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West Maitland, N.S.W.: E. Tipper, February 28, 1899

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THE AUSTRALIAN Bee Bulletin.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

VOL. 7. No. 83. FEBRUARY 28, 1899. PER COPY, 6D

Per Annum 5s, booked 6s 6d; in Australasia, outside N.S.W., add 6d. postage.

The Committee of the N. B. K. A. beg to announce that the prizes already scheduled by the Royal Agricultural Society, amount to £44 15s (being £32 in excess of last year). But a strong effort is being made to raise the total to £50.

The Committee is responsible for £10 out of the £44 15s, and being desirous of making the schedule prizes amount to £50 as above mentioned, they now appeal to the beekeepers of the country to subscribe £15 5s (being £5 5s in addition to the sum of £10 already guaranteed by the Committee.) Will every beekeeper send along a subscription towards the sum required. Send it immediately you read this paragraph and don't you forget it.

Amounts may be sent to
The Editor, A.B.B., West Maitland.
Mr. Albert Gale, Sebastapol St., Stanmore.
Mr. J. D. Ward, 129 Pitt Street, Sydney,

The Australian Bee Bulletin.

A JOURNAL DEVOTED TO BEEKEEPING.

MAITLAND, N.S.W.—FEB. 28, 1899.

HAVING in Sydney a short time since, seen the large quantities of honey in the warehouses in Sussex street, we felt it our duty to get an idea of the quantities in other places. For that purpose we paid a visit to Maitland, to find that nearly all the apiarists in that district have big stocks in hand, with no chance of disposal at present. Conversing with several they did not seem hopeful of any great relief by the Board of Exports, the stipulations as so far understood being considered very detrimental. A question arises, will this present glut and cheapness result in good by making honey more generally used in future? In the matter of exporting, we should imagine it will be useless to send to England now, as it would arrive just when the home honey harvest is coming in, and make a reduction in prices all round. The only time when it should arrive in England is in winter, when home stocks are generally low, in December or January, and as a rule honey is more in demand at that time of year. We should not be discouraged because a bounteous year has given us a surplus. The past year was a failure in Victoria. A good season in one place may be followed by a bad season in others. Best to keep honey in stock and wait.

THE summer being now past, beekeepers should look forward to preparing for the winter. Queen rearing should be all done, except by those who make a special study of such. Extracting honey should be limited. In our own district and we believe in most places, the main honey flows are over, and care should be exercised in leaving enough in the hives to afford food and warmth for the winter. For there is warmth in honey combs in addition to their value as food. As honey ceases to come in, drones will be driven out of the hive or killed. In queenless hives only will they be tolerated. This fact may be utilised by those who need to go in for late queen rearing. All hives should now have good young queens in order to give good work for the coming spring. In the colder regions of the north queens are said to live for several years and to be at their best in their second year, but then they have several months rest in winter, during which egg laying ceases altogether. In our milder climate they lay nearly all the year round, therefore are worn out at a much earlier period. Where hives are queenless, if weak unite, otherwise get young queens from good queen breeders.

As a rule a queen lays in ten days after being hatched from the egg.

The Hon. Secretary of the N.B.K.A., requests us to announce that his address is J. D. Ward, 129 Pitt St., Sydney.

About £50 will be given in apicultural prizes at the coming Royal Agricultural Show in Sydney on 29th March to 4th April.

Every week brings us applications for trial copies of the *ABB* from all parts of the different colonies. It is to us most flattering.

Quite a number of flattering press notices of the *A. B. Bulletin* appeared in periodicals in different parts of Australia during the past month.

ERRATA.—In Messrs Bloxham Bros., advertisement last month re queens, it should have read *two consignments* from Italy and *one consignment* (Carniolan) from Austria.

At the last meeting of the H. R. B. Association it was resolved that the bee-keepers' Convention to be held during the show week at West Maitland in April next be postponed till the following year.

Mr. A. Gale, President N.B.K.A., is anxious to obtain specimens of all kinds of bee enemies, also reports of contents of their stomachs. He will give scientific and other information re such specimens in the *A. B. Bulletin.*

In conversation with Mr. Robert Pender, he informs us that there has been a phenomenal yield in Maitland and the Hunter River District, yields of five up to ten tons honey, and in some cases more being common, the trouble however being the disposal of same at the present low prices.

Great care should be exercised to prevent robbing at this season. Leave no loose comb or honey about. Do what you have to do and close the hive as soon as possible. Directly you see an indication of robbing—bees trying to get into hives at any place but the entrance, soon leading to fighting—close up and go away. Some people use bee-tents which no doubt are useful.

There seems to be trouble at Mudgee. Mr. Shaw, of the *Post*, has an apiary of 150 hives in the town. There is another apiary of 20 hives close by, besides smaller numbers elsewhere. A "Silly Petition" against same has been got up. We shall be pleased to hear how things get on. A writer in the *Guardian* says: "There are nine million bees at his end of the town, and each has a *bees*-iness like sting."

Among the many agricultural journals we receive in exchange, we feel we must say a word for one which comes very regularly—the *Australian Tropiculturist*, published in Brisbane, Queensland. It always contains a vast amount of up-to-date information on farming, grazing, stock-breeding, &c, and though published and written for Queensland will be found most useful to any engaged in those occupations in any of the other colonies. We most heartily recommend it.

How long it does take to wipe a bad name out! The *Rheinische Bienenzeitung*, after giving its readers some items from the *Australian Bee Bulletin*, gives the following:—"*More trouble has the Australians with the eucalyptus aroma of the honey which most Australian honey has, and which is the reason that stops them exporting.*" We are sending the editor a sample of box honey for his personal opinion of what should be our staple exporting honey. The same journal says:—"In France and Belgium, in removing bees from one location to another the railway authorities give great consideration. For two tons they give a special truck and only charge for two tons, the apiarist being allowed to travel free with the consignment."

An editor's billet is not always a happy one, especially if "ends don't meet." In our own case we have managed that ungainly task. In addition, however, there are occasionally some days that to us seem very cheery. One of such occurred during the past month. It was only an ordinary day—not even a birthday. On the same day arrived—a packet of prime wattle seed. Friend Penberthy sent us

(unsolicited) two of his special queens. (Knowing how carefully he raises such we do prize them.) A. Maitland bee-keeper sent us a case of most delicious grapes ; and Cousin Anderson, of Kilcoy, Hexham, who is not only a master bee-keeper, but knows how to rear and grow tomatoes, also imports the best seed and gets the very best price in his local market—Newcastle—sent us a case of such beauties—every one a clean fruit—nearly three inches across, every atom eatable—oh, such gems! With the grapes, the tomatoes, the queens, and the wattle seeds (over the ground for which we made some good bonfires) we had a real red letter day.

THE BOARD FOR EXPORTS.

We acknowledge from above receipt of copy of conditions under which English agents are prepared to make advances on honey for export. The communication states *should our honey compare with Chilian, it may bring any price from* £20 *to* £28 *per ton according to demand.* We would very much like in our next issue, a good many expressions of opinion on these conditions. They are as follows :—

EXPORT OF HONEY.

OUTLINE OF REGULATIONS.

