The Australian bee bulletin. Vol. 8, no. 4 July 24, 1899

West Maitland, N.S.W.: E. Tipper, July 24, 1899

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A JOURNAL DEVOTED TO BEEKEEPING

MAITLAND, N.S.W.—JULY 24, 1899.

We missed Mr. Seabrook at the Convention.

Mr. W. S. Pender looks well after his trip to America.

If you have a photo of your apiary, send it along.

Mr. Allport says Federation will lose the Riverina trade in Sydney.

Sorry to have to hold a lot of real good correspondence over till next issue.

Have you your hives painted, and spare ones ready for the spring increase.

We will be pleased to receive and answer questions on beekeeping matters.

207 tons of butter was the Richmond River output for the month ending March 25th.

The *A. B. Bulletin* has again been appointed the official organ of the Victorian beekeepers.

Mr. H. L. Jones said at the Convention, he had had a bee with a worker head and drone body.

Messrs Hebblewhite informed us that orders for hives, etc., for the forthcoming season were coming in freely.

In our next issue, will give our own experiences with Long Idea hive. After that will tell our way of producing wax.

We had the pleasure of meeting Mr. L. T. Chambers, who was on a visit to Sydney. He is interested in pushing some wire fencing.

We were pleased to see Mr. Bradley at the Convention. There was however, some warm work between him and the president, Mr. A. Gale.

The *Co-operator* for July gives a fine illustration of Wool Stores in process of construction at Pyrmont, with a capacity of 30,000 bales.

During winter evenings read up your old numbers of *A. Bee Bulletin*. Have you them bound? If not, you don't know what you have forgotten.

The death is reported of Mr. Miles Morton, the inventor of the fence separator, recently much spoken of in America.

Messrs Hawken & Vance are sending several tons of honey to England to try the market. We shall be glad to hear the result of the venture.

Mr. Stephenson says the English buyers buy only in large quantities, and will only value a good sample when they can secure a continuance of a quantity of same.

Mr. A. A. Roberts of Muswellbrook, has not enjoyed the best of health of late, but he is now getting better, and looks forward hopefully to his spring trade in queens.

Miss Jennie Tipper, daughter of Mr. E. Tipper, editor of the *A. Bee Bulletin*, was on Wednesday, June 21st, married to Mr. Arthur Fountain, of Bolwarra, West Maitland.

The *Home Garden* for July has a beautifully coloured almanac supplement, the illustration being samples of flowers as produced by seeds supplied by Mr. G. Helmsley, of Moss Vale.

It has been proven by German scientific beekeepers that there may be thousands of laying workers in a hive, and Donhoff has found bees returning laden with pollen filled with ripe eggs.

Mrs. G. Bloxham presented her husband with a daughter on June 4. For several weeks her life was despaired of, but we are pleased to be able to state she is now able to get about.

The French beans we planted some two months since have come into blossom. The frosts blackened the bloom. All the same, however, on warm sunny days the bees were working on them strongly.

Mr. Roberts, of Waverley, gave us the following receipt for paint for hives: 1 gallon raw oil, 14lb white lead, Italian ochre for staining, 4lb zinc white, if you like a little boiled oil. This will paint 100 boxes.

While in Sydney we saw frames with slits on under side of top bar, sufficiently large to place edge of foundation in, and a slip of wood, ¼ inch square and length of under side of bar, to wedge same in. It seemed very convenient and trouble saving.

Last winter was a mild one. White box bloomed in winter, yellow box bloomed early and was all over by first week in December. Result a poor crop. This year has been a severe winter. Snow on the mountains, and a number of heavy frosts. Also a fair amount of rain. Will we have a better flow this year?

While in Sydney we purchased a couple of sections, which we were told had secured prizes at the recent Royal Agricultural Show. They were indeed nice looking, and by looks were worthy of it, but—the honey was inferior, and the "gob" of wax immense. If only such were put in the market the demand would soon cease.

During this month breeding will begin, and every care should be taken to keep hives dry and warm, and see they do not run short of stores. Artificial pollen, in the shape of flour, may be given if necessary. Inside feeding is far preferable to outside, the latter leading often to robbing, and feeding also more bees than you own.

A writer in the South Australian *Garden and Field*, utilises human manure. The wall of the W. C. is cemented, and small wagon containing a tray with ashes on bottom is used to carry the manure to the "graves," grate ashes or dry earth are well utilised between layers. There is nothing whatever objectionable in the working, and a most valuable fertilising product is produced.

Mr. Trahair's venture with young women canvassers was not a success. They complained of it being too hard work, after a little experience. Judging, however, from a visit to his place at Newtown, Mrs. Trahair is conducting a big retail trade, and they must dispose of a large quantity. We presume it is pretty well known he is a big man among bicycles. If you want one give him a trial.

The R. M. S. Alameda, which arrived in Sydney on July 3, from San Francisco, brought 125 cases honey!! Would this be Japanese reared honey from Honolulu? Do New South Wales beekeepers want it here?

The following item, copied from the *Melbourne Leader*, may be interesting to beekeepers:—"The difference between the Danish co-operative system and the agency system, is this: The Danes market annually £8,000,000 worth of butter without paying any concessions. Last year, we (Victoria) paid £70,000 to agents in commissions for marketing our total output of £800,000 worth."

We would call attention to supplement. Announcement of sale of contents of steam bee-hive factory, apiaries, etc., of R. J. Cribb, Dunmore Estate, Milton Road, Brisbane, Queensland. It is to be sold by tender. We would ask our readers to read the circular over carefully, and see if there is not something they would like to possess on the list.

July 13th, being a bright, sunshiny day, we opened a few hives to see how they were doing. We were more than pleased. We had not touched the slight fall flow, had put new linoleums on top of frames in all, and curtailed the entrances, so in each hive now there were from 20lb to 40lb of honey. In several the queen had started laying, in others space was being cleared for her to lay in. We saw no dead bees, and the swarms were all strong and healthy.

We acknowledge receipt of accompanying from our old friend and South African correspondent, Mr. Sterley. It arrived too late for our attendance, nevertheless we wish the happy couple every happiness and prosperity:—

Mr. & Mrs. J. Sterley, request the pleasure of Mr. E. Tipper's company on Tuesday, 20th June, 1899, to celebrate the Marriage of their Daughter Irene with P. B. Chalmers. Ceremony, at 2 p.m., Congregational Church, Pearson street, Port Elizabeth. Reception, at the Masonic Lodge, Parliament street, at 2.30 p.m.

We are making arrangements to illustrate each number in future. Doubtless our readers understand the *A. Bee Bulletin* is carried on on its own merits alone. We are not supply dealers, but being honey producers, feel it a duty to champion the cause of those who produce and have honey to sell, so these illustrations will come off the small margin of profit on the *A.B.B's* production, and we trust our supporters will appreciate same.

Now is the best time to remove or rearrange hives. For the latter we gave instructions, page 46 May number. We did not then say "leave the cover off," because the weather being cold and the swarms small there would not be much danger of smothering, but as the weather gets warm, and the swarms increase in number, the wire cloth on top is all that is necessary. In removing hives, a pair of lifting irons, catalogued by all supply dealers, will be found very useful. In swarming time, to, they are especially handy. We would not be without them. Two persons take one each, hitch one under bottom at each side, and the lifting or carrying about is no trouble at all.

VICTORIA.

AN IMPORTANT MEETING.

A meeting was held at the W.C.T.U. rooms, 140 Flinders-street, on 29th June, under the auspices of the Victorian Silk Association, for the purpose of adopting new rules, and the consideration of the requirements of the bee industry. Mr. W. T. C. Kelly occupied the chair in the absence of Mr. J. Brake, M.L.A. The new rules for the guidance of the Association were adopted. The principal features of the rules are the altering of the name of the Association, which in future will be the Victorian Silk Culture and Rural Industries' Association, and the formation of a committee to consider the requirements of the bee industry Representative beekeepers from Tooborac, Dunkeld, Horsham, Port Fairy and Avoca and several districts around Melbourne were present. Mr. Beuhne, Tooborac, moved that the beekeepers present approve of the action of the association in forming a committee to assist their industry. Seconded by Mr. Bellinger, Horsham, and carried. It was also resolved that the following gentlemen, representing the beekeepers of Victoria, be appointed on the beekeepers' committee, viz., Messrs. Bolton, Dunkeld; Beuhne, Tooborac; Ballinger, Horsham; McFarlane, Lyndhurst; and Wilson, Avoca. It was further resolved that a deputation wait upon the Minister for Agriculture, for the purpose of urging the Government to introduee a Foul Brood Act, as early as possible.

Several gentlemen spoke regarding improved methods of marketing honey, but it was considered advisable to refer this matter for further consideration by the committee. The following suggestions were also referred to the committee for further consideration, viz:—1. To consider how best to protect the natural honey resources by prevention of illegal destructiou of timber on Crown lands and leases. 2. To consider how best to increase sales of honey in centres of population. 3. To supply beekeepers with information regarding diseases, &c., adapted to Australian conditions. 4. To obtain a proper classification and correct naming of the eucalyptus trees of the colony. 5. To consider disputes between beekeepers and agents, and beekeepers and the railways, re freights, &c.—*Leader*.

THE BEEKEEPERS' ORGANIZATION.

We have sincerely to congratulate the above on its formation, and hope that its efforts will result in good not only to its own members, but also the industry throughout the colony generally.

The *Leader* says:—There are many advantages in this combination of the beekeepers with the Silk Culture Association which will be readily appreciated by beekeepers. The bee industry will have the benefit of a Government grant to the association, the assistance and sympathy of influential men, the free use of office and room for meetings and the services of a paid secretary, ensuring prompt attention to correspondence. The meetings of the council are monthly, and the bee committee will receive and decide on suggestions forwarded by members. An annual general meeting will be held in May, when a report will be presented, officers elected and vital questions decided.

The new organisation differs advantageously from the old association in that there is no one connected with it whose interests are in any way opposed to or different from those of the rank and file of beekeepers. The old association went into decay from this very cause. There was not much fault to find with the instructions given by beekeepers to the executive at the general meeting. The fault was with the manageмeut not carrying them out, mainly on account of those resolutions conflicting with the interests (not agricultural) of the ruling hand. This state of affairs naturally gave rise to bias, suspicion of bias and apathy.

