,—that is, when the combs have irregular patches of brood, with sunken and perforated cappings to the cells (fig. 1.) containing the coffee-coloured mass inside.

If the colony be weak, destruction of bees, combs, frames, and quilts, together with thorough disinfection of hives, is by far the best course to pursue. We thus destroy the spores, and so remove the source of infection. If, on the contrary, the colony be still strong, the bees may be preserved by adopting the following method :—An artifical swarm is made of the bees, which are then placed in a straw skep and fed on syrup medicated with napthol beta. The frames, combs, and quilts are then burned. The hive is disinfected by being either steamed or scrubbed with boiling water and soap, and then painted over with a solution of carbolic acid (one part of Calvert's No. 5 carbolic acid to two parts of water), and when the smell has disappeared it will be ready for use. The bees are allowed to remain in the skep for forty-

eight hours, by which time the honey they may have taken with them, and which might contain spores will have been consumed, and the diseased bees will have died off. They are then shaken from the skep into a clean frame hive, furnished with six frames, fitted with full sheets of comb foundation, and are fed with medicated syrup for a few days longer. The skep used as their temporary home should be burnt. All such work should be done in the evening when the bees have ceased flying for the day, to avoid chance of robbing.

The bee-keeper in his endeavours to rid his apiary of foul brood must also raise to its proper standard the lowered vitality of the bees, which enabled the diseased germs to get a footing. This he must do by keeping the bees strong with young and prolific queens, good wholesome food, cleanliness, and proper ventilation.

Foul brood is extremely contagious, and being prevalent in so many places, it is adviseable to adopt preventive measures against infection. Napthaline in balls is generally used, and two of them are split in half, and placed on the floorboard of the hive in the corner farthest from the entrance. The temperature of the hive causes the napthalene to evaporate. All syrup used fo feeding should also be medicated with naptho beta. Clothes, appliances, and hands must be washed with carbolic soap, and other articles disinfected by spraying with a solution of I oz. Calvert's No. 5 carbolic acid in 12 oz. of water.

It was formerly thought that honey was the only source of infection, so that if the bees were starved until they had got rid of the honey carried by them from the diseased hive a cure would be effected. We now know that this starvation method, good as far as it goes, has always failed from the fact of its not embracing disinfection of hives and appliances. The spores which were not destroyed, and whose vitality was only latent, were possibly lurking in hidden places to be some day brought into contact with suitable nourishing material, when they would again start into growth, and thus the disease constantly broke out.

From what has been said, it will be seen that unless great precautions are taken it is very difficult to get rid of the disease. It thus becomes obvious that those who fail to realize the danger of infection, and who will not take proper means of ridding their apiaries of foul brood, or of preventing its introduction, are a real danger to the industry.

If foul brood were under Government inspection, and all bad cases promptly dealt with by destruction, the disease could soon be stamped out. This is what the British Bee-keepers' Association have asked the Board of Agriculture to bring about, and by this means the industry would receive an impetus which would benefit not only beekeepers, but also—to a far greater extent—farmers and fruit-growers.

A German paper says: In extracting from oblong frames the bottom bar should precede and the top bar follow, with regard to the direction of the motion. * * * In France honey sold at wholesale is generally put up and delivered in the wood, white honey in kegs of 99lbs., dark and strained honeys in barrels of 660lbs.; but in Switzerland the majority of beekeepers prefer to use tin, and both at wholesale and retail deliver it in cylindrical cans holding 5½ to 55 lbs. These are provided with a bail and cover to fit, around the rim of which is pasted a strip of cotton cloth or paper * * * For samples, and packages of from 1 to 25 lbs., tin packages with a special fastening are now manufactured at a slight cost."—*Bee-keepers' Review.*

Mr. G. M. Doolittle, says:—The date of swarming is put on each hive, thus: "N. S. 6—21" being put on the swarm, and "Sw'd, 6—21" on the old hive, if that is the date. On the evening of the eighth day I listen for a moment or two at the side of the old hive, and if swarming has been done "according to rule" I hear the young queen piping, when I know a young queen has hatched, and an after-swarm will be the result if it is not stopped. If no piping is heard, I do not listen again until the evening of the 13th day, for the next rule is that the colony swarmed upon an egg or small larva being in the queen cell, which allows the queen to hatch from the 12th to the 16th day after swarming. If no piping is heard by the evening of the 17th day, no swarm need be expected. When it is heard, which will be in nine cases out of ten, on the eighth day, I go early in the morning and take every frame out of the hive, shaking the bees off of each (in front) as I take them out and return them again, so I shall be sure and not miss a queen-cell, but cut all off, for we know that a queen has hatched. This is a sure plan, while I have found by experience that none of the other plans given are sure of the prevention of after-swarms.