1. All honey for export shall be received at a store in Sydney, in owner's packages.

2. It shall then be graded into three or more classes by an expert or committee of experts.

3. Each class shall then be bulked, strained if necessary, and drawn off into specially made tins of (say) 28lbs. each, two of which shall be packed in a case. These cases shall be branded with the export stamp of the Board for Exports, and a letter or figure denoting the grade.

4. All charges incurred in preparing and packing shall be deducted from the advance made by the agents, and such charges will be made as low as possible.

5. The experts shall rigidly reject any samples which in character, colour, or flavour, shall be deemed to be inferior or likely to prejudice the sale of the honey in Britain, and no claim for loss or damage in respect to any samples so rejected shall be entertained.

6. All rejected consignments shall be at once removed from the store, failing which it shall be sold by public auction on owner's account, and at his sole risk and expense.

7. A receive note shall be handed to each owner denoting the quantity and grade of his consignment, and in case of different prices being obtained for any portion of the same grade, a general average will be struck, on which payment shall be made.

EXPLANATORY NOTE :—

Original packages will be returned.

Advances will be paid on shipment.

The advances will be according to grade, and will in no case exceed £16 per ton, less expenses for grading and packing.

The regulations, when finally adopted will be published for general information.

JAS. STEPHENSON,
SEC. BOARD FOR EXPORTS.

NEW SOUTH WALES N. B. K. A.

A Committee meeting was held at Mr. Trahair's office, The Strand, Sydney, on 10th February.

Present: Mr. Albert Gale (President), and Messrs Trahair, Abram, Roberts, R. Pender, and J. D. Ward.

The Sydney sub committee reported the result of several meetings and a Deputation to the Department of Agriculture.

Mr. Gale reported having had sundry interviews with the Under Secretary for Agriculture, and also the Secretary of the Royal Agricultural Society, and he was able to inform the committee of several important items of progress since the last meeting.

1. The Department of Agriculture had definitely promised to donate £20 towards prizes at the forthcoming show

provided the beekeepers raised £10 amongst themselves. The sub-committee had guaranteed that this would be raised.

2. In addition to the Government grant of £20, Messrs A. Hordern and Sons had promised a special prize of £5, particulars of which will be forthcoming shortly. It was offered after the Schedule was in print, but will appear in a supplement to be issued by the Royal Agricultural Society.

3. The Royal Agricultural Society had been approached with a view to providing better accommodation for apicultural exhibits. The Secretary of the Society had stated that they are willing to subscribe pound for pound to erect a special pavilion, and on the Department of Agriculture being approached a very favourable reply as to assistance was received, and it was expected that in a week or two the work would be in progress.

Judges and stewards for the forthcoming show were nominated by the committee.

Communications from the Board of Exports were placed on the table and it was directed that the sub-committee be empowered to deal with it.

After discussion it was decided that there should be a second prize of £3 awarded in the Champion class.

It was also decided, that if funds permitting, the sub-committee should make any further additions possible to the prize list.

QUESTIONS.

198.—Which do you prefer, the eight or ten frame hive?

J. KERR.

199.—Does the Porter bee escape with board afford sufficient ventilation for the time when placed underneath a top story full of honey and bees during hot weather?

200.—What district in N. S. Wales do you consider best suited to bee farming?

201.—Will Easter week be a good time or too soon for the next Convention of the National B. K. A.?

202.—A protected queen cell put in a queenless hive. Will the bees tear down cells they have started previously or wait for the emerging queen to do so?

JOHN TARE.

198.—10 frame. I used eight for years, but found brood nest too small; now have ten frames and every comb full of brood.

200.—Mossmans, North Sydney, honey colour of strong tea, worth ¾ per lb. in Sussex Street.

201.—Easter week by all means.

J. D. WARD.

201.—Easter week is not a good time to hold Conventions. Those who attend the show have plenty other matters to look after during a brief visit to Sydney, and many hear their bees all the while calling them home. Also most of those who exhibit would have no time to spare for Conventions.

A. J. PANKHURST.

198.—I prefer the eight frame hive before anything else.

201.—I think too soon. Next July would be soon enough for the convention.

202.—No, they will not tear down the cells they have previously started, until the emerging queen comes out to do so.

AUSTRALIAN YANKEE.

198.—EIGHT, every time.

199.—No not nearly.

200.—Could not say, but should think the Northern rivers A1.

201.—Just the right time.

202.—No sir, they will be left until the young queen hatches, then either she or the bees will tear them down.

R. H. JERVIS.

198.—Ten.

199.—Not in all cases. I had one lot go bung.

200.—Box Locality.

202.—Wait till queen emerges, then workers will destroy them, sometimes same day, at others not for three or four days.

A. A. ROBERTS.

198.—It all depends on locality. Eight frame suits this locality.

199.—I think there is not sufficient ventilation but it does good work.

200.—Don't know, would like to find out.

201.—Easter week in my opinion is the most suitable time for the majority of beekeepers. If held at Easter time, I hope to be there.

202.—Wait for the queen to emerge every time.

G. PACKHAM.

198.—I don't prefer either. I use nine in the brood chamber, and eight in the super.

199.—Never used it, so don't know.

200.—Not having travelled all over N. S. W., do not know, but from reports would say, Wattle Flat or Cargo.

201.—I should consider that during the Sydney show would be a good time for the next Convention.

202.—Have never known bees to tear down cells until a young queen emerges.

ALBERT GALE.

198.—Will depend on locality and laying powers of the queen.

199.—No.

200.—The valleys in the Western slopes of the Great Dividing Range.

201.—No. Will hold an informal meeting or a committee meeting of the whole.

202.—Bees are so erratic that what they do one time they will not another, and what is done by one colony will not be followed by another; like the Yanks, I would not like to prophesy till I know.

F. W. PENBERTHY.

198.—Ten frame hive.

199.—I should think so, if not the bess would soon clear out of it.

200.—Not this district. Don't come up here.

201.—There would be a better attendance at the convention, if it was held just before the show at Easter. Country beekeepers would exhibit more at the show. How few will come to a convention only, that are living over 100 miles away.

202.—The queen does it herself until she reaches the inmate, which she kills; the bees do the rest.

J. KERR.

198.—Eight frame hive for localities where the honey flow takes place in spring and is of short duration. Ten frame hive at least, or more where the honey flow is great and prolonged. I have tried both and found much better results with the smaller hive in a suburban locality and coastal district. The bees spend too much time in the larger hive attending to the greater surface of the brood, whereas in the smaller they will go aloft or into the supers much sooner, and store honey rapidly and before the chief flow has passed.

LOYALSTONE.

198.—I only use the Long Ideal hives; but if I had to choose between the two would have the ten-frame hive.

200.—There are lots of vacant localities in N. S. Wales suitable for beekeeping on a large scale. For instance there is good country between Narromine and Peak Hill, between Cowra and Grenfel and Forbes, along the Abercrombie River and many others.

201.—Easter week should be a good time to hold a convention. Beekeepers should take a leaf out of The Farmers and Settlers Association Book, branches of which are forming and doing good work in many farming districts in N. S. Wales. They combine well together, and there is no jealousy like among beekeepers.