The need for combination and co-operation is now, with the prospect of federation and the probable lowering of prices, greater than ever, and beekeepers should not neglect to forthwith join the new association, and thus help it to carry out the present programme, and to take in hand those larger questions, the solution of which is only possible to a really strong organisation, and upon which the future of the industry depends.

The programme adopted by the committee contains amongst others the following items:—

1. The protection of natural honey resources by prevention of illegal destruction of native flora on Crown lands and leases.

2. To consider the means of increasing the consumption of honey by the publication in centres of population of information of its value as an article of food and of its various uses.

3. To supply members with the best information, adapted to Australian conditions, of the diagnosis and cure of the diseases in bees.

4. To obtain a proper classification and correct (English) naming of the eucalyptus trees of the colony. (In other words, to reconcile the conflicting local names.)

5. To act on behalf of members in disputes with agents or the railways.

6. To supply members with a handy extrato from railway rates, showing in tabulated form the charges for the carriage of honey, wax, live bees, beekeepers' supplies, &c., for all distances.

The *Australasian* speaking of the action of the association in pushing on the Foul Brood Act says:—

The present agitation is a minority affair, and is too hurried. If we are to be taxed as beekeepers, at least let us know to what extent and for what purpose. If the purpose is honestly for the suppression of foul brood no harm can be done by discussion, and action later on when the society is stronger. If the true purpose of the Foul Brood Act is the suppression of the amateur beekeeper—well and good—I am in favour of it up to a certain point. I should be in favour of prohibiting the keeping of box hives, but this should not be done under pretence of curing foul brood. A Foul Brood Act, to be operative, must impose taxation on beekeepers, and those whom it is proposed to tax should be able to vote for or against the proposal before it reaches Parliament. When the deputation about the foul brood is before the Minister, it is to be hoped that it will remember clause b, prevention of timber destruction. This is one of the planks in the society's platform, and the fact that five chains width of timber are to be destroyed on the banks of the Goulburn, between Mooroopna and Shepparton, unless immediate steps be taken to prevent it, should weigh with the committee, lead them to inquire into the circumstances, and take action. Four apiaries will be affected by the destruction of these valuable trees, which fact alone should be sufficient to induce action from the committee, and be a warrant for their interference. The people of Shepparton are already taking action, on the ground that this destruction will injure the town, and the committee should join them in the interests of the beekeepers jeopardised.

DO BEES TRANSFER EGGS.

H. L. JONES, GOODNA, QUEENSLAND.

In the past couple of issues of the A. B. B. I have noticed instances recorded of bees moving eggs from one cell to another and I must confess that these reports make me feel a bit envious as I have watched most carefully both winter and summer for many, many years, but quite in vain for a single irrefutable case. I won't go on record as saying that bees never do such things, but I will say that I don't believe they ever do so; still I am open to conviction, as I would just as soon believe they do so as not; so fire away your proofs. In the case friend Bolton refers to the explanation is not difficult. Mr. Bolton states that he removed the queen on a Sunday (bad boy) and on the following Sunday cut out all queen cells and gave them a frame of selected eggs. At this time some of the larvae in the hive would not be more than four days old and the bees evidently again started more queen cells from these, as they frequently do under such circumstances, but the resultant queens would be weaker and inferior just as Mr. Bolton found them. Then again they may have started queens from three days old larvae, unknown to Mr. Bolton, as bees will often commence to feed a larva for a queen a day or more before they commence to lengthen the cell and only the closest inspection of each cell can detect this.

Regarding the cases your correspondent A.J.R. refers to I should like to know if he ever saw any of the queens from these cells, or were they all torn down on failing to hatch? He mentions that the cells in every instance were inferior ones, which leads me to think they were the result of laying workers. I have frequently found queen-cells where the queen could not possibly have been, but notwithstanding that I always took the greatest care of those cells; none of them ever hatched, so the eggs were evidently laid by laying workers. But in any case, as queens sometimes *do* go through the perforated zinc excluder, perhaps 1 in 100 and return to the brood nest, the presence of worker eggs or brood in the upper story could never be accepted as evidence that the workers had carried them there.

Bees have an object in gathering honey, pollen, propolis, in swarming, building queen cells, &c. but what their object could be in moving a few eggs from the lower to the upper story, or carry-

ing them from the centre to an outside frame, I can't conceive. I know I'm with the minority in my ideas regarding this question, but as there are some very good authorities on the same side of the fence I'll not hop over until some stronger evidence is furnished that bees do remove eggs from one cell to another.

AFTER THE CONVENTION.

After the Conuention a number of beekeepers visited the office of the Board of Exports, to see the samples of honey available for export. They numbered some forty, a good proportion of which were allotted either first or second grade. Some were very inferior, and a couple gave very decided indications of being glucosed. The tins in boxes were also inspected, the former being pronounced first class, but a suggestion was made the bottoms should be double blocked as well as the top. The boxes, Mr. Stephenson said, could be supplied at 8/- per dozen.

At Mr. Stephenson's kind invitation we visited the Government Refrigerating Works at Pyrmont. They were originally built for a meat market, and are very commodious. On entering our first inspection were some sheep carcases from Queensland. Then a large number of hares were being received and sorted, mostly from the Cowra district. They were classified, inferior ones being put aside for the local market, young ones in crates by themselves. The refrigerating rooms contained thousands. The temperature is down to 4 degrees. While men are working in it is at 20 degrees. We were shown eggs that had been in it seven and twenty months respectively. On being opened they were quite fresh, and fit for cooking and eating,

Honey, not fit to be classed No. 1 or 2 would be sent as "suitable for manufacturing purposes."

A large number of fowls were being received. Mr. Stephenson informs us that two of the employees could take a fowl, kill, draw, and pluck it in three minutes. There is a great demand for these various consignments, not only in London but also at the Cape.

SYDNEY NOTES.

We noticed during our visit to Sydney there are many persons from the country, visiting only perhaps once in four or five years, and though in a big city, with several hundred thousand people, find themselves more lonely than out in their accustomed bush. On one occasion, some years ago, we felt such very acutely. We had not been there for a number of years. The people we did business with were nice, but business done we left their doors. The day was oppressively hot, and towards evening we strolled to the doors of one of the theatres. We knew no one, and stood just inside the entrance. Hundreds of people passed in, their faces close to ours—faces almost familiar; husbands and wives, sweethearts and lovers, visitors from the country, sailors from the warships, but not a sign of recognition from one. We might have been but a part of the inanimate door post, or one of the seven sleepers of Smyrna returned. We were tired, and instead of entering with the rest went outside to meditate. So might it be with many every day in large cities.

Perhaps, therefore, it might not be out of place to give a few incidents of our trip to Sydney on this occasion.

We arrived late on Saturday night, and having secured comfortable accommodation enjoyed a good night's rest. Sunday morning, breakfast over, we strolled out. Lady friends in the country had spoken of the high church practice at Christ Church, where the Governor, Earl Beauchamp, attended. We passed it at half-past ten, believing we would have to kill time till eleven by walking about, but noticing people enter did so ourselves. The usual Anglican service was commencing, all intoned, no music. The intoning slightly disregarding punctuation even in the reading of the Scripture lesson. It was finished by eleven, when the Communion service commenced, by a procession headed with a cross, boys in surplices and priests in vestments. They bowed before the altar, on which were lighted candles. The whole of the service was musical. A large number communicated, the singing the while being very impressive and beautiful. Sermon followed, and the same procession led out. But for the absence of the incense, and a few English words being distinguishable now and then in the singing, we would surely have considered ourselves in a Roman Catholic Church.

After dinner we visited the Art Gallery in the Domain. We spent one or two hours most enjoyably here. There were a great many people, and one of the doorkeepers informed us that the average attendance on Sunday afternoons was from 1500 to 2500. The opening of this and the Zoological Gardens on Sunday afternoons must be a great public boon.

Our afternoon was completed by a walk round the Domain, viewing the harbour, the men-of-war and the Botanical Gardens.

In the evening we attended the Presbyterian Church in Phillip-street. The church was full, the choir strong, and the congregation singing heartily. A lady sang Handel's beautiful solo, "He was despised," and the preacher gave a practical temperance sermon, the work lately published by Rowntree and Sherwell forming the theme. Prohibition in America has been a failure, there being more drunkenness, crime, and idiocy in the prohibition States than in the others. The United States and Australia are much more temperate than Great Britain, and the most temperate country at present was Norway—50 years ago the most intemperate. Intoxicants are not drunk where sold, sitting accommodation being prohibited, and the hours of sale are judiciously restricted.

In the sitting-room of the place we were lodging at were several volumes of old *Illustrated London News*. We were very interested in looking them over, and came across accounts of the battle of Fredericksburg, 1864, where the *Federals* were badly beaten. Strange the English views of those times. The battle was urged on by the Federals for political purposes, though the army was quite unprepared, because the party in power were afraid they would be thrust out if they did not do something. Of course that was put down to a defect in the American Constitution. Abraham Lincoln was spoken of as a *weak man*. The Act of Emancipation of the slaves in the ten anti-Federal States was described as a barbarous and uncivilized thing. But the Southerners had taken proper precautions, and such slaves as availed themselves of their freedom would know what to expect!!! Fancy such views in England! These remarks reminded us of a book we have which was published in the early forties, entitled "Lives of Living Authors," which, speaking of Dickens, said he would never be a popular author, as he could not describe a high-born lady or gentlemen—could only describe low born tap-room or menial characters.

We paid a visit to Mr. Ellis' duck farm at Botany, and spent a very pleasant time looking at the *thousands* of beautiful large white birds, and listening to Mr. Ellis' explanation of the manipulation of his incubators and mothers. Considering the assured and increasing foreign market, this is an industry well worth the consideration of beekeepers. By the way, tram fares are very cheap around Sydney in comparison with the railway fares in other parts of the colony. Our nearest town is ten miles away; we pay for a return ticket 2s. From the Circular Quay to Botany—nine miles—is only 3d.; 6d. return.

Walking down Oxford Street on Saturday evening we went into a well-known draper's shop. It was full of customers, the employees being taxed to their utmost, fairly in some cases "losing their heads," in their anxiety to be quick, please their customers, and mind the vigilant shopwalkers.