QUESTION THIS MONTH.

C. U. T. BURKE.

68.—What is the most durable timber for making hives—both painted and unpainted?

JOHN BURNS.

69.—As I dont want any more increase what is the best plan to adopt?

70.—How are you cleaning your kerosene and castor-oil tins.

F. C. PULLEN.

68.—Good seasoned cedar every time, bar nothing.

69. Give them plenty of room and keep the queen's wing cut. It won't prevent swarming, but it will help to keep down increase.

L. C. WOODHOUSE.

64.—The best way to feed bees is to leave enough honey in the hive in the Autumn, to last them through the winter, you can easily take it out in the spring if it is not needed. I do not believe in feeding if I can help it, still you cannot always help it after a bad season or if the flow stops suddenly, you must feed. The way to feed is syrup poured over the combs, and hang in the hive of an evening to prevent robbing.

65.—Cannot say.

CHAS. U. T. BURKE.

69.—Keep the extractor going during the swarming season. Allow only enough honey to remain even in the brood nest to keep brood rearing going on briskly, and you have swarming thoroughly under control.

70.—Wrinse your kerosene and bastor oil tins out well, three times with hot water and Hudson's extract of soap, and then leave in open air for six hours. Don't be afraid of putting plenty of the extract in the water as it is very cheap, price 1/- per dozen packets.

A. J. BROWN.

68.—So far I have had better results from using American redwood. It makes light, durable hives.

69.—Have pure Ligurian bees and keep the extractor going. With plenty of room this strain of bees are the nearest non-swarmers procurable..

70.—I never use this class of tins. I prefer to buy new ones, but I know that strong lye, made of lime and soda boiled together, will remove the oil and smell from such tins.

J. S. DICK.

68.—Cedar or true northern river beech is the best in the colony, the latter most so for durability and freedom from warping or shrinking.

69.—Cannot say, as I kept mine from swarming or dividing last season till they became a nuisance by pouring over the sides of my hives when opened that they forced me to divide.

70.—I cut the top out of all I get and use them for bailers in my oyster punts which is all they are fit for and not good honey.

H. NANCARROW

68.—In my opinion redwood is most suitable, either painted or unpainted.

69.—Rob regularly while honey flow is on and extract from bottom chamber a few bars, breaking down all queen cells at least once a fortnight. You ought to extract in a good season at least once a week. You will get more honey and have better results generally than by leaving hive too long and materially assist in preventing swarming.

70.—I don't use kerosene tins now, but when I did I used to put them in a large copper, with plenty of soda to form a good strong lye, and then boil for an hour and rinse with boiling water.

A. J. PANKHURST.

68.—I have had three years experience in the frame boxes and have tried the American redwood and also the colonial beech, and I find the latter far superior to any other I have used. It will do with or without paint, and it will not warp like the American wood, and it will take the paint well. I always use white paint. I have tested the quality and durability of colonial beech and would strongly recommend it to beekeepers, as it is cheaper and better than any other I have used. I have forty boxes and supers of beach and twenty of redwood, and I intend buying twenty more of beech ready for swarming time.

70.—I clean my kerosene tins with lime and washing soda. Boil the two together, pour it in the tin and let it stand for a day or two.

G. PACKHAM.

68.—My hives are made from kerosene cases for cheapness, which are all painted. For unpainted, red wood is the only timber that I know of, that will stand the weather.

69.—Am yet to be convinced that it is possible to stop swarming altogether, as some will come off do what yon may. Swarming may be greatly suppressed by giving plenty of room, well shading, and free use of the extractor.

70.—I have used a stove as described as under Molong, in October *A. B. B.*, but have since found that a brick oven will answer better, as more can be done in less time. Get your wife to fill the oven after the baking is done. Care should be taken not to have the oven too hot, or the solder will run. The heat soon evaporates all kerosene and leaves the tin as clean as new. Caster Oil tins are not worth the trouble of cleaning.

J. T. ADAMS.

68.—Rather an open question (some might say red gum or iron bark). Have only had experience with American and New Zealand pine

the latter has a knack of always loosening its nails and going out of square when handled.

70.—Melt out bungs or round pieces in corner (I hold them over a small fire in forge a few seconds, then tap on the block, then wipe with coarse cloth while hot). Mend up all holes or cuts, empty all oil out and store. When washing use 4lbs lime, 4lbs soda, boiled in 6 gallons water 40 minutes, clear and pour off one gallon in each tin. Have a cork to fit bung, and shake. All oil is turned into soap, which helps it along, then rinse well, dry, and sun them well, of course heating or boiling the lye after every batch, if much oil accumulates boil till it turns to soap. or skim it off to save time, but if they are laid away some time there will be little or no kerosene left in them.