202.—In 99 cases out of 100 the bees care for all cells until the protected cell hatches, and then if the swarming fever is not on, she is allowed to sting young queens in cells and then bees pull them down.

G. H. ARKINSTALL

198.—I have given both a thorough trial and for producing extracted honey I favour the ten-frame, as the bees go into winter stronger with the extra room, (always providing you keep good prolific, what I call ten-frame queens in your hives). Of course any one who keeps queens on the "there's a frame of brood raise a queen for yourselves style" I would advise to stick to eight-frame as they will be plenty big for such.

199.—Bee-escapes may be alright for comb honey but I dont think it will pay to fuss with them for extracted honey.

200—Don't know, but I think almost any where on the western slopes is good.

201.—Yes, best time you could hold it.

202.—They will not tear them down until there is a queen emerge from the cell and not then unless they are capped. I have had several cases where they have not been destroyed until after the queen has returned from her wedding flight.

A. F. BURBANK.

190.—There are a variety of causes of the pupæ being dead in the queen cells. This often happens during bad seasons when pollen, etc., is scarce. If you happen to give the combs (containing queen cells that are newly capped) a severe shaking it will often kill the pupæ. Another cause is cold weather coming on suddenly when the bees have more brood and queen cells than they can care for properly, thus the cells and pupæ get a chill.

191.—Autumn reared queens (if reared when the weather, etc., is favourable) are the very best you can get.

192.—If you have a honey house handy carry the hive inside, fix it up, and when you are finished, put it back on its old stand again. If there is no building near, take the hive sixty or more yards away from the apiary, put an empty hive in its place until you bring the hive of bees back again, after having done all you wanted to it.

193.—If the swarm is pretty good and worth the trouble of saving, get an empty and fill it with empty brood combs, and put the cover on. Now take the assailed colony away forty or fifty yards, smoke the bees a little, and cover it up completely with loose straw or grass. While you are moving the hive, etc., get an assistant to place the hive containing the empty combs on the stand of the hive just removed. The robbers will soon begin to think that they have got all that is worth having and will soon retire. Put the colony that was attacked back in its place in the evening and contract the entrance.

194.—If you use bar frames and proper boxes just take frames out, cut out damaged parts of combs, boil them down for wax and sweep the bottom board clean, then the bees (if Italian or Doolittle) will take care of themselves. If the bees are in common box hives, the sooner they are transferred to frame hives the better, as it does not pay to keep bees in box hives these times.

195.—Should you happen to be in a district where diseases are prevalent they should be overhauled about every fortnight. If your district is free from bee diseases, the brood nest need not be touched more than every two months, swarming time excepted.

196.—Of course you can smoke bees out of a hive, if you like, but I have never known an ordinary smoking to hunt them out.

197.—The Novice two frame if properly made is as good as any for small apiaries.

QUESTIONS NEXT MONTH.

G. H ARKINSTALL.

203.—Does the progeny of a pure Italian queen, raised in black colony, partake of the traits or qualities of such black bees on account of being fed with chyle digested in the stomachs of the black nurse bees?

W. C.

204.—Which is the best wax extractor?

205.—If you have a good home-made wax extractor, give brief description how to make same?

X. Y.

206.—What effect, beneficial or otherwise have Agricultural Shows on the beekeeping industry?

207.—Give some account of bee enemies most prevalent in your apiary?

O. K.

208.—What accounts for pure Italian queens producing black drones?

209.—Would pure queens meeting black drones from pure mothers, be hybrids?

210.—Has any beekeeper had a queen not much good for laying the first season, but very prolific second season?

We are sorry to hear that Mr. G. M. Doolittle has met with an accident, breaking two of his ribs We are sure he has the sympathy of all Australian beekeepers, and their best wishes for his speedy recovery.

STINGS.

If we go to the hives in the middle of the day, when the bulk of the workers are away and use gentleness in our handling the frames, using only a little smoke when commencing, very few stings need be feared. Towards evening when the field bees are gathering home more care is needed, especially if not much honey is coming in. At such time robbers will come about, and the fighting spirit starts, first to repel the robbers and then to attack everything they come across. On one occasion when the bees had been fairly quiet all day, we left for our last job the giving a better hive to a swarm. It was about five in the evening. It was simply to remove the hive aside, and lift the frames into the new hive on the old stand. They started to attack every living thing within 100 yards, and only ceased when night came on. We are not afraid of stings, and can stand as many as any one, but we always wear a veil. Why? Our eyes are valuable to us, and we have more than once seen poultry stung in the eye, rendering them totally blind ever after. In changing from a box to a frame hive do so away from the stand where they have been. You have only then the young bees who are not fightable, to contend with; the old ones will be outside hovering over their old stand. With manipulating a number of hives you are not likely to take the excessive gentleness as if there were only one or two. Hives in small yards with people constantly passing are easier to manipulate than those where the bees are not accustomed to persons passing.

* * * * *

A virgin queen put into a queenless hive or a queen-cell in a protector. The young queen being no larger than a worker before being fertilized, is very difficult to find. Possibly she may have been lost in mating. There is a doubt whether she is there or not. Our plan always has been to give a frame with larvae. This serves different purposes. Should the queen have been lost, it en-

ables them to raise another queen. If the young queen should be there, it prevents the bees swarming out with her when she goes out to be mated. It adds to the strength of the hive and gives young bees to encourage her to lay when mated. And should she be lost the hive is not in bad condition for cell rearing, having been queenless for a time, with the young bees well out and no larvae to attend to but what is now given. It was a queen reared under such conditions that topped the record in our apiary last year.

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GOSFORD.

J. J. PARRY.

Just a line or two to let you know how the bees are doing round Gosford. I must say that it has been one of the finest seasons I have ever had since I commenced beekeeping. I must tell you that the season is not over with me, plenty of blossoms out yet. I've got two and three supers on the hives and they are all full. Honey! why I don't know what to do with it; 84 hives all in splendid condition. I am very sorry, Mr. Editor, that the price of honey in Sydney is very low. There never existed a time in the history of beekeeping in Australia that was so ruinous to the producer as at present. If you go into a store in Sussex St., and ask the price of honey, you will be told 2½d, 2d, 1½d, and if you objected to these prices, they will ask you to fix a price yourselves, by asking what will you give for a tin. Well, when it comes to that its something terrible. Brother beekeepers, you will keep boasting about your big crops, causing amateurs to go into the business and competing against you in the market. I don't wonder at some of you getting extraordinary large crops when you are chasing the bees with the extractor, taking the honey from the combs as fast as the bees put it in. Don't do that, friends, your honey is not as nice, nor does it give the same satisfaction as when it is properly ripened in the hive. I have explained the reason why in several of my former notes. Whenever one is speaking to those not engaged in the industry about the low price of honey, the first thing they say *co-operate*. Well I believe for years beekeepers have been labouring in vain for that co-operation, which is so requisite for the success of one of Australia's future industries on a solid footing. I myself, think we ought to commence a "New Era" by protecting the consumer as well as the producer. Well, that's the query. To do this is more difficult than we imagine. Various remedies have been pointed out time and again, by a lot of our beekeeping friends, but their explanations so given, I don't think, have been altogether satisfactory. I am not pretending to solve the question myself. As honey is only occasionally eaten by most people you could not very well have carts runing like those selling milk, with regular customers. But in one of the back numbers of the A.B.B., Mr. F. J. Foster put it very near the mark, to my way of thinking, getting one's labels with the N. B. K. A. "trade mark" on, and the public appealed to, only to purchase honey which bore the trade mark of the association. The dullness and low price of honey in Sydney, is I believe, in some respect, due to so many novices around the City keeping a few hives. Those that bought supplies this season, I don't suppose the supply dealer will see them again. I know one firm in Sydney that has sent a considerable quantity of hives etc., to people living in the suburbs. I also hear that the Export Board is going to grade, and send shipments of honey to London.