We noted the Messrs. Roberts' window blind factory at Waverly. This is, we believe, the oldest factory of the kind in the colony. It was very interesting to look at the various labour-saving devices in connection with the industry. Mr. Roberts is also a very successful beekeeper, having a few hives here, and a large apiary managed by a partner near Bathurst. His exhibit at the late Agricultural Show will be remembered by many. Mr. Roberts has a wholesome dislike of those who, for their own selfish gains, urge all and every one to become beekeepers, no matter the state of the market.

There was some very rough, stormy weather the week of our visit, and several we knew went to Coogee and other places to look at the ocean in its stormy grandeur.

The unemployed and poor have good friends both in the Government and the Salvation Army. The former allows them to camp in the parks, pays police to take care of them, and have provided a splendid reading room in the upper portion of the new markets in George street, where several hundred newspapers of latest dates and from all parts of the world, are placed on stands, reading height, but with no sitting accommodation. A lift is constantly at work. The evening we visited it we had to wait and watch to get a chance at a stand, there were so many readers and waiters.

The Salvation Army also has its refuges, one for women, another for men. In the latter boys can get a bed for 2d., men for 3d, and an announcement outside informs the wanderer that lodging with a bath can be had for 3s. 6d. a week. Curiosity led us into a large room, poorly lighted, where a number of men were seated about, several with their heads in bandages. We did not enquire why. Coffee was being supplied by a Salvation Army officer, at a bar, and we indulged in the luxury of a cup of coffee and slice of bread for 1d., with which we retreated to a quiet corner to take mental notes. We were scarcely seated when an undersized individual, with a cringing kind of voice, approached us. He told us where a better cup of coffee was to be had. He had to work very hard at a boarding house for 2s. a day. A lad approached, and was immediately ordered off by him. Possibly he thought he had secured possession of us, and did not want anyone else to interfere. "He's got plenty to eat; he makes plenty of money selling newspapers." But we beckoned the lad to us, and offered the slice of bread and butter to him. He promptly seized it, We don't remember seeing a piece of bread devoured so quickly. To avoid further interviewers we left.

The various hoardings are covered with pictorial announcements, an especially gruesome one meeting the eye at nearly every turn—an individual being fastened under a guillotine knife, ready for the fatal string to be pulled. Pills and patent medicines are well advertised in this way.

A short visit to the Royal Agricultural

Society's Grounds, where the great sheep show was being held, enabled us to see ths intelligence of several sheep dogs in yarding sheep.

Somehow one tires of being long in Sydney, and we were not sorry when we found ourselves safely ensconced in a carriage of the Great Northern mail train on our way home.

QUESTIONS.

E. T.

225.—Is a strong winter flow really a gain?

W. JACOBS.

225.—No. A winter flow induces the bees to leave the hive in unsuitable weather and I have noticed hundreds of bees fall to the ground and perish with the cold.

AUTRALIAN YANKEE.

219.—It makes no difference.

221.—No objections. They are the best frame that I have tried.

222.—No. Wire is the best.

223.—The first ten is how I work and advise others to work.

225.—Yes, providing there is a summer flow as well.

J. LE M. SCHOMBERG.

225. I should say it was to the bees, or for any body that wanted honey for immediate sale, but for quality it has none, and the trouble is more than it is worth, in fact you want a sort of incubating establishment or a special hot house. I prefer extracting my honey no earlier than November, and I find the hotter the weather the better and purer the honey.

J. J. PARRY.

225.—No. Because there is the wear and tear of the bees to collect it, and without it's very dry weather will have a tendency to give them dysentry because there will be too much moisture to get rid of, and if the weather continues like we have been having lately, wet outside as well as inside, I maintain that a strong winter flow would not really be a gain.

G. R. HARRISON.

225.—A flow is always a gain while we have the bees to gather it and the weather to gather it in. But after five years experience of a country where they often have winter flows, I envy those people who are located where they have a decent winter, so that they can shut down the hives and forget all about the apiary for from four to six months. Yes, give me flows when the hives are strong and the days are long.

A. CAMPBELL.

219.—I prefer them lengthwise.

220.—No experience.

221.—Very good for brood chamber but I would not use them in supers as I believe in 1½ inch wide frame for them, seven in a super instead of ten. Less uncapping, less extracting, and more honey.

222.—Always use wire, but prefer No. 24 to No. 30. Being stronger, don't stretch so much.

THOS. R. O'GRADY.

225. Not a gain for several reasons. (1) Trees in blossom during winter do not bloom again during summer, as a rule, and it is doubtful if the winter flow is as strong. (2) The honey is difficult to extract. (3) If weather too cold for much brood rearing; taking honey in winter wears out old bees and weakens hive, as an insufficient supply of young bees is coming on. (4) Should the queen die the workers would be worn out without any possibility of being replenished.

J. F. MUNDAY.

225.—After looking all round this question I fail to discern any objections to a bountiful honey flow in the winter season, but consider it an additional blessing to the summer one. Certainly the honey is not so easily extracted nor can we use the solar wax extractor, but we can both extract the honey and render the cappings and should be thankful we have it to do. The circumstances under which flowers secrete nectar in abundance are also favourable to the gathering of it by the bees, at any rate they can do so and thrive and as a result will swarm early. I doubt if any beekeeper will answer that question in the negative.

J. H. COLMER.

219.—By using the frames crosswise they can be arranged so as to give the bees an uninterrupted entrance to the supers.

222.—Never used either slips of wood or wire in the Munday frames.

223.—It looks to me, with the exception of placing the swarms on the top of the hives, that the whole of the 30 hives had to take pot luck; but if worked for extracted honey it would be the reverse here.

224.—No honey or pollen coming in.

225.—I cannot say about a strong winter flow, but a flow that will keep the bees nicely on the wing on fine days will bring them well forward in the spring.

E. TIPPER.

225.—No. It is natural for bees to have a winter's rest, as much as everything requires a night's rest. Through that rest the bee's life is lengthened several months beyond its duration in summer working. In winter the queen does not lay, and in spring requires all the energies of all the bees left to help her work up the strength of the hive for the spring and summer flow. With a big winter flow the bees are drawn to work in an unnatural time, their life

s thus shortened and there are fewer to help the queen in spring Consequently they will not build up so well, and a poorer harvest will result. The little winter honey brought in in the short winter days is not equivalent to the loss of bees at this time.

QUESTIONS NEXT MONTH.

E. T.

226.—We have been told that the apple tree (*intermedio angophora*) yields some seasons a dark honey and sometimes a light. Can any of our readers verify this, and give reasons why it is so?

GEO. PARKER, JUNR.

227.—Has any beekeeper ever sown the Japanesese Buckwheat for his bees, if so with what result?

228.—Has he ever known his bees to work on the flowers?

229.—Do they contain much honey?

230.—Is it a good honey?

231.—Is it necessary to boil hives and frames that contained foul brood?

232.—Would immersing the whole of the frames and the hives after all the combs are cut out, in cold water for a couple of days and then scraping all frames clean of any bits of wax and exposing the same for a week in the sun be sufficient to kill the germs of foul brood.

QUIZ.

233.—How much of your time does it take to raise one laying queen supposing you are raising 20 queens a week?

234.—Do you advise requeening at once, all hives that do not come up to the average in the production of honey?

235.—Do you keep a record book, if so, how do you keep it?

E. J. C., Tarrawingee, Victoria:—Our bees done very well this season, and prices were satisfactory.

W. J. F., Milltown, Vic., June 22:—Referring to foul brood, I am inclined to think with you, that cold has something to do with it. It is common enough here, and the weather is often very changeable, so no doubt the sudden cold sometimes drives the bees away from the brood.

J. C., Tooborac, Vic., June 29:—Last season was pretty good all round this district, and still there is plenty of box out now in full bloom, likely to make it all the worse for next year. I think we get one fat year, then three lean; still we are doing well, better than a great many, so let us be thankful. Wishing the *Bulletin* every success.

H. C. W. Leadville, June 22nd:—I want to ask, your advice as to the best way to pack and move my 43 colonies of bees. They are in two story 10 framed hives. I want to take them about fifty miles by road (horse teams.) I saw an account "How to Move Bees" in the A.B.B. some time ago, but the person who wrote it did not say whether the wire gauze on top of frames was sufficient by itself, or if the tops should be placed over the hives, of course allowing plenty of ventilation? The journey would take about three days, and the road is rather stony and rough. What sort of wire gauze would you recommend and what would be the cost per yard? My frames are all self-spacing Root Hoffmann and securely wired. Would cheese cloth do instead of wire gauze?

[In that reply we purposely omitted to say whether to put cover on or no. In summer time do not put it on, but now in this cold winter weather we would, but not nail them down tight, say to within the thickness of a knife-blade. The wire cloth you can get from any of the supply dealers who advertise in the *A.B.B.*, the price being about 9d or 10d per yd. In removing bees per road, it is recommended to have the frames parallel with the axle-trees, by rail parallel with the rails, the jolting on drays being sideways, and on railways endwise. We would not trust cheese cloths, the bees would be apt to eat it through.]

CONCERNING BEE-MOTHS AND ROBBING.

H. S. HOWE, IN *A. B. J.*

All the precautions necessary to keep my large stock of extracting-combs are to space them one less to the hive than they are used in the summer, and then leave them where they will freeze during the winter.

The moth passes the winter usually in the egg-stage, and a good, solid freeze will kill those so in the spring there are no worms to eat the comb.

There are usually two broods during the season, one in the spring, the other during the fall. It takes about three weeks for the larva to mature.

Another point in the safe keeping of combs is the presence of pollen or dead brood. The larvæ of the moth cannot live on wax alone, they must have some other food. Now, combs used for extracting seldom have any pollen or other nitrogenous food for the worm. The combs which are in hives where the bees have died are the most liable to their attacks. How to protect them brings me to the second of those two questions—

HOW TO PREVENT ROBBING.

We used to think that we must not let a bit of honey be exposed when the bees were not storing honey or we should have trouble from the robbers, but now we do about as we please in that regard; that is, always keeping in mind certain laws.

When the bees start to rob a place, if we can make them think they have got it all, there will be no further trouble, while if we cover up or take away the honey they will keep on looking for it.

Now for my method of feeding the bees, and at the same time caring for the combs that are likely to be troubled by the bee-moth:

As soon as the bees begin to work in the spring, I go around and take out all the dead ones and store the honey and combs in the honey-house Then I put out one or two hivesful of it somewhere at one side of the apiary, leaving the entrances so the bees can get in and carry away the honey. As fast as one lot is carried away I put out more, as long as I have more to put out. Then I go through the hives and take out the heavy combs, replacing them with the ones first cleaned out, letting them carry this honey back in turn. This I keep up clear to the time of the honey-flow.