THE WASP.

65.—I have grown yellow box trees and have had no trying at all as indicated by the question. If you cut the tap root too close to the surface it will die and no more about it. The rule is to have as much *tap* below as you nearly have wood above and if you do this the tree will grow provided you plant properly. But the best rule is to take up little trees, say from six inches to one foot high and take as much clay around the roots as you can carry on a shovel and drop all into a prepared hole (not full kerlop), without breaking the earth, put fine clay around it and a bucket of water to consolidate it, a stick or two to prevent cattle from horning it and then go and plant another. Plant in the dead of winter when no sap is moving. Have planted ironbark in the same way, but never attempted white box. I think it is too difficult and irritating for the Wasp. Ten years will see yellow box blooming and I suppose a thousand years will see it fit to rear oppossums in. I have yellow box trees on my land that must have been twenty year old saplings when the Ark was built.

W. S. PENDER.

68.—We are pleased that this question has been asked. We have refrained from speaking on this subject before, as probably you may say we are prejudiced, even though some manufacturers have done all they can to cry down colonial timber, when they have never tried or perhaps ever seen any of our brush timbers. We expect some of you will be a little surprised to hear that we have a timber almost as light as the American pine, takes the nails as well, is tougher, more durable, and does not give and take with the weather like some imported timbers. This timber which is called beach is found all along the northern coast of N.S.W. As to durability our timbers are so well known all over the world for their lasting qualities that it is almost needless to say anything on this point, but we would like to state that a board has been known to be lying on the ground, exposed to the sun for ten years and it was as good then as the day it was cut. We have been shown hives made from this material in use for ten years exposed to all weathers and were perfectly sound. We have now been using this timber for the last two years with good results, and judging from the satisfaction it has given our customers we feel certain in saying that in a short time it shall be used solely for this work. It is so much liked by some of our customers that we received orders for hives to be made of this material—if you cannot supply them don't send redwood.

T. BOLTON, VICTORIA.

66.—I would not knowingly purchase a queen from a district or apiary where foul brood was prevalent, believing from actual experience as well as from other sources that a queen can spread foul brood, and that the queen is often responsible for the failure of their starvation method that many have written to me of, Mr. Burke's experience nothwithstanding, p 86.

67.—Will yellow box stand transplanting to a different soil? Who has done it? It naturally prefers ridges of limestone formation to flat and wet country, I am informed.

68.—I have had nothing to equal some hives made of Californian red pine. The corners and joints are the same as when new ten years ago. Simple, square, rabbited corners nailed both ways and oiled before nailing up, painted afterwards. Many do not remember that in making hives it is important to have the heart side of the wood outwards as explained in Root's A.B.C.

69.—After making good any winter losses, should you have a continuous swarming and desire no increase, hive your swarms on old stand with all the bees and supers, but remove the brood cases to the top of some other hive to hatch out, repeating the process when the latter hive in its turn swarms. You thus gratify the swarming desire and yet have no increase and require no extra boxes. This management is applicable to a healthy apiary. If you have foul brood, distributing the brood is not admissable except to unhealthy hives and in that case I should pile them high on such hives, two or more according to the size of the apiary being selected for the purpose and preferably with queen, and every nine days or so draft off a swarm from these piles, or less frequently, and melt down the combs. Get your boxes clean to hive your later swarms in.

W.E.B.

68.—Perhaps there is no country in the world with such a great variety of timbers as N.S.W., and I may also add so little known. The vast scrubs of the North Coast districts abound with hundreds of different kinds of timber, for this or any other purpose. After fifteen years' practical experience with frame hives, I know that they cannot be excelled, and numbers of them will last out the imported stuff that is flooded on to the markets of N.S.W. by the ruthless importer, and backed up among others by numbers of apathetic beekeepers, who are either ignorant o

their value, or too much prejudiced in favour of the imported material to buy any other. Listen and you will hear some of these beekeepers grumbling that people use the imported and adulterated honey in preference to their finest eucalyptus. They little think that they are just as unpatriotic themselves in purchasing foreign rubbish, and passing their own and better product over. Some may think these timbers too expensive. But no, it is otherwise, and for the benefit of those that do not rank with the above alluded to, I will just mention a few varieties, with some remarks and approximate cost at mills in Richmond River district.