Nil desperandum, brothers, you will soon be getting the cold weather on you now, so look out and leave sufficient stores in your hives for the bees. I always save my old and crooked combs and put them in a super over the quilt, which I cut a hole in; the bees come through and clean them out. I don't intend you to feed them going into win-

ter quarters, that's bad management, always leave enough sealed stores to sustain them through the winter. Stimulate them as much as you like in spring.

DISEASES OF BEES.—I have no experience, but it is deeply interesting to me, to read my brother's notes. It appears to me, that most of them differ in their remedies for foul brood, etc. I also notice that most of the beekeepers who have lost heavily with disease among their bees, after trying most of the treatments recommended in the text books, generally finish up with being more successful with some special remedy of their own. Science has not yet arrived at any accepted theory of its origination, or any specific remedy, also any hope of guarding against its invasion into a healthy hive.

Contaminated honey may be a cause of the propogation, because the best and strongest hives are generally attacked by these Bacilli, which seems to me, as if the bees had got it by robbing some poor weak hive. I myself think that if the above suggestion were carried out, that it would be a step towards co-operation.

F. B., Mount Gravatt, Q., 17th Jan. . Season very poor here this time, too dry, but the bees are keeping themselves going alright. I will get very little surplus this season.

H. B., Wilmington, S. A.. Feb. 21:— I have got 25 strong swarms again and the honey is coming in very nicely and we are stacking, and honey being only 2½d lb. best sample, it will pay to keep for a rise. The box trees are still suffering from the late drought, but red and sugar gum are yielding well. Have not shifted yet to out apiary, will start to do so next month. I find the B. B. very useful and receive it very regular. I have 2000 frames and a lot of hives. Bees died in them from spring dwindling, and if boiled in large tank do you think they will be safe to use.

[If there was no disease they are safe enough to use without boiling.]

W. C. Braidwood, 16th February:— The season here is I believe the worst on record. Up to date I have not been able to get an ounce of honey and bees are in a state of starvation. Two hives have starved out and they were both goldens. I think their only good point is beauty, for while Italians, hybrids, and blacks have managed to live, the only two goldens I had starved out. This fact may not prove that the goldens are not good workers, but it is enough for me. I have now tried Cyprians, Carni-Italians, and Italians and I feel quite satisfied that for honey gathering there are none of them equal to leather-coloured Italians or first cross between Italians and the black bees, the two latter I think being about equal.

G. G., St. Ives, Gordon, Feb. 6th:— It is some time since you had any news from me. Bees have been doing well off Mahogany and Blackbutt and are now on Pepperment, and Bloodwood well in bud. Re that article on the Solar Extractor by Mr. Bennet (March '97.) I have the ordinary Doolittle made by myself. Instead of taking the iron out and substituting laths (and getting honey, propolis, and wax altogether, minus the gravy), I have simply made a shallow bottomless box to fit in between the iron and glass. Get some laths, rip them in two, fit them in the bottom of the box on edge ⅜ of an inch apart. Now put the dish underneath as usual with a piece of board under the glass at the low end to break the sun's rays off the dish, fill the box with cappings and as fast as they go through refill it. Result.—At night remove the dish containing nothing but honey, flavour and colour so slightly impaired that it can be mixed with the extracted. Next morning remove the box and shade board, and the wax will go down in the usual way. I have tried several ways for fastening foundation to top bar including Daisy roller, melted wax, wax candle, window glass, etc., but the best thing I have found is a little tool called a Tuckpointer's Jointer. Have a kettle of hot water handy with the tool in and you can fasten foundation in as fast as you like.

WINTERING.

The following article, by Mr. C. P. Dadant, in the *American Bee Journal*, though written for the cold climate of North America, may still not be uninteresting to Australian beekeepers, and perhaps of practical value in the colder regions of Australia and New Zealand :

INTRODUCTION.

I believe the question of shelter, in out-door wintering, is of more importance than generally believed. Though it is true that in some instances, colonies have been known to winter safely, when exposed to the fierceness of the winds, these exceptions, instead of weakening the rule, can only strengthen it, for it will always be found that the circumstances otherwise were most favourable, where the results were so unexpectedly good.

In a natural state, the bees which are hived in hollow trees can hardly be used as a safe criterion, for we have no manner of knowing how many or how few such colonies winter safely in this climate, but even if it could be proven that they generally succeed, the fact that their abode is usually at only a short distance from the ground, and in thick timber, where the force of the wind is lightly felt, and the additional fact that the body of the trunk which they inhabit is very thick, much thicker than our improved hives, would still indicate that some shelter is advisable. The straw hives used by some of the old apiarists of Europe were certainly very good abodes, as far as winter protection was considered; for they were very thick, and the material used is one of the best non-conductors of heat or cold. But it is out of the question to make such hives to-day, or at least put them in use in a practical way; so we must see what we can do with the ordinary movable-frame hives.

Double-wall hives are very good for winter, especially when they have a dead-air space between the two walls. They are exposed to two weighty objections. The first is that, in the warm days, or in early spring, they are not readily and quickly warmed by the first rays of sunshine, and the bees in them will be less readily induced to take a flight. The other defect is their cost. Few beekeepers will adopt them, because of the expense involved in the purchase of such hives. This objection should have no weight with a practical man, who will readily figure that the first cost of a hive is a trifle, when he considers the time of its usefulness, which may be reckoned, if the hive is well made and well painted, not less than 30 years. But, since most of our apiarists have only single-walled hives, it is useless to spend much time in the consideration of anything else.

A bee-house, if properly made, built as a shed, with a roof and three sides closed for winter, would be an ideal wintering place, especially if the front could also be closed during stormy days, and the hives more or less packed in straw, leaves, etc. But a bee-house for a large apiary is almost out of the question, and it is only in small apiaries, or in cities, that they are used.

A tight board fence is a good shelter as far as it goes, especially if on the north side of the apiary. A movable outer cover covering made so as to fit over the hive, and arranged so it may be taken to pieces and piled away for summer is very good. It may be made of rough boards, or of thin lumber to be more easily handled when removed. But it must be so arranged as to permit of the bees' flight during warm days, as said before.

It would be a big error to place the bees in any repository, or to cover them with any shelter which prevents their flight, unless the temperature of such repository is kept evenly at the point which would enable them to remain inactive with the smallest possible consumption of stores. That is why the placing of bees in garrets, or enclosed sheds, where they are certainly warmer than out of doors, but where the temperature nevertheless falls much below the freezing point, or rises, in warm days,

so as to make them restless, has always been an entire failure.