No self-respecting moth will stay in those hives that are used for feeding; things are too much stirred up, and the combs go into good, strong colonies often enough to discourage them if they tried it. If we can keep the spring brood of worms from maturing, we shall have to wait for more until our neighbour sends them to us in August again.

As to robbing, the only time ever I see any is at the last extracting, after the honey-flow stops in the fall, and not then unless we are a little too slow in getting over the yard. I mean bees trying to rob one another. I usually give them something else to think about at that time.

As fast as the combs are extracted they are spaced and piled crosswise of one another so the bees can get at them freely. Soon the bees find that there is honey to be had in the back part of the honey-house, and they start in to clean those combs. By the time the last one is piled away there is a scent like the one Ernest Root so graphically described after one of his visits to W. L. Cogshall, but there is no robbing in the yard.

Perhaps if one worked slow enough the bees might get started on colonies that were opened any time when there was not a honey-flow, but life is too short and honey too cheap to spend that amount of time over any one bee-hive.

DRAWN COMBS FOR SECTIONS.

J. W. BECKWITH, IN *Beekeepers' Review.*

Different parties have told us that they have the bees build the comb in the brood-frames, and then cut it up and put the pieces in the sections; but I have

not seen where any of them explain how they get the bees to build the comb properly for transferring.

I cage the queen of a populous colony that has a good supply of young bees, and take away all the combs except one containing eggs and young larvæ. I put this comb between two empty ones at one side of the hive. The object of these empty combs is to catch the pollen which might otherwise be deposited in the new comb that they build, rendering it unfit for the purpose intended. As soon as the comb of brood is capped I replace it with another. I keep up the strength of the colony by shaking young bees from other colonies in front of the hive. By allowing but little brood in the hives there is but little tendency to build drone comb, even while the bees are raising a young queen. The empty combs that I give catch but little honey on the sides next to the brood, except at the top, the parts next to the brood being reserved for pollen. I exchange these for empty ones as often as necessary. I fill the rest of the hive with frames furnished with very light starters of *wax*, not foundation, although a very narrow strip of extra thin foundation would not be objectionable, but the wax is cheaper and much more easily put on, and is just as good in every respect. I think it is not necessary for me to tell how to put on the starters.

One L frame full of comb fills eight 4¼ x 4¼ sections. The comb should rest on the bottom of the section and fit well against the two sides, but if it does not quite reach the top no matter. A drop of melted wax near each upper corner will generally hold it in place if it is inclined to fall over, which it will seldom do if well fitted. I sometimes stick a pin through the section into the comb, especially if it is filled with honey, and draw the pin when I clean the section.

I sometimes extract the honey before cutting the comb from the brood frames; but when one colony is building the combs while another is finishing them, that is not necessary; but if any honey has been capped, I uncap it, unless a whole piece is capped evenly and the comb is of proper thickness.

I know of some writers who will say this is too fussy. Of course, it is fussy; and the same may be said of all the work in the apiary; and, in my opinion this fussing pays as well as any part of the work.

I will mention some of the advantages of this plan:

No trouble getting the bees into the supers; consequently a greater number of filled sections, especially if the honey flow is not very strong.

The combs may be produced during a flow of honey that is not desirable to have in the sections.

Such colonies as do not finish their work neatly may build the comb and others finish with white cappings.

The sections will be but little soiled, and the cappings will have a cleaner and neater appearance.

The comb will be fastened to the wood evenly on all sides.

And "last but not least," *no fish-bone*.

Spring Management of Bees

In Large Hives for Extracted Honey Production.

To harvest large crops we need bees, and those bees must come at the right time. If the breeding of bees on a large scale does not begin till the opening of the honey crop, and if this crop is short, say three weeks in duration, the bees will have been reared to no purpose. It takes just about three weeks to develop a honey-bee from the time the egg is laid; and all, or nearly all, our naturalists tell us that the bee does not become an active field-worker till about a week after emerging from the cell, except in extraordinary circumstances, such as the departing of a swarm, or the deprivation of the hive of its old bees by artificial swarming, which renders it imperative for some of the bees to volunteer in search of stores before the time set by

nature. Thus the reader will see that about a month elapses before the bee is of use to its colony. Then it is fit that we should by all means induce an increased laying when we foresee a crop in the near future.

In late seasons although the inducement to lay is retarded by the natural circumstances, yet the impetus given is greater when it does come, for the reason that the number of blooms that come out at once is of greater variety. For instance, in early spring the willow is first to bloom, then comes the gooseberry, then the peach, then the apple, etc. These blossoms follow each other with intervals, during which the cool days again retard the laying, so that although the inducements offered to the bees are oft-repeated, the alternates of cold and heat, of bloom and dearth, make the laying irregular. In a late season the weather warms up suddenly but remains warm. The willow, the gooseberry, the peach, and the apple, bloom so suddenly that one blossoming merges into another, and the push is steady and vigorous. So the disadvantages of a late season are somewhat made up by the steadiness of its action.

But if we can, by artificial means, by oft-repeated feeding early in the season, of small amounts of food, induce our bees to breed early, they will be the better prepared to increase their brood-nest at the first warm days, and the bulk of our bees will be hatched out of their cells before the flow. This is the only secret of success.

Compare two apiaries in which different plans are pursued. In the one the bees are left to themselves without shelter, perhaps without sunshine if their location is in an unfavourable spot. Their supply of honey is scant because they have been too closely robbed by their owner the previous fall. They must stint themselves, they dare rear but little brood until they are sure of a coming harvest close at hand. They linger along, probably dwindle some in numbers, till the first bloom appears, but they cannot rear brood largely till there is actually some honey to be found in the bloom. With the best efforts that they can put forward they will not begin breeding to the full capacity of their queen until the opening of the real harvest, and they will be booming just in time to close the season with a small crop of surplus to their owner.

Now, the other apiary will give us a different story. The hives have been left with plenty of stores in the fall, they are well sheltered, they have all the sunshine that is to be had. The first warm days find them ready to work. They need not stint themselves since they have yet a surplus. So the least inducement in the way of pollen-bearing bloom encourages them to spread out, even though no honey is yet to be had in the field. When the fruit bloom begins they are sufficiently strong to give their queen the freedom of every comb, that is, sufficient warmth on every comb to enable her to lay her eggs anywhere ; they "horsewhip their queen," as some of our friends would call it. No, the queen does not lay any more in that hive than in the hives of the late-breeding apiary if the hives are of the same size, but she lays at the right time. The push comes so that the hatching bees are in time for the feast, and help harvest the crop instead of helping consume it.—C. P. Dadant, in *A. Bee Journal.*

A NEW TREATMENT FOR FOUL BROOD.

By Rambler, in *Gleanings.*

Whenever you find foul brood in a comb, uncap it and wash it all out under a faucet of water running with considerable force. When thoroughly washed, shake out the water as clean as possible ; then make a solution of one teaspoonful of *formalin* to one quart of water. Spray the cells full of this solution ; place the combs in a pile, and allow them to remain two days ; then shake out the solution and

return the combs to the hive. In the treatment as given by Dr. Chase he takes the combs only as they show the disease, and continues the practice until all vestige of the disease disappears in the apiary, which would probably take much time.

In treating a colony as a whole it would be necessary to put the bees on dry combs or in a box where they could be put through the starving process while their own combs and hive were being treated. The moist combs could be given them one or two at a time until all are returned. If the treatment will cure, as the doctor assured me it would, the method can be varied to suit the convenience of the operator. The great advantage gained in this treatment is the non-destruction of the combs.

Formalin is a comparatively new antiseptic, and the most powerful now in use. It is largely used by the Red Cross Society in their work in the army. It is manufactured in Germany under a secret process, and is not an expensive remedy.

To persons who wish to try this remedy I would suggest that, where there is honey in a comb, and we wish to make a thorough job, the honey should be extracted and the comb returned to the hive for the bees to clean up; then there will be no danger of other bees sipping the wash where there might be disease germs. Or instead of washing under a faucet, which would be extremely inconvenient in nearly all of our California apiaries, as the next best thing put the combs to soak in a tank of water. Changes of water with formalin added could be used. I am aware that there has been a prejudice created against the use of drugs, or rather, has grown from the repeated failures of their use, and to such an extent that Mr. McEvoy, one of our best authorities, comes out squarely and says that foul brood can *never* be cured with drugs. Now, we may be somewhat sceptical when a new treatment with a drug appears; but are we to take the dictum of any one person, and never make another trial? It seems to me if we do, the bars are put up against all progress and seeking for better methods of treatment. I believe that, if there is the merest shadow for success, we should let down the bars and continue the experimentation with drugs.

I can readily understand that, where the germ becomes dried down in the bottom of a cell, or where it is covered with honey, fumigation or slight spraying would have no effect; but by putting said germ to soak for several days there is a chance of rendering it open to the influence of the proper drug, I think I have made Dr. Chase's treatment sufficiently plain so that anyone can give it a thorough trial.

Dr. Chase also uses another antiseptic for protecting combs from the ravages of the moth-worm. He allowed me to examine several brood combs wherein were the well known silken galleries and the worms, but the latter were dead. His treatment is to set the hives containing the combs in a pile of several in height; place under the bottom hive a few drops of *bisulphide of carbon*, and it soon accomplishes its mission. Comb honey can be treated the same way, or the disinfectant can be sprinkled liberally in a room where comb honey or brood combs are stored, with the same effect.

THE GRADING OF HONEY.

The following are the rules for grading adopted by the Colorado State Beekeepers' Association:—

No. 1.—Sections to be well filled; honey and comb white; comb not to project beyond wood; wood to be well cleaned; sections to weigh not less than 21 pounds net, per case of 24 sections; but cases in lots must average 22 pounds net. [That is, if a few cases in a lot weighed 21 pounds each, that would not prevent the whole lot from being first grade honey, provided the average of the whole lot was 22 pounds.]

No. 2.—Includes all amber honey, and all white honey not included in No. 1; to be fairly well sealed, and not weigh less than 18 pounds net per case of 24 sections.