First of all I will place that king of woods, Red Cedar. This is the best known of all our timbers, so it needs little description. Perhaps some may not be aware of its durability, but logs of it have been known to lay in the damp, mouldy scrubs for a great number of years, and under the decayed sap wood it has been found as sound as the day it was felled. Approximate cost—according to widths, from 16s. to 20s. per 100 feet.

White Beach,—This very durable timber is extremely soft aud easy to work; shrinks very little, even when used quite green. It can be specially recommended to apiarists who cut out their own frame stuff. Approximate cost—about 15s. per 100 feet.

The Beech.—Is quite a different timber to white beech. It is durable and soft, somewhat resembling cedar. The stoutest nails can be used without much danger of splitting it. It requires to be well seasoned before using. I have a good number of hives made of this wood, and can recommend it. Approximate cost—10s. to 14s. per 100ft.

Blue Fig.—A snowy white timber, very soft, and light, and as durable as the best of foreigners. It makes a good hive material, and should make excellent sections. Approximate cost—10s. to 16s. per 100 feet.

Brown Pine.—A very durable timber, soft and light, of a brownish colour, but it has the fault that imported Redwood has, viz., it is too free.

Rosewood.—Is a somewhat heavier timber than the above mentioned; has a pleasant scent, is easily worked. Hives made of this are said to be moth-resisting. No one that I know of has seen any of it decayed, so I suppose it will last a century. Approximate cost—10s. to 16s. per 100 feet.

Red Bean.—Resembles rose wood in every respect, except that it is scentless. Cost, same as rose wood.

Richmond River Pine.—A soft white timber, with a yellow tinge in it; dresses up well, and holds the nails well. Hundreds of thousands of feet are now used in the box making trade. It is not durable, as those before-mentioned, but will hold its own with a good number of the imported woods, and will last a fair number of years if painted well.

Teak, Ironbark, Mahogany, Long Jack, Budgeree, Tallowwood, &c., &c., hard sorts, make excellent hive stands.

These are a few of the best known, and cannot be too highly recommended; and quite deserve the praise they got at the World's Exhibition.

Advance Australia.

69.—I believe in a moderate increase. If you are afraid you are getting too many hives, unite in the early spring.

70.—I have tried nearly all the ways given from time to time and find them more or less deficient and at last took to experimenting, and found out that dry steam will clean a kerosene can quicker than anything else. In conclusion I don't believe much in kerosene tins for honey, it prejudices it. Use good cans and get a higher value.

QUESTIONS NEXT MONTH.

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?

VICTORIAN CONVENTION.

H. H. DAVEY.

I made my suggestion to the N. S. Wales Convention; but it seems very likely to go the way that all suggestions usually go, unless something is done. There are enough dead convention heroes (both N.S.W. and Victorian), without letting another one die for the want of effort. May this one live to carry us to *our market.*

Most beekeepers seem to think it is to their detriment to allow that our honey has eucalyptal qualities; and why? Simply because a few homerings call that up as a disfavour; they

(mind you), not the public. And until the public get at it, we cannot even allow, such qualities are a detriment. Would not the public rather think it a term of favour ?

Now I thoroughly believe in these qualities of the eucalyptus trees, they are an established fact ; and I also believe in the Eucalyptus tree quality of any product from them.

The nectars from which the bees make honey are the sugars from the trees tissues, and are just as much a product of the tree as oil and eucalyptus from the tree's tissue, and must to an extent partake of the tree, not *partake of the oil.* (Who said oil ?)

And what else flavours it but the qualities of the trees ?

Some will say "It is not true," but I am prepared to prove it true, as far as possible if needs be.

No doubt there would be a future before eucalyptus honey. The honey is liked now, and if it had a medicinal virtue somewhere about it, though infinitesimal in proportion, it would be rushed. Why as I write, I hear that the Manchester Delegates are sending a trial consignment home, under its proper name, *Eucalyptus* (to be branded and sold under its proper name, mind you.) They think there might be a future before it, and I tell you when they think a thing it cannot be very far out,for they are pretty long headed, and can see a thing or two, and shall these come out here, and show us our opportunity, or shall we, finding it out ourselves, use it for our own good ?

You, Mr. Editor, believe that we should go in this direction might and main ; and I say further, that Victoria and N.S. Wales should, combine, export *Australian Eucalyptal Honey*, and retail it in the English Markets at their own expense (what would the expense be with the two colonies combined ? A mere item per head and worth it a hundred times over.

If it caught on (as most likely) it would soon be at a premium there and here also.