Our method, which is perhaps not the best of all, but which has always given us very good results, is to place around each hive, on all sides but the front, a packing of forest leaves, held in place with a sort of lattice work made of plasterers' laths and strong twine. The laths are cut in two, so as to make about the height of the hive. The leaves used are found right in the apiary, and simply raked together; and when they are thus closely folded around the hive they give it a very cosy and comfortable appearance, especially when the cold winds blow. The front being left uncovered, the bees can take advantage of any sunshine to take flight, and no particular attention need be given them, except to see that the consecutive thawing and freezing of the snow does not close the entrance and prevent the circulation of air.

A shelter of loose snow, as I said before, is a very good shelter until it begins to thaw, when it is objectionable, especially if the thawing snow fastens to the hive, and refrigerates it, so to speak, by the natural absorption of heat to change to water.

In the hive, over the frames, we always use a straw mat made of course straw, or slough-grass. This, with a cap full of leaves, allows the moisture arising from the bees to readily escape without any deperdition of heat; and places them in the very best possible condition at least possible cost.

The use of leaves as shelter was suggested to us by the oft-repeated remark that leaves are very good to keep the ground from freezing. Any one who has had to dig the ground in the timber in cold weather has noticed how little the ground freezes, under a plentiful coat of leaves.

No. 1.—The Care of Bees for Wintering.

For a number of years past we have had very good winters for bees, and the losses have been small. This success is likely to cause us to be less particular about putting the bees in proper condition to go safely through the period of cold weather that may usually be expected in this latitude.

What are the necessary requirements to safely winter a colony of bees? In my mind I divide these requirements under five heads:

1st. A sufficient number of bees.

2nd. A sufficient quantity of food.

3rd. Food of the proper quality.

4th. An occasional flight during cold weather.

5th. A certain amount of shelter.

The first and main requirement is the number of bees. It matters but little how well the other four requirements may be fulfilled, a handful of bees, in this latitude, cannot be safely wintered, and in hard winters it requires a very strong colony to safely go through the almost polar extremes of cold, which are so often experienced, and which make us compare our winters with those of Siberia.

The number of bees which forms the colony at the beginning of winter often depends upon circumstances entirely independent of the will or the management of the apiarist, and we can therefore give but little advice on this point. Probably the only time when the bee-keeper can be of any help to his bees, to secure a sufficient amount of strength, is after a short crop, when the bees have gathered so small an amount of honey that they had been unable, though probably willing, to rear a sufficient supply of brood. By judicious feeding in time, that is, before the opening of cold weather, quite an amount of brood rearing may be induced, and the strength of the colony materially increased by this means.

To obtain this end, the feeding must be slow and regular, for bees will breed mostly when they find food; while if the colony is strong, and the supply of honey only is needed, the feeding should be as speedy as possible. It is very easy to

understand why breeding depends somewhat upon feeding. The queen needs to be copiously fed, in order to lay a liberal number of eggs daily. When the bees are at rest, and no honey is harvested, she is not induced to eat much, for none of the bees are loaded. But when honey is coming in, either by artificial feeding or by natural sources, the queen incessantly meets bees with a full honey-sac, that offer food to her, and the egg laying propensity is increased in her thereby. To be sure, there are natural circumstances—weather and season conditions—which will tend to prevent a ready production of eggs at this season; while the reverse of these conditions in the spring would have the opposite effect; but aside from the circumstances that are beyond the control of man, it is not to be doubted that much may be achieved towards increasing the number of bees in a hive, previous to winter.

Yet, there are seasons in which the concourse of circumstances have created peculiar conditions, and the hive is depleted of its bees, though the harvest has been sufficiently plentiful to fill the brood combs with even more honey than is needed for winter. As an instance of this I will cite one fall, in which our bees had to travel two miles in order to harvest a good supply of honey, and during which a number of quick and unexpected day storms destroyed many of the little harvesters on the way to and from the field. Their numbers diminished so that there was not enough bees left in the hive to help keep the brood warm, and the winter loss was tremendous.

I remember, also, buying a box hive full of honey, years ago, from an old-time beekeeper. It appeared that a swarm was put in this hive during a good flow of clover, and the crop was so plentiful that they filled the box from top to bottom. As there was no room worth mentioning for brood, and the queen was perhaps old, the colony had dwindled so that the remaining bees died at the opening of the winter, and it had some 60 or 70 pounds of honey, very white and nice, with not to exceed six square inches of empty comb at the bottom. Such occurrences are not altogether unavoidable, especially to the apiarist who keeps a close watch over his bees; but they are possible, and when the conditions are discovered too late no help can be given.

Then there are other circumstances, some of which are not yet fully understood by us, to cause colonies to dwindle and become weak. Not more than two days ago (Oct 26) I was helping the boys to remove the supers preparatory to packing the hives for winter, when we came to a colony of bees—fine Italians—in which perhaps two handfuls of bees were scattered about away from the cluster, in the super, as well as in the body of the hive. This circumstance is unintelligible to me. The morning was cold and frosty, and, in normal conditions, these bees should have been united to the cluster at the bottom of the hive; but as they were scattered about they had become chilled and were likely to perish.

We can therefore say that the quantity of bees necessary to a good wintering is not always dependent upon the will or care of the apiarist, but can only be improved by him to a certain extent.

HONEY COMB.

PROF. HASBROUCK, IN *Beekeepers' Magazine.*

So much is said now-a-days by such influential men as King, Dadant, Jones, and many others, to "boom" extracted honey, that it seems necessary that something should be said to recall the claims of comb honey, that its virtues may not be forgotten and its production neglected. It may be that, for the present, more money can be made by running bees for extracted honey—five dollars to one; but I think I can see reasons why, with increased production, we may expect extracted honey to depreciate in price much faster than comb honey. Extracted

honey must always compete with similar sweets, such as sugar, molasess, syrups and glucose, and its principal recommendation will be its novelty or cheapness; while it is weighted in the race for popularity by its inconvenient tendency to candy, and if it does not candy, it is immediately exposed to the suspicion of being adulterated. On the other hand comb honey stands without a rival —a thing *sui generis*—captivating to the eye—the symbol of sweetness—a royal luxury. But so industriously have they who ought to know better, talked about the enormity of eating "indigestible wax," that the proper use of comb honey is almost a "lost art." People struggle to reject every flake of wax, or else eat their hot biscuit and honey as forbidden indulgence, dared with full expectation of gripes and nightmare as a penalty. The fact is, that honey comb is one of the most wholesome foods ever eaten. It will make hot biscuit and fresh bread easily digestible. These alone are rightly considered much harder of digestion than stale bread from the fact that they pack, in chewing, into masses impermeable to the solvent juices of the digestive organs. But when they are eaten with honey comb, the delicate flakes of wax prevent the packing, while the honey pervading the whole mass, is readily dissolved out, leaving free access for the gastric juice to all parts of the food. The scales of wax, though indigestible, are soft and smooth, and will not irritate the most delicate membrane.