Culls.—All cull [illegible] shall be sold in the home market.—*Bee [illegible] Review.*

W. S. PENDER. West Maitland.

J. SMITH. Spring Creek.

C. B. HUGHES. Cooranbong.

F. WARD. Liverpool.

H. R. ROBERTS, Bathurst.

JOHN GALE, Queanbeyan.

JAS TRAHAIR, Secretary, Sydney.

ALBERT[illegible] President, [illegible]

Delegates of the National Bee[illegible]

L. JONES. D. W. PARKER. J. J. BRANCH. J. S. DICK.
odna, (Q.) Springwood. Port Macquarie. Rylstone.

E, W. ABRAM, E. TIPPER, F. E. EVALD,
dney. Vice-Pres., Beecroft. Vice-Pres., W. Maitland.

eepers' Association, at Sydney, 1899.

FEEDING OUTSIDE THE HIVE VERSUS INSIDE FEEDING.

Outside feeding has been recommended in the past by some good apiarists; and where there are no bees, either in the woods near by or at some of the neighbouring farms or houses within two miles of the person wishing to feed, the plan will do. But, as a rule, the person undertaking feeding in such a way finds out sooner or later that he is feeding many other bees as well as his own, and it is not a real pleasant feeling that comes over one when he realizes that he is at dollars of expense feeding bees from which they can not expect to reap any pecuniary benefit. Then such feeding is very liable to engender robbing, especially if the feed given contains any honey, and if given in the scanty supply that is often recommended in stimulative feeding; for when the feed gives out, along in the hottest part of the day, the scent of the just stored feed from the hives places a great temptation before such bees as have just before been carrying feed to their fullest capacity; on now finding themselves suddenly deprived of any more work to do, so they set about trying to get the savory sweet from the hives from which the savor comes; and woe betide the weak colony that does not have sufficient numbers to repel the attack of a numerous throng of excited marauders which have been appetite-whetted only just before, with nothing now, in a legitimate sense, to supply that appetite. Bees placed in such a condition are made fools and robbers to a tenfold greater extent than they naturally are where "left to their own sweet will," and for this reason alone I do not think it ever advisable to feed outside unless it can be done generously enough so that the bees can have a *full* supply the whole of the day in which feeding is commenced in the morning.

Then, again, by such outside feeding, bees can not be fed in *proportion to their needs*, one colony as compared with the others. Some of the colonies in the yard may have all the honey in their hives that is for their best good, while other colonies may be nearly or entirely destitute, and in wholesale outside feed- there is nothing to hinder those colonies having plenty of honey from securing fully as much as those on the verge of starvation; and thus it comes about that, while the needy ones are helped, those having abundance are hindered, from the amount coming into the hive taking up the already scanty supply of cells left vacant for the queen to deposit her eggs in. Thus we have a crowding out of the queen just at the time when she should have all the room needed in which to deposit eggs which are to develop into the workers for the honey harvest only a little way ahead. Then should the day in which you commence to feed prove to be one of those fitful ones which we often have in the spring, after an entirely clear pleasant morning when the wind rises up, and floating clouds pass over the sun, causing a few minutes of bright sunshine and an equal number of cloudy chilly minutes, many bees will be lost by trying to carry the feed at a time when they will become chilled before they get fairly loaded, or *en route* home; and the loss of a single bee at this season of the year is of more account than the loss of a score—yea, of a hundred—would be just after the harvest of white honey is past.—*Gleanings.*

CAPPINGS.

From American and other Bee Journals.

The organ of vision of the honey-bee is not surpassed anywhere in all nature. The Creator has so made this organ that the bee can not only see in the light but also in the dark, and fashion its beautiful comb with mathematical and mechanical accuracy.—*Gleanings.*

The moisture and gases from a quantity of bees closely confined will soften green paint containing Paris green on wire cloth, enough to cause a portion to

enter the delicate breathing organs of the bees, and cause death, and this is particularly true if the wire has been recently painted, and some dryer used in the paint.—*Gleanings.*

Do not join in the general hue and cry about the useless middle-man, and swear he lives off other people's labour. Remember that whoever satisfies a desire is a producer, and that the man who opens a market is as much entitled to pay, for his labour, as the man who helps the bees produce a case of honey.—*American Bee Journal.*

Running bees to wax more, and honey less, has been done successfully for years in San Joaquin Co., Cal. Mr. Milo Wolfe says he can support his family from 200 colonies of bees without selling a pound of honey. Of course, he would have to "feed back" to get the largest amount of wax. One year his father, Mr. Jacob Wolfe, obtained over a ton of wax from one apiary.—*Gleanings.*

Henry Alley, in *Gleanings*, says:—I remember an experiment I tried to force a colony of bees to rear some drones. I filled a hive with nearly all drone comb, and the queen was obliged to lay eggs in drone cells. This experiment was watched with interest; and when I found eggs in the drone cells I thought my experiment was working first rate. In due time the cells were capped over, but not as drone brood is usually sealed in. When the bees hatched out of those cells they were no larger than bees reared in the natural worker brood comb.

For convenience in handling, I prefer barrels, kegs or kits. I have handled thousands of pounds in 60 pound tin cans, crated two in a case, and consider them the most unhandy and inconvenient package to handle extracted honey in that I ever used. It takes more muscle to handle them with ease than I have. You dare not end them over for fear of smashing the box; they won't slide worth a cent; and it makes me red in the face to pick one up and carry it. Barrels or kegs can be rolled into or out of the waggon quite conveniently, and 30 pound kits can be picked up one in each hand and carried easily.—F. A. Willcox, in *A. B. J.*

Mr. Getaz, in *Gleanings*, gives a method of preventing increase:—At the approach of the honey season, or perhaps rather, about the time swarming would naturally commence, the laying queens are removed. Alley drone-traps are then placed over the entrances of the hives thus unqueened. While cell building is going on, and the hives are queenless, there will be no attempt at swarming until some queen emerges from one of the cells; and even then probably swarming would not take place until the queen was strong enough to fly. As the virgins can not get out through the perforated zinc, it is a battle royal, resulting in the survival of the fittest. Four or five days are lost, probably in the height of the honey season; and if the season is very short, as it is in many localities (only about ten days), the plan would be very objectionable; but if it lasts a month, four or five days would not cut much of a figure. When the young queens reach the right age, and the swarming season, or swarming fever, is over, the drone traps are to be removed to allow the queens to become fertilized.

A. N. Draper, says in *Gleanings*:—Make thirty or forty of your ten-frame hives with the brood frames 2⅛ inches deeper than your regular size, and the brood chamber that much deeper to receive them. All the rest of your fixtures are to be just as for a regular ten-frame hive. Fill them up with bees for one of your out apiaries; pack them warm for winter and spring. If, after three years' experience with them, you don't find them to give you more solid comfort than any other style of brood chamber you have ever tried, for the production of either comb or extracted honey, kindly send me a bill for whatever the expense of the experiment may be, and I will send you cheque for the amount. Your Hoffmann frame will overcome the difficulty of the bottoms of the frames swinging together. As I understand it,

the swinging together of the lower parts of the frames was always considered the main objection to the deep frames.

Henry Alley, says in *Gleanings*:—In the production of honey the beekeeper has got right down to nature's best methods. In producing queens we are away off. In getting large amounts of honey it is not necessary to give the bees an impression that they are about to starve. But in producing queens the bees *must* be made to understand that more queens are needed, and that the existence of the colony depends upon the number and kind they are expected to rear. In rearing queens a necessity for a new queen must be made apparent. When bees are made queenless the colony soon understand the situation, and go about the business of supplying another queen. A colony in this latter condition, I claim, will produce a much better quality of queens than a colony that has a good fertile queen, except when the colony is about to cast a natural swarm. Of course, it is understood by all, that, when queens are being reared above a brood nest that has a queen, and at a time when there is no field forage, the bees must be fed liberally. This same thing applies to rearing queens by queenless bees if good queens are to be reared.

In the *Canadian Bee Journal*, an account is given of how a Mr. Holmberg prevents Italian queens from being fertilised by black or inferior drones. "He practices Doolittle's plan in raising queens. His nuclei are supported, not only with nursing bees but with a good supply of drones. He removes the nucleus to his cellar where he leaves it well supplied with honey for about three days. He then, at 5.30 p.m., after all outside drones have returned to the hives, brings out his nucleus, when the virgin queen and the drones will at once rush out for a flight after their long confinement. After their return the queen is examined, and if she does not show evidence of having met the drones, the operation is repeated and she is given another chance at the same hour on the following day. Mr Holmberg has a way of introducing new queens that is, as he says, very successful. The old queen is caged and placed on the top of the frames for two or three hours. Then she is destroyed and the new queen is put in the same cage which is placed in the same place over the frames. After an hour she is released, when she is accepted readily. The bees think she is their old queen, now having the odor of the old one gathered from the cage and her position over the bees."

Knowing that Mr. Muth had sold many tons, perhaps, of dark honey to bakers, I asked him why it was that bakers prefer honey to any other form of sweet for certain kinds of baked goods. "Because," said he, "it takes little or no glycerine. Where honey is used as a sweetener, the baked goods remain moist for a great length of time; and honey is the only sweet that will accomplish the desired result. The fact that glycerine has to be used with other syrups, makes them more expensive; and as a matter of economy bakers use honey, and more largely than many people think." No doubt this is the reason why honey is used in ginger bread. A dry ginger-bread is practically unsaleable. One that is soft and moist as honey will make it, is always saleable; and these honey-jumbles, I have sometimes thought, improved with age. When they are first baked they are apt to be too crisp—that is, somewhat dry; but after they have stood for a time they become moist and toothsome.—*Gleanings.*

F. A. Snell in *A.B.J.* says:—This matter of spraying fruit trees at the right time is a very important one, and should be kept before the people who do not all yet seem to understand its importance, until the public is well-informed. According to the best authorities I have read, there is no fruit that should be, or need be, sprayed until out of bloom, when apples, plums, cherries, gooseberries and currants should be sprayed to destroy

the insects or worms which prey upon them. Spraying with the proper materials soon after the bloom is over will largely destroy the fruit depredators, but it is well to give two applications, the second one being given about one week after the first. I have used paris green for a good many years, and have found it to be very effectual in destroying every insect or worm that feeds upon the fruit or foliage oft he trees or bushes. London purple is also a good insecticide, but I have not used this, as paris green has pleased me so well.