One season of united effort would test it. Twenty or thirty beekeepers might not be able, but the whole of us *together* are able for anything at little *cost to each.*

A depôt ; a man with an interest in the honey, and in Australia, with a knowledge of London, etc., would return us many fold, be sure of that.

When our Eucalyptus trees are world-famed and sought for the world over, what are we doing to let our honey be called rubbish and no more of value than treacle, that refuse from the purifying of sugar. I tell you we are making a big mistake. Our honies are of a superior quality rather than inferior to others ; colour is not quality ; flavour is not quality so much as properties contained in solution with the different sugars of the honey. They make the quality, and none can approach us in that ; and will you sell it as refuse ? Hold it back until its value is offered, and you won't wait long. If you don't think it worth any more than treacle, why not label it *Golden Syrup* or *Treacle* ? it would do just as well.

But friends, no more of this ; let us realize that *our honey stands alone,* and that our great *opportunity* has come. The cry is "a fair price for our honey," well, here it is, and I tell you, "*a fair price is a premium*," and I mean to say it. But its value must be recognised, first locally, and then depend upon its universally, world wide ; by the beekeepers themselves. first and then by the public, the world,

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G.E.O., Mount Morgan, Aug 13th—You asked me to send you some bee-news Well, I should be glad to do so, but the fact is there is none to send, for I might say bees are dormant on account of the bad seasons we experienced the last two years. I have eight hives and managed to keep them all winter, but had to feed while a lot of others about 30, have lost all or near it. I am looking forward to better times this season.

The Diet of Mecklenburg (Germany) has issued a decree that foul-broody colonies shall be destroyed. But the owners receive three-fourths of the value of the sulphured colonies.—*Bienan Vater*

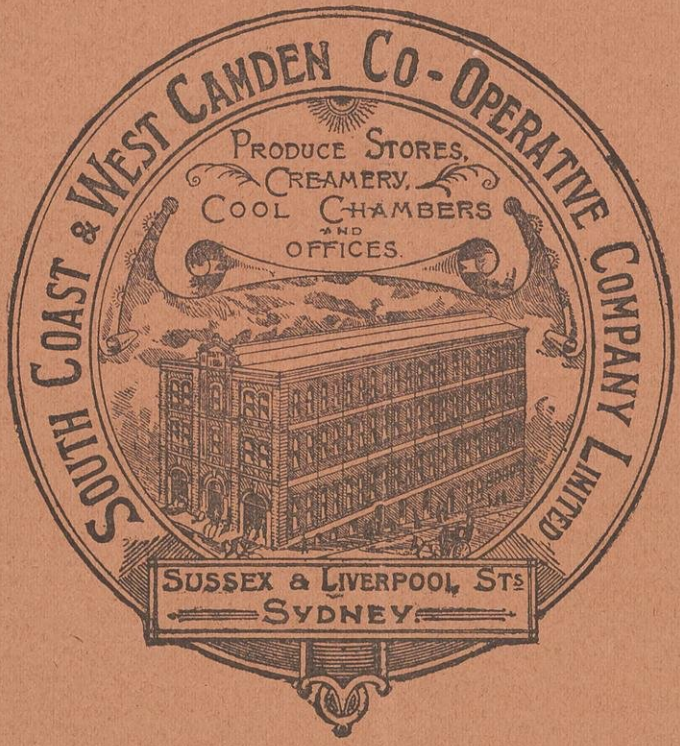
A. J. Brown, Parkville,—Bee matters are promising splendidly, every here queen in the apiary is laying, although nearly all had 6 or 8 weeks rest at mid-winter. The colonies are in splendid order, some are storing in supers already. I have colonies that can fully occupy 10 Langstroth frames now, although the winter was very severe, snow having fallen within a mile of my residence. The credit of having them so strong I place solely upon the queens. Their condition may be judged by the fact, that I can show drones of last seasons' breeding in a populous colony where a laying queen is pegging away at a great rate. Every thing points to a good strong flow. White and yellow box, ironbark and red gum will open up in about a month.

Thanks.

THE members of the Bacchus Marsh Beekeepers' Association herewith tender their best thanks to the following gentlemen for so kindly sending information as to the best way of treating Foul Brood:—Messrs. R. Beuhne, T. Lorac; T. Bolton, Dunkeld; J. McFarlane, L. Adhurst; W. Abram, Beecroft; A. J. Brown, Parkville; E. Tipper, Maitland; J. M. Wallace, Mount Vale; R. H. Jervis, Moss Vale; A. A. Robbets, Muswellbrook. The reading of the different letters and the ensuing discussion occupied nearly two hours and will not be soon forgotten by the different members of our association.

GIDEON HOLLIS.

Honey Sales a Specialty



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