But besides being a delicious and wholesome article of food, I regard comb honey as a specific cure for many difficulties of digestion and irregularity of the bowels. In our day, drugs are at a discount for the treatment of chronic diseases, and people are generally seeking health from a proper selection of foods instead of medicines. For a long time Graham bread and bran crackers have been prescribed by the medical faculty for dyspeptic affections and obstinate constipation; but the doctors are about finding out that these things will ruin the digestion of anything but a horse, as the rough, silicious scales of bran irritate and lacerate the delicate membranes of the digestive organs, to their speedy ruin. I can assure all persons whose digestion needs a little assistance, that they will find in comb honey, eaten wax and all, just the thing to help them—and a very agreeable medicine to take, it is, too.

The flakes of wax furnish a gentle stimulus to the digestive membranes, without in any way injuring them. To beekeepers I would say, produce extracted honey by all means, if you can make more by it; but for your own bread and butter, and hot biscuit and hot cakes, use comb honey, without being anxious to save all the wax to make up into foundation, and see if it isn't the best way to eat honey.

PAT AND THE BEES.

In Charles Lever's "O'Donoghue" there occurs a remarkably rich passage illustrating the relations subsisting between an improving landlord and an untutored tenant. The agent presents the tenants to the worthy innovator, who inquires into the conditions of the grumbling and dissatisfied recipients of his favours. At length, on a tenant presenting himself whom the agent fails to recognise, the baronet turns to the figure before him, which with face and head swollen out of all proportions, awaits his address in sullen silence.

"Who are you, my good man? What has happened to you?"

"Faix, and it's well you may ask! My own mother wouldn't know me this blessed morni'. 'Tis all your own doin' entirely."

"My doing?" replied the astonished baronet. "What can I have to do with the state you are in, my good man?"

"Yes, it is your doin'," answered the proprietor of the swollen head. "'Tis all your doin', and may ye well be proud of it. 'Twas them blessed bees you gev me. We brought the divils into the

house last night, and where did we put them but in the pig's corner. Well, afther Katty an' the childer an' myself was a while in bed, the pig goes rootin' about the house, and he wasn't aisy till he hooked his nose in the hive and spilt the bees out about the flure; and then, when I got out of bid to let out the pig that was a-roarin' through the house, the bees sittled down on me, an' began stingin' me, an' I jumped into bid again with the whole of them afther me, to Katty an' the childer; and thin, what wid the bees a-buzzin' an' a-stingin' us under the clothes, out we all jumped agin, and the divil such a night was ever spint in Ireland as we spint last night. What wid Katty an' the childer! an' the childer a-roarin' an' a-ballin', an' the pig tarin' up an' down like mad, an' Katty wid the besom, an' myself wid the fryin'-pan flattenin' the bees again the wall till mornin', an' thin the sight we wor in the mornin'—begor, it's ashamed of yourself ye ought to be."—*Contemporary.*

CAPPINGS.

From American and other Bee Journals.

As bees grow old they are said to carry less pollen on account of the hairs on their legs being rubbed off.

Two pound sections are made by putting one sheet of foundation between two sections and pressing them together.

The A. I. Root Co., have the past season improved their factory and machinery to the extent of 9000 dollars.

Doolittle claims basswood as the greatest honey producer in the world. He says he has secured in one hive a yield of 22lbs. of honey a day, for three days in succession.

My own experience has showed very clearly that poor queens usually result from simply removing a queen and allowing the bees to make their own selection of larvae for queen rearing.—W. Z. Hutchinson.

If one wishes to save *all* the wax, it will be necessary to have some kind of a press to take the wax out of the refuse, as I do not believe that any steam extractor, or solar extractor, or hot water process, will take the wax *all* out of the refuse without pressure —J. K. DARLING IN *American Bee Journal.*

There is nothing, I think, that so broadens the mind of a beekeeper as to go out among his fellows. I have learned more by coming in contact with beekeepers, and seeing and comparing their ways and methods for a few hours, than I have learned in months of time among our own bees.—*Gleanings.*

Shirking the Tariff on Honey.—A tariff on imported honey helps to protect German beekeepers. Living bees are admitted free. Thousands of colonies are ostensibly sent in from Holland free. A very few bees in a hive heavy with honey will serve to secure free admission and thus much honey crosses the border without being taxed. Herr Reepen proposes that an effort be made to have a ruling that living bees be admitted free only when hives, bees and all do not exceed in weight 33 pounds.—*A. B. J.*

Bees should never be fed liquid during the winter. If they are short of stores, make a cake of granulated sugar about one and a half inches thick, and put this under the quilt, and resting on the top bar frames. If you are putting flannel next to the bees, you are making a great mistake, as the rough surface catches the bees and angers them. Do not try to change combs from one hive to another, especially if there are bees adhering to them. The flannel is excellent above the bees, but a piece of cloth without fuzz, or a honey board should be placed next the bees.—*Canadian Bee Journal.*

The condition the most favourable for a large yield of nectar is when the weather is very warm and the air filled with electricity. At times when showers pass all around, with a great display of lightning, yet no rain falls in our immediate vicinity, the honey will almost drop from the blossoms; and even when light showers are present nearly every day, I have known bees to store honey

very fast. At these times of greatest yield I have seen nectar in the blossoms after they have fallen to the ground, so that it sparkled in the morning sunshine. —Doolittle in *American Bee Journal.*

H. G. Quirin, in *Gleanings*:—About liquefying honey by placing it in the oven of a common cook-stove. I have done this for the past three years instead of placing it in a basin of water on top of the stove, and I can assure you it is far superior to the latter. Some might think there is more risk of breaking the glass when honey is in glass packages; but that is not the case, as I have broken some by placing them in water on top of the stove, but have not as yet broken a single one by placing them in the oven. It is not necessary to place them (tumblers I mean) in water. My method is to take a shipping case and place the tumblers in, or other glass packages, whatever the honey may be in. Place them in the oven, close the door, and in ten to thirty minutes your honey is liquid again, and that, too, without even so much as spoiling the labels. The hot air does not seem to act on the glass as does hot water, and still is more rapid. I have liquefied hundreds of tumblers of honey, and know whereof I speak.

If you will turn a hen with a dozen newly hatched chickens, while they are downy, eleven white and one black one in the lot, if the black one does not get more stings than the others, I will pay for the use of the hen to hatch the chickens. My chickens run in my bee-yard. The black ones are screaming from stings continually, but a white one is hardly ever stung. The young man who helped me this summer with my bees wore light coloured pants when he commenced work, and got no stings through his pants; but he wore dark pants one day, and the bees punished his legs so he was glad to put on light trousers again. If you want to prove to your own satisfaction that bees don't like black, wear a black or dark brown cardigan jacket, with the sleeves turned down around your wrists, or tie a strip of dark woolen cloth around your wrists one day while working among your bees, and I think you will get more stings on your wrists at the edge of the dark cloth than you ever did in one day before.—E. D. Howell, in *Gleanings.*

The reason for the rearing of drones, as stated by Dr. Dzierzon, and accepted by every one in Germany until the birth of the "new school," is that while colonies can not forsee the opportunity for swarming or queen rearing, they do forsee its possibility—thus crediting bees with foresight and calculation. In like manner, drones are said to be destroyed because the colony foresees winter, when the drones if kept would eat up all the colony has stored. The position of the "new school," that drones are the result of a surplus of albuminous matter in the brood food. Worker brood needs on the average 40.62 per cent. of albuminous matter, drone brood 43.79 per cent., and queen brood 45.14 per cent. The percentage of this in the brood food is influenced by the flow and the age of the bees. The lack of this surplus causes the destruction of drones.—*Beekeepers' Review.*