If old combs are properly treated *before* the melting, the pollen and silk will not absorb the wax nor produce the jelly-like gum and much of the annoyance of reduction will be avoided. I find the best method is to place the combs in a strong solution of sulphuric acid and water (cold) about a week prior to the time of melting. If the combs are well broken up and occasionally stirred in this solution, the acid will decompose these troublesome substances, and a large part of them will remain behind when the crushed comb is removed to the melting pot. I wish to emphasize the necessity of slow melting of the wax, and not allowing it to *boil*, as when the mass reaches that temperature, the propolis is quite apt to combine with the wax. If, after this, the press is applied all of the wax will be recovered in the best possible condition. Caution: When melting wax, always add to the water acid of some kind, preferably sulphuric, sufficient to neutralize any alkali in the water, otherwise said alkali will affect part of the wax, forming a sort of soap. —A. C. Miller, in *Beekeepers' Review*.

I have a fine solar wax extractor which I bought of its inventor, Mr. Alpaugh; and it is worth $10.00 a season for melting the cappings into wax. It has a fine wire-cloth basket, about the size and shape of an old-fashioned, wooden, sap-trough, which hangs across the high end; and when the cappings melt the wax falls down in showers upon a slanting sheet of tin, and then runs down to the end of it, and drops into a tin pan. The basket is hung so high that the sun shines in between it and the slanting sheet of tin. When the cappings are melted, I lift the basket out of the extractor, turn the basket upside down, and from a tea-kettle, pour some boiling water all over it. This cleans it very nicely in two or three minutes. I then fill it again with cappings and hang it in the extractor. The comb-basket is about two feet long, one foot wide, about seven inches deep, has a wooden rim around the top edge of it, and as I have already said is the shape of an old, log sap-trough. These solar wax extractors should be made about 32 inches high at one end, and slant down to eight inches at the other, and when the comb basket (wax-strainer) is hung up across the high end, it should be six inches above the sheet of tin that runs slanting down to the wax pan. Extractors like these should be bolted upon a platform, so that any person can with one finger turn it to face the sun. After the large plate of glass is put in the sash that covers the extractor, the sash should be fastened with hinges at the lower end of the extractor. When I melt wax over, and run it into pans, I always wind some papers around boards and cover the pans so tightly that no air can get at the wax; and, by doing that, I have not had one cake of wax cracked in over twenty years.—Wm. McEvoy, in *Beekeepers' Review*.

J. C., Armidale, June 30:—I received honey labels this morning. Many thanks for your promptness in sending them on, They are a nice label. We had a very good honey season here this year, the best we have had since I have kept bees, and the quality of the honey is excellent.

C. E. R., Goulburn River, June 26:—My bees are doing fair at present, averaged about 100lbs per hive this season. Extracted none since January, the weather has been too dry. What honey they did gather was too thick to extract.

N. S. WALES CONVENTION.

The Eighth Annual Convention of the N.B.K.A. of New South Wales, held on June 28th, 29th, & 30th, 1899.

THE eighth of the above, commenced at the Technical College, Ultimo, on Wednesday, June 28th.

There were about twenty beekeepers present from all parts of the colony, and including Mr. H. L. Jones, from Queensland.

Mr. Albert Gale, President, occupied the chair, and opened the proceedings by apologising for the absence of the Secretary, Mr. J. D. Ward, who through pressing business had to go to the country, and who had signified that owing to pressure of business he would be unable to longer continue Secretary. He then called on the Rev. C. B. Hughes, late of Molong, to give an opening address.

The Rev. C. B. Hughes, said it must not be supposed that he was taking the place of a Minister of the Crown because he happened to be a minister of religion, though he had noticed a good deal of bee literature came from men who were evidently God-fearing; but one thing certain, he was warmly interested in beekeeping, and was pleased to see such a large gathering of gentlemen also interested in that industry. It had been his privilege to mix with beekeepers for many years, and he thought he could claim to be one of the oldest beekeepers in the colony. He had a distinct recollection of the industry when it was in its infancy in New South Wales. He remembered the time when he sent to Sydney for his first hive at a cost of 22s 6d, with freight added. Now they got a very much superior hive delivered to them for 7s 6d. But the great difficulty was to get a fair return for their produce. He considered that as butter did not pay the producer if sold at less than 1s per lb., so honey, to pay, should never be sold at less than 3d a lb. He congratulated the association on the progress it was making, and expressed his delight at seeing so many delegates present at the annual conference. (Applause)

Mr. Gale, President, then addressed the assembly. When looking in the last *Australian Bee Bulletin*, at the plate representing the first bee conference in '92, of the faces there represented here could be counted on the fingers of his hand. Through these seven years he had the extreme gratification of taking an interest in this Association. He was first a vice-president, ultimately bloomed into a full blown president. The object of these first conventions was to instruct beekeepers, but now how many wanted instruction? That is a thing of the past. The movement had progressed apace in other respects. He remembered the time when only a dozen or so of scientific and expert beekeepers were in the whole of the colony, and at the time of the holding of the first conference, the majority of the beekeepers kept bees that were unproductive. That was because they did not understand how to treat the bees, or else they showed inattention to their work. That state of things has passed away to a certain extent. But they were not proficient yet, for it was only the

other day that the Board of Exports advertised for 50 tons of honey for exportation, and was able to secure only 28 tons fit to export, and yet there was the cry among the beekeepers "What can we do with our honey?" No doubt there was an abundance of honey. No country in the wide world possessed such amount of flora suitable for honey production as that which grew in New South Wales, and no country had better advantages in all other respects. But the trouble was to separate the dark from the light honey. The former was unfit for exportation. They had only to know how to treat it and they would find that they had the best honey field in the world. The darkest of the honey should, he thought, be kept by the beekeepers for feeding purposes in the spring time of the year, instead of using so much sugar syrup. Nearly all the old countries that used to import honey, such as Germany and Russia, had fallen back in their supply. At the present time America was sending to the English markets hundreds of tons annually. New Zealand also exported a large quantity, and with the natural resources possessed by the beekeepers of New South Wales, there was no reason why N. S. Wales should not take its place among the honey exporting countries of the world. During this conference some very interesting papers would be read, and he trusted that every delegate would benefit by his attendance. He extended a hearty welcome to all.

On the motion of Mr. Abram, Beecroft, seconded by Mr. Trahair, who spoke as a suburban delegate, a motion was passed extending a hearty welcome to the country delegates, several of whom responded. The conference then adjourned for lunch.

Upon resuming in the afternoon,

Apologies were read for the absence of the following gentlemen, also wishing the Conference every success; Messrs J. E. Taylor, G. Kelly, E. J. Rien, and A. Ayling.

Mr. Gale related to the efforts taken by himself principally, to secure Government, and other aid for prizes at the late Royal Agricultural Show, and the improved accommodation secured for their exhibits in consequence; his desire to make the next occasion a grand success, and already Messrs Lasseter and Hordern had promised to place their exhibits in it then. He suggested that we communicate with Mr. Webster, the Secretary, in order to pay a visit to the pavilion to see the improvements in progress.

On the motion of Mr. Dicks, seconded by Mr. Roberts, this was resolved on.

Mr. Abram then read a paper entitled "A New Theory." He commenced by stating he was glad to say he was much better in health than he was twelve months ago.

A NEW THEORY.

It is a very singular fact that most all the important inventions and discoveries in bee culture, such as the frame hive, extractor, section boxes, foundation comb, the transferation of larva and of eggs from one cell into another, and many others of vast importance and benefit to beekeepers, were all "made in Germany." To Germany's beekeepers, therefore, we may look for further discoveries of the mysteries of the bee hive. Such a discovery has been made by Mr. F. Dickel, the now editor of the *Bee Journal*, which journal, by the way, is the first of its kind, and established over fifty years ago; and as I have seen no reference made in our bee literature regarding this new discovery, I take this opportunity to give you a few short outlines thereof, so that the experimentive inclined mind may prove for himself, its correctness or otherwise.

Mr. Dickel is an authority on bees, both in theory and practice, and the subject matter of his investigation treats of the sexual development of the inmates of the bee hive. He now contends that all *normal eggs laid by a fertilised queen are alike*, and the bees decide the sex that be. Hitherto according to Dr. Dzierson's theory, the queen laid fertilised eggs, which developed into females—queens and workers; and unfertilised eggs which developed into males—drones. It was assumed that the eggs laid by an impregnated queen into drone cells were sexually different from those laid into worker cells or queen cells; that queens could not be raised from the former nor drones from the latter. But after Dickel, such is the case, and can be accomplished, he having done it and others after him. Mr. Dickel states that when the egg is laid the bees

belabour it with their tongue in order to bring their sex-releasing, fluent secretion into action, subscribing to the hitherto known salvia glands; VII and VIII, the faculty of producing the sex-redeeming secretions, calling these the sex-releasing or sex-redeeming glands. This explanation affords a reason for the observation made by most observant beekeepers, that bees busy themselves in cells containing eggs, and why they do it? To influence the sexual development of eggs. Mr. Dickel pronounces himself thus; "Under normal conditions all eggs are fertilised, their destiny is decided by the influence of the worker bees." And again, "The sex-releasing influence of the worker bees is bound up in the effect of differential gland-secretion; it commences with the laying of the egg in the cell, and terminates as the larva reaches the normal size." This means that every egg laid by a healthy fertilised queen has the faculty to give life to either of the three bee forms—queen, worker, or drone, that in short all eggs of a fertilised queen are alike. I am not going to assert at present, which theory is the right one. My object is to bring the new theory under your notice, and to give a few directions how to proceed, so that you may experiment on your own part, and if possible prove its correctness or otherwise.

Although Mr. Dickel gives quite a set of different ways how to proceed to prove his assertions, I will confine myself for the present to one or two methods as follows: Transfer the eggs, which you see with your own eyes the queen laying into drone cells, into worker cells and give the so prepared comb to a colony, from which all brood and the queen had been taken for some time, at least 3 or 4 days previously. From these transferred eggs the bees will raise queens and worker bees. Or take a comb containing young drone larvæ, throw these out and replace larvæ of same age from worker cells, and place the comb as above stated, when worker bees, queens, and a number of drones develop. Other methods will suggest themselves to the investigative mind.

Now a few remarks more to avoid misapprehension, mistakes, and failure. Be it understood that from eggs, laid by an unfertilised queen or by a laying worker bee, drones only arise. These eggs are abnormal production and therefore unsuited for experimenting material. Then again, the beekeeper who still believes that bees transfer eggs from one cell into another, is hardly adapted for such work as above indicated. He is apt to jump at conclusions without positive proof and justification, and such conclusions must produce more chaos than harmony. The keeping of bees does not of itself qualify for experiments such as these. Experiments of this kind are by no means easily carried out, and they require clear knowledge of the subject, and most careful observations. One must be prepared for possible failures when expecting success. The transferation of eggs is a very delicate job, though not impossible. As these eggs are easily damaged in removal from their original position, though such damage may not be noticed by the operator. They must be placed in the same position as originally occupied, and the bees that receive them must be in the condition ensuring acceptance of such eggs, otherwise they are thrown out, and the experiment fails. Season and climatic conditions influencing the bees as they do, must be taken into consideration; and last, but not least, it is essential that the experimental eggs must be "new laid." The transferation of larva is to prove that even in the larval stage is sexual change possible.

In conclusion let me express the hope that experiments will be vigorously carried out here, as elsewhere, and may be that our efforts may be crowned with success. There is yet much to be learned in the bee hive. Hitherto we have adopted what others discovered and what suited us. Let us investigate, and discover something too. In matters of this kind there can be no discord, it is the strive for mutual good, and we are bound to do our best. And the subject most worthy of study, is to my mind, bee-culture.

Mr. Abrams said Mr. Dickell had carried on experiments for two years and he didn't give his mind to the public till he was prepared to overthrow the old theory. On the whole, public opinion was on the balance whether he was right or wrong. There was much opposition to his theory, Dzierson being one of its most vigorous opponents.

Some discussion ensued, taken part in by Mr. John Gale, J. J. Branch, H. L. Jones, W. S. Pender, Tipper and others, and Mr. A. Gale read a kindred paper on the "Reproductive Power of Bees," which we will give in a future issue. Although the matter is taking very great interest in Germany, it was felt there was not sufficient information yet to hand to form any judgment, and it was thought members would do well to experiment for themselves.

EVENING SESSION.

This was commenced by the reading by Mr. F. Ward, of a paper sent by Mr. Rien, of Wyee, late of the Hawkesbury Agricultural College, as follows:—

EXPORTING.

There is no subject which will require more earnest consideration at this meeting than

"Honey Export," especially in view of what is being done by the Department of Agriculture. As you will see by my article in this month's A. B. B., I do not think the regulations under which it is proposed to send the honey, are workable, at any rate they put a lot of unnecessary expense upon the beekeepers.

As we all know the greatest obstacle in our path is the "eucalyptus" prejudice. How this arose is history; unfortunately it was spread by reputable papers. I came across one of *Cassell's Family Magazines*, in which was a most extravagant article on our honey, and I think it stated our honey contained about 27 per cent of eucalyptus, and was excellent medicinally, etc., at any rate it was a great percentage. This prejudice, added to improperly strained and packed honey being sent, has spoilt our market. How is this to be overcome? Not by calling our honey "Australian Honey, 1st, 2nd, or 3rd class" etc., as it is with the Australian honey the eucalyptus prejudice is associated. We want to catch the Britisher's eye and ear before we can overcome his prejudice, and rob our honey of the "twang" as he calls it If he once got over that twang, he would find we have honey equal to, if not better than any in the world, and that there is no such thing as natural eucalyptus honey—i.e. honey in which any appreciable percentage of extract occurs. To do this ought not to be a difficult matter, but we must go to work cautiously and disarm suspicion. So instead of calling our honey "Australian or N. S. W. honey 1st class," call it by the common name of the flower from which it is obtained, avoiding every reference to the name eucalyptus. I venture to say if two samples were placed on the market, one called "yellow box" and the other 'eucalyptus melliodra,' they would only find the twang in the latter sample. We want thus to appeal to the British public, and they will soon learn to appreciate our box and other native honies. But to class and mess about mixing to get one colour, and any or every flavour, I think is working on wrong lines altogether. I should be glad to know why mixing and bulking is proposed. Cannot our beekeepers send enough of one kind to be worth consigning? Do we not know how to strain and pack honey? There are many objections to this part of the present export scheme, and I think you must agree with me, it is unnecessary and expensive, and they (the agents) are not offering such a great price that we can afford to throw money away in doing the same work twice over, or at least pay for it to be done a second time. Our honey at the present time is candied, it will not be accepted thus. To liquify large tins is a long process, and unless the honey is overheated it will candy again. Now, if we packed our honey ourselves all this would not be necessary. I have had clover honey candy in four weeks in summer. If this had been packed at once in export tins, all further trouble and expense would be saved. It is a very easy matter to decide whether the honey is the same all through, by testing the same as was done with kegs of butter. All we want is to be placed on the same footing as other industries—dairying for instance, the butter is not mixed and bulked; it is simply tested and branded, etc., just as should be done with our honey. An expert should be appointed to receive all honey sent for export; examine it, to see that it is pure; name it, as to source from which derived, and brand it. See that it is properly strained and prepared, and packed in tins and cases, the size and style as fixed upon and required by the Government. If everything is correct, then put the Government mark upon it, Then dark honey will not injure light honey, or *vice versa*, each would stand and sell upon its own merits. For some of our darker honies equal in flavour any of the light, and they should not be blocked or prejudiced. The expert would see that bush honey, native bee honey, or faulty honey would not be sent, while the beekeeper who studied his own interests would not send his worst honies.

I trust the convention will grapple with this question, and make such representations to the Department of Agriculture, that we may speedily obtain an outlet for our surplus honey, without needless trouble and expense. There need be no, or at any rate little, experimenting. Others have sent honey successfully, why not do so ourselves on similar lines. Vide I. Hopkins' letter in this issue of *A. B. B.*

Mr. Stephenson, Secretary of the Board of Exports was present.

Mr. Abram related the circumstances that had led up to the Export Board taking up the matter of honey exportation, and the little response that had been made to same. Probably it was the expense attached had debarred many from taking it up. He believed the charges were very reasonable indeed, still they came out of the pockets of the exporters, amounted to a 1d per pound in addition to tins and freight, and he believed he carried the opinion of beekeepers they did as well to sell it at home as to send it away. But looking further ahead even if we were to send honey out at 1d a pound only, it would be better than to keep it locally. As soon as we export, the probability is the price will rise here. If we could induce the Government to do the grading and packing free, it would give a fair return for the producer, and would benefit the whole industry. The agents who are here could buy and send

it home. It would be better for the beekeepers to combine and send their honey in the cheapest possible way from here. The industry had come to such a state, in spite of what was said and done that there was very little in it. Alluded to an article in the *Agricultural Gazette* of Mr. Gale's, headed "Honey and how to get rid of it."

Mr. J. D. Cadden said that if beekeepers could only trust one another, the matter would soon be settled, but there must be a better price than £15.

Mr. Albert Gale pointed out that they had been trying to run a co-operative concern for years. A few of them took up shares, but the beekeepers as a body were so mean that immediately they fancied somebody else was going to make a farthing out of their honey they kept out of the concern. However, the Government had come to the rescue with a fair offer, and if the beekeepers did not respond they had only themselves to blame for it. If it were declined, the price of honey would immediately drop.

Mr. Trahair thought that there was too much of the medium quality of honey on the market.

Mr. Cadden said we should require a practical beekeeper to class and re-grade the honey.

Mr. Stephenson said they themselves could appoint an expert to do so.

Mr. Branch said the matter of expense did not end with the £14 or £15 advanced. There was a chance of some rebate.

Mr. Stephenson said if the Englishmen made an advance of £15, he reckoned on an advance of £5 or more over there. The poultry buyers only gave an advance of 50 or 75 p.c. more or less, all expenses in London. Out of the 150 tons available we have had only about 28 tons promised. He was not a bee or a honey expert, but he had looked at the business side of this matter thoroughly and he was surprised to find such a lack of combination among the honey raisers. He could not understand it. They had asked for Government assistance, and when offered they raised all sorts of objections. It was utterly useless for the grower here to think of capturing the London market by small experimental consignments of 10 or 20 tons. The government certainly could not identify itself with any experiment which was not conducted on sound commercial lines. Unless the beekeepers would come up with a reasonable quantity the Government must decline to go any further. The Board would assist the beekeepers in every possible way, but the Government brand would not be affixed unless the thing was entered upon on commercial lines. That afternoon he had been authorised by the board to say that if within a fortnight the 50 tons were forthcoming, it would recommend the Government, to erect the necessary machinery for grading and packing the honey, without expense to the growers. It was simply a question for the beekeepers to say whether they wanted a market, and if so, whether they were prepared to conform to certain arbitrary regulations for their own good.

In answer to Mr. Branch, Mr. Stephenson said there would be no difference in the price of A, B and C, but there would be an impassable grade. There was another 20 tons wanted to get up the trial shipment

Mr. Gale said a lot of the samples sent were inferior and badly prepared.

Mr. Stephenson said out of the 30 tons accepted so far four-fifths had been graded as first-class. The lucerne would be a class to itself. Box honies would be one grade, lucerne another grade. Grading honey did not necessarily mean difference in price.

On the motion of Mr. Tipper, seconded by Mr. Roberts, a vote of thanks was accorded Mr. Stephenson for his attendance and information.

The Chairman said he had tried some of the samples sent in to the board by various growers. The aroma from some of them would raise one's hat off one's head; others were strongly impregnated with foul brood.

The discussion was adjourned to the following day.

THURSDAY MORNING.

Mr. Fred. Ward, acting secretary, read the Annual Report, as follows :—

ANNUAL REPORT.

In presenting you with this report your committee hope to show that the Association has again been of service to honey producers.

At a meeting of the Committee held on the 17th November, 1898, the difficulty of getting a full meeting was recognised, and therefore a sub-committee with executive power was appointed, by whom most of the work for the year has been done. The members appointed were Messrs. Gale, Abram, Seabrook, Roberts and J. D. Ward.

By their efforts the prize money for exhibits at the Royal Agricultural Society's Annual Show was largely increased, both by government subsidy and private subscription. This resulted in the finest display of apicultural products that has yet been on view at any Show in this Colony.

To render it more successful the Committee obtained from the Minister for Agriculture a grant of £75 towards erecting a special pavilion for "Honey and Bee Exhibits." The Royal Agricultural Society granted the space, and carried out the work.

The building was visited by thousands every day. It was an interesting and educative display. Education must surely lead to a larger consumption.