I was greatly surprised in my visits among the beekeepers of your State to find that so many progressive, practical men had dispensed with separators. I had supposed that that practice was about obsolete. Many of the lots of honey that I saw compared favourably with that produced with separators. That the most perfect honey possible can be produced without separators I have had the most positive proof. Some of the claims in favour of laying aside separators are, I must admit, worthy of consideration. There is a freer communication; just as the fence separator gives a freer communication, so no separators at all gives still better communication. That there is an economy in fixtures calls for no argument. Whether honey built without separators is more attractive than that built with them is a point for the doctors to decide; but sec-

tions filled with no separators between them certainly have a more plump appearance. Seven-to-the-foot seems to be the best width to use when no separators are used. Slip-shod or careless bee-keepers better cling to the use of separators, but thoughtful and careful apiarists may dispense with them.—H R. BOARDMAN, IN *Beekeepers Review*.

I recently made a visit to Mr. D. L. Shangle, of Midland Co., Mich., and during my very interesting visit with him I learned one thing I thought might be interesting to some of your readers. Mr. Shangle is a great bee-hunter, having found as many as 52 swarms in one season. The night I stayed with him he came home a little after dark, having cut two bee-trees that day. November 2nd, he came into the house with a bagful of something that made a great buzzing. On inquiry I found it was a two-bushel bag filled with bees, with a screen bottom to give them air, and also to feed them if he kept them confined any length of time. When he cuts a bee-tree he runs bees into this bag, then they are in a convenient shape to carry; takes them home, and hives them on combs full of honey, which he has saved for the purpose. He has about as good luck wintering this class of swarms as he does those that fill their own hives. He says he can move bees much safer in hot weather by driving most of the bees into a bag, thus relieving the crowded condition of the hive, and returning them to the hive they were taken from, after the journey is made. N. E. Doane in *Gleanings*.

Right here I will tell how to shake bees off combs, as many seem to be unable to get the bees off, short of brushing. The bee braces itself only against falling off the comb downward, for the thought that it is possible to fall upward off the comb never seems to enter its head, so it holds tenaciously only from the upper side. Taking advantage of this fact, I take the projections of the top bar to the frame and place them on the two middle fingers of each hand, letting the frame hang on them, as it were. Now raise the frame up quickly by raising the hands six inches or more, and then with a quick motion strike down. This quick downward motion causes the ends of the frames to jump from the ends of the fingers and strike the ball of the hand, thus giving the comb a sudden jar with a downward motion at the same time, while the impetus of the bees is still upward. This takes them all unawares and thus dislodges them from the comb, while any quantity of downward shakes would loosen but few of them. In this way I can clear a comb entirely of bees by giving it three or four such jars.—DOOLITTLE, IN *A.B.J.*

DR. MILLER'S FUEL.—I take a two gallon crock (of course, larger or smaller would do), and throw into it a pound of saltpetre, then fill half full of water. Into this I put pieces of rotten wood or cotton rags. The wood must be allowed to soak for a day or so, but the rags may be taken out at once or they may be left a month. If you use rotten wood for fuel, and wish to tell the saltpetre wood easily from the other, it's a good plan to throw a little red aniline dye into the crock. An old milk-pan with holes in the bottom, or an old colander, stands in the crock, and some of the rags are put into that to drain and dry. Next time I come for saltpetre rags I take them out of the colander, put some out of the crock into the colander, and put some new ones in the crock. If none are dry enough I dry them in the sun or stove-oven. When I want to fire my smoker I take a rag, perhaps a piece of an old shirt or dress, the size of my hand (I don't mean the dress but the rag is the size of my hand), touch a lighted match to it, roll it into a little ball, and drop it into the smoker. Then, without waiting to see whether it will burn or not, I fill up the smoker with chips, planer-shavings, or what-not, with no fear but there will be a good fire with a very little puffing.—*Gleanings*.

CANNING FRUIT WITH HONEY.—We put the fruit into a tight-covered kettle in the oven of the stove, and cook until tender, then add the honey and bring to a boil on top of the stove, and put in

cans and seal while boiling hot. Juicy fruit, like peaches, pears, and berries, need no water added, as the honey makes enough syrup. Dry fruits, like quinces and apples, need a little water to cook them tender. We use the best white clover honey for peaches, and fruit that is not very sour, ¼ pound of honey to a pound of fruit is right for us; but the best plan is to sweeten to taste. I think the fruit keeps better than that canned in sugar. I had for my breakfast this morning, peaches canned in September, 1897. They were as good as the day they were put in the jars, and we think them much better than fruit put up with sugar. We have put up in honey, apples, blackberries, peaches and quinces. All keep well and are very fine. We drain the liquid out of the honey that granulates coarse, and use the dry sugared honey for making candy, and in various ways for cooking, etc. Don't cook the honey in with the fruit. The less you boil the honey the more of the honey flavour the fruit will have.—E. D. HOWELL, IN *A. B. Journal.*

Thaddeus Smith, says in *Gleanings* :—The puffs given crimson clover in the last few years by newspapers and newspaper correspondents of some of the Eastern States who were raising crimson clover seed for sale have induced the farmers of the country to spend thousands of dollars for seed that has never brought them one dollar in return. I have a friend in Kentucky—a large farmer in the blue-grass region of that State—who sowed 50 acres at one time in his cornfields, and it was a complete failure. A friend on a neighbouring island—one of the most progressive and successful fruit-growers in Ohio—was led to expect great things to result from sowing crimson clover in his orchards and vineyards. He bought seed, and sowed for two or three years; but, failing every time, he gave it up in disgust. Hundreds of others have had the same experience. I have been more persevering than many others, but it has been nothing but an outlay. A. I. Root succeeds well with crimson clover on his rich highly manured, thoroughly *under-drained* land, when it is sufficiently covered with snow the coldest weather to keep it from being killed; and others who have been successful tell us about enriching the land with fertilisers before sowing; and I think that these facts give the key to the principal cause of so many failures. Crimson clover will not succeed on thin or moderately poor land. We usually sow clover to *improve* land to restore its fertility. I have never worked land that ever got too poor to raise a fair crop of red clover, and that could not be recuperated and brought back to fertility by sowing red clover and a proper rotation of crops, without manuring or using other fertilizers. I now have land that produces better crops than it did forty years ago, that has never been manured. So far as I can see or learn, crimson clover has no advantage over red or alsike clover as a general farm crop. It is more difficult to get a stand of it. It is more liable to be killed in winter. It does not make a good hay. It is admitted that the hay has proven to be injurious to horses—sometimes kills them. It is no better as a nitrogen-collector or fertilizer. Its main value is as a kind of catch crop to be sown after the removal of some early crop, on the rich land of the intensive cultivator or gardener, and ploughed under the next spring to give more humus and nitrogen to the the soil. But may not red clover be ploughed under with as good effect? Who has tried sowing red clover in July or August as a catch crop? I sowed some last June and it is doing well. I know that it does not mature or bloom as early as the crimson; but it may make as much humus and nitrogen. Last spring I had some crimson growing alongside of a piece of red clover, and the crimson was in bloom some ten days before the red, but at the same time the red was from three to four inches the taller, and it would have made a much larger mass of tops and roots to plough under at the time the crimson came into bloom. The seed-sellers have been the only ones who have made the growing of crimson clover very profitable.