The committee has kept in touch with the Department of Agriculture, which is now disposed to look very favourably on the industry.

They have also interested the Board of Exports on your behalf. The Board of Exports as you know, are now willing to try and get a good market for us in the large markets of the world, and so relieve the perennial glut here. Holders of honey have been invited to communicate with them, and we regret that the result has been very disappointing. In a matter of this kind we must be enterprising, we must take an initial risk or we cannot expect to succeed. No one is more likely than the Board of Exports to be successful. It would not be reasonable to ask them to handle a small quantity, which would be no sure index to the demand likely to be created.

In conclusion we would wish to urge upon all who have the interests of the industry at heart, the necessity of co-operating for the general good.

F. WARD, for
J. D. WARD,
Hon. Secretary.

It was adopted on the motion of Mr. Lord.

The following officers were elected for the ensuing year :—President, Mr. A. Gale; Vice-Presidents, Messrs. J. T. Wilshire, J. E. Taylor (Cowra) H. Lord, E. Tipper (Maitland), and W. Abram (Beecroft); Treasurer, Mr. G. Bloxham; Secretary, Mr. J. Trahair; Committee, Messrs. G. Packham (Molong), D. Grant (Muswellbrook), W. T. Seabrook (Bathurst), H. R. Roberts (Bathurst), J. J. Maxwell (Albury), A. Ayling (Dubbo), R. Pender (West Maitland), F. W. Penberthy (Inverell), H. Nancarrow (Wellington), F. Ward (Liverpool), J. J. Branch, Cadden, and Dick.

Messrs. Gale, Trahair, Dick, Seabrook, Ward, Roberts, Cadden, and Branch, were appointed a central executive committee.

Mr. Gale, in returning thanks, alluded to the work done by the central committee, and hoped the country members would take more active interest. He hoped the 50 tons required by the Export Board would be obtained.

An adjournment was then made to the Royal Agricultural Show Ground, to inspect the work at the honey pavilion. They were met by Mr. Webster, the Secretary, who listened to the various suggestions made as to arrangements of tables, flooring, etc., and gave directions to workmen present accordingly.

In the afternoon, Mr. H. L. Jones read his paper on Apis Dorsata. He also produced samples of same.

APIS DORSATA.

A good deal of interest is at present shown in America in regard to the introduction of Apis Dorsata, and as these bees are found comparatively close to our own shores, it might profit us too to take a hand in the matter. These giant-bees are found in India, Ceylon, Malayan Peninsula, and still nearer to us in the islands to the north of Australia, namely Borneo, Sumatra, and several others; and as many of our mail boats regularly pass and keep in touch with these islands, it should not be a matter of much difficulty for us to secure and test the capabilities of a species of bee of which so much is expected by some. The Americans have made

many efforts to introduce these bees, and over 20 years ago Mr. A. I. Root, offered $100 for one colony of Apis Dorsata, delivered alive in America, and at the present time he is offering $20 for a single queen alive, but so far no one has made any claim for either of these rewards.

In 1880, Mr. F. Benton, an apiarist of considerable experience, undertook a trip to India, Ceylon, Borneo, and adjacent islands in quest of these bees, and although he succeeded in capturing several colonies, he failed, principally through illness, to land a single colony in America.

I have some samples of these bees here, received from a beekeeping friend in Singapore, and as you will note they are marked much like Italian bees, but are almost twice as large. In their habits they are somewhat different from our common bees, as they usually build but a single comb, and that in the open air. These combs are reported to be of very pure wax, often from 5 to 6 feet long, and 3 to 4 feet deep, and are attached to overhanging ledges of rocks, or very thick horizontal branches of trees. The drones are slightly smaller than the workers, but are raised in the same cells, therefore all their brood cells are of the one size—about that of our ordinary drone cells. They build longer store cells, however, which are used for storing honey only, and measure about three cells to the inch. These store combs are beautifully white, and sometimes as much as six inches in thickness, thus making the cells on each side, three inches in depth.

Probably no one can speak with more authority on these bees than Mr. Benton, and I will therefore quote his opinion as to the results that may be expected to accrue from their introduction of these bees. (1) It is hoped that Apis Dorsata may be domesticated, and kept in hives in a manner similar to our ordinary bees; and that this large bee, having a tongue longer than that of ordinary bees, will be able to secure the honey from various blossoms, from which our bees get little or nothing. (2) An effort would be made to produce and test various crosses between Dorsata and Mellifica. If such crosses can be obtained, possibly something more valuable than either of these bees would result. One is led to think of this by the fact that drones of Dorsata do not differ greatly in size or general appearance, though somewhat in habit, from ordinary drones. (3) Even if Apis Dorsata should not prove valuable in domestication, there seems to be no reason why it should not, if introduced and set free in our Southern states, produce there, as it does in the forests of India, great quantities of honey and wax, the latter product (derived almost wholly from Apis Dorsata) forming an important article of export from India.

Such is Mr. Benton's opinion regarding the possible value of these bees, and his reference to the importance of them in the Southern States of America, should apply here, where conditions are somewhat similar.

So far I have only mentioned the benefits that are expected to be derived from the introduction of these bees, but there is certainly another side to the question, and many well informed beekeepers maintain that its introduction would be an evil and worse than useless. In its native habitat Apis Dorsata is a migratory bee travelling North at certain periods of the year, and South at others, but whether it would follow its migratory instinct here, and prove unamenable to domestication, despite our most skilfull manipulations, experience only can tell. The same doubt exists also as to the possibility of crossing it with our common bees, many maintaining that as it is a different kind of bee, crossing would be an impossibility. In any case there would be some difficulties to be overcome as the drones of Apis Dorsata do not fly until towards dusk.

These bees have also been described as perfect fiends to sting, but Mr. Benton denies this, and states that he can manage them with ease. Notwithstanding their large size, their sting is no longer than that of our ordinary bee, and they are reported to be so clumsy in its use, that a person can, with a little celerity, brush off the bee before it can get its stinging apparatus into operation.

In conclusion, I will mention, that I hope to be in a position to furnish further information in regard to these giant bees before long, as I have a friend (a practical beekeeper) who is now experimenting with them in their native home, and endeavouring to domesticate them with the assistance of modern hives and appliances.

Mr. John Gale asked if it was domesticated in its own native home.

Mr. Pender asked if a cross between the *Apis Dorsata* and our Italian bees would not produce a mule.

Mr. Gale—You could only produce a cross between varieties, not species, the dorsata was a species, not a variety.

Mr. Pender thought they might be valuable for wax production.

Mr. Bradley said he had lived long years in India, and the man who brought them here ought to be prosecuted. He could have introduced them years ago, as he had friends who could get them for him. He gave some account of their habits and fierceness. They made large combs in the open air, which they would leave, honey and all. They were as bad as wasps, with stronger colonies.

Mr. Abram related an instance of a gentleman who had gone to expense and travel, and then decided to leave them alone. He could not see any benefit to be derived from them.

Mr. Jones in reply, said a gentleman in Singapore was going to try to domesticate them, and if he succeeded he would get them from there.

Mr. C. B. Hughes read a paper entitled "Beekeeping in the Avondale School," founded by the Seventh Day Adventists, near Morrissett. After describing the way in which the school is conducted, he went on to say:—

"Two years ago a gentleman wished to send a son and daughter to school for awhile, and offered twelve hives of bees in payment. I had no experience in beekeeping, and so accepted his offer as an excellent opportunity to gain one, and thus introduce a new line of practical work in school, which would give employment and useful instruction to our students. Being entirely ignorant of the work myself, it became necessary for me to learn before I could teach others. I procured a copy of Root's A. B. C. of Bee Culture, and went to work. I found the work fascinating, and my ignorance, at times, made it exciting. At the close of the first year I had 23 hives of bees and had taken 1100 pounds of extracted honey. The past season we have grown from 23 to 41 hives, and have taken over 6000 pounds of extracted honey.

After spending a year in the work myself, I began to instruct the students. At the beginning of the present year of school, I met both ladies and gentlemen for twenty minutes after dinner each day, and gave them instructions as far as I was able, in handling bees, and producing honey. The ladies seemed to be as much interested as the gentlemen. The students joined me in caring for the bees, and extracting honey.

In a short time I expect to form a class of those students who are specially interested in beekeeping, and give them careful instruction, so that when spring opens they may be able to do all the work of the apiary under my supervision, thus giving me time for other matters.

Mr. Abram said he felt it his duty to mention he owed the present state of his health to a friend that had attended this school.

Mr. Gale re-opened the discussion re the export of honey.

Mr. Bradley quoted extracts from the *A. Bee Bulletin* showing the price of honey in England (page 179, vol. vii) in November last was 18/- to 30/- per cwt., also from the *Strathearn Herald*, Scotland, Oct. 1, 1898, which says:—"The honey harvest has been all but a failure in the district this season, and this, I am told, is to be accounted for by the absence of genial showers in the months of June and July. The heath in August was far from a luxuriant bloom, consequently, what is commonly known as "heather honey," scarce. Good imitations, composed of a mixture of the real, with common brown sugar, is fairly plentiful and retails at 1/6 per lb.

Now the Board of Exports have a proposition to send a quantity of honey, and they will take and classify it as first, second class, subsequently a third class, and all to be clubbed together, heated and strained. He did not hesitate to say that if you want to ruin honey you would recommend him to do that. You cannot heat honey in bulk. We were told nothing about the London charges, not even who the agents are.

Mr. Gale said the agents in Sydney, were agents from England to buy other products and honey was included.

Mr. Bradley said the London charges, and commission, insurance, packing, etc, would leave £7/2/3, or ¾d per lb. for honey. The Board for Exports said the apathy of the beekeepers had given disappointment. He had received over £19 a ton in Sydney. Another peculiarity at first it was £16, then £15, then it comes to this, that we were to guarantee any deficiency. What were we to pay that guarantee out of. The Government had no right to charge us with apathy. The Board of Exports have not made it sufficiently plain. You could not depend on Australian tins. There were thousands of tins with far more dangerous contents than honey would be, without blotting paper.

Mr. Gale—Kerosene and honey, are two different things.

Mr. John Gale had been suspicious from the start of this Government scheme of exportation, the ridiculous price and the conditions under which it was presented before us. We were kept in the dark as to whom it was going to. He gave an instance of a young person going home to Liverpool to be married, and taking some Australian honey, the people