A. HORDERN & SONS SPECIAL PRIZE.

The following is the special prize offered by Messrs A. Hordern and Sons, at the forthcoming Royal Agricultural Show in Sydney :—

EXTRACTED HONEY.—6 1lb. Screw Top Jars; 6 2lb. Screw Top Jars.

GRANULATED HONEY.—6 1lb. Screw Top Jars ; 6 2lb. Screw Top Jars.

FRAMES OF HONEY.—2 Full-depth Langstroth ; 2 Half-depth Langstroth.

FRAMES OF EMPTY COMB.—2 Full-depth Langstroth ; 2 Half-depth Langstroth.

SECTIONS.—12 1lb. Sections of Honey.

BEESWAX.—25lbs. in Plain and Ornamental forms.

ALL TO BE ARRANGED IN TROPHY FORM.

INVERELL SHOW.

The following are the Apicultural prizes to be competed for at the above show on 15th, 16th, & 17th March :—

233 Best Collection of Apicultural Products, in trophy form, to include extracted honey, comb honey, and beeswax, 30s ; 2nd, 10s.

234 Best Leather-coloured Italian Queen and her Progeny, bred by exhibitor, in a one-frame observatory hive, 10s ; 2nd, 5s.

235 Best Golden Italian Queen and Progeny, bred by exhibitor, in a one-frame observatory hive, 7s 6d ; 2nd, 3s.

236 Best 12lbs of Extracted Liquid Honey, in 1lb or 2lb glass jars, 7s 6d ; 2nd, 3s.

237 Best 12lbs of Granulated Honey, in 1lb or 2lb glass jars, 5s ; 2nd, 2s 6d.

238 Best 12 1lb Sections, raised by exhibitor, 10s ; 2nd, 5s

239 Best two large frames of Comb Honey, 5s ; 2nd, 2s 6d.

240 Best two half-size frames of Comb Honey, 5s ; 2nd 2s 6d.

241 Best 12lbs Beeswax, soft, clear, yellow, 5s ; 2nd, 2s 6d.

242 Best and Most Attractive Display of Extracted Honey, not less than 50lbs, manner of putting on market to be considered, labels allowed, 10s ; 2nd, 5s.

243 Fruit Preserved in Honey, not less than three kinds, 5s ; 2nd, 2s 6d.

244 Jam made with Honey, not less than three kinds, 5s ; 2nd, 2s 6d.

ROYAL AGRICULTURAL SOCIETY'S SHOW.

The following are the Apicultural prizes to be competed for at the above show on 29th March to 4th April :—

HONEY.

MANUFACTURED PRODUCTS.

587 Beverages, best and largest variety, First prize, £1

588 Fruits and Preserves, best and largest collection, preserved in honey. First prize, £2 ; second prize, £1

589 Foundation Comb, three sheets, various grades. First prize, 10s.

590 Wired Frame of comb foundation. First prize, 5s.

591 Australian made Hive (Langstroth), fitted with frames and ready for use. First prize, £1 ; second prize, 10s.

592 Any other make, fitted with frames and ready for use. First prize, £1 ; second prize 10s.

BEES.

593 Best leather coloured Italian Queen and her progeny, to include drones. First prize £1 ; second prize, 10s.

594 Best Yellow Italian Queen and her progeny, to include drones. First prize, £1 ; second prize, 10s.

Champion Prize of £7, for the best collection of the products of an Apiary ; second prize, £3.

COMB HONEY.

595 1 dozen 1lb. sections. First prize, £1 ; second prize, 10s.

596 Large frame of honey, not less than 100 sq. in. of surface on each side. First prize, £1 ; second prize, 10s.

597 Small frame of honey, not less than 50 sq. in. of surface on each side, First prize, £1 ; second prize, 10s.

598 Most attractive display of Comb Honey. First prize £3 ; second prize, £1 10s.

EXTRACTED HONEY.

599 1 doz. 1lb. jars or bottles of liquid honey. First prize, £1 ; second prize, 10s.

600 1 doz. 1lb. jars or bottles of granulated honey. First prize, £1 ; second prize, 10s.

601 Most attractive display of extracted honey, liquid and granulated. First prize, £4 ; second prize, £2.

BEESWAX.

602 Yellow, not less than 10lb. in each exhibit. First prize, £1 ; second prize, 10s.

603 White, not less than 10lb in each exhibit. First prize, £1 ; second prize, 10s.

604 Full size frame of empty comb, naturally built. First prize, 10s.

605 Full size frame of empty comb, built on comb foundation. First prize, 10s.

Quite a number of excellent press notices on our January issue.

PAMPHLET RECEIVED.

We acknowledge receipt from Mr. A. Gale, with his compliments, of a pamphlet, "The Colour of Flowers, and its Influence on Bee Life," read before the Australasian Association for the advancement of Science, Jan. 11th 1898. We give our readers some extracts from it:—

Pollen is the fertilising and vitalising agent in reproducing and perpetuating all classes of vegetables. It is produced in abundance by all flowering plants, both by those of conspicuous and also those of inconspicuous flowers or blossoms. As a rule inconspicuous flowers are anemophilous, and those of more gaudy tints are sought after by insects. It may not be universally understood that there are male and female elements in the vegetable organism just as in the animal organism. We know that if the sexes in the latter are always excluded, the one from the other, reproduction is an utter impossibility.

The higher order of animals are unisexual; occasionally there are malformations termed hermaphrodites; but in the plant world the higher orders are unisexual. bisexual, or hermaphrodites—unisexual when the male and the female blooms or organs are on separate plants; bisexual when the male and female organs are in separate flowers but on the same plant, hermaphrodite when the procreative organs are both in the same bloom (Laurels, 1st; pumpkins, corn, &c., 2nd; apples, pears, &c., 3rd,) Yet, nevertheless, no true flower is hermaphrodite—*i.e.*, not hermaphrodite as the term is applied to the animal kingdom. The staminal and pistiline organs are not abnormal malformations, but both organs are perfect and independent of each other, and as a rule in hermaphrodite plants the anthers become distributive before the stigma becomes receptive, or *vice versa*; or, to make it clearer, the receptive and distributive organs do not mature at one and the same time in the same flower.

From this it will be seen how utterly impossible it is, in the great majority of cases, for the anther, when distributive, to come into juxtaposition with the receptive stigma to effect the necessary discharge of pollen to ensure fructification. I am speaking now only of entomophalous plants.

Oftimes in unisexuals that are entomophilous the staminate plant when in bloom is at a considerable distance from a pistiline; and in bisexual both genders of flowers mature at the same time but on different parts of the same plants, while in hermaphrodites the sexes may be in close proximity; nevertheless the male and female organs do not mature at one and the same time, then how can these inert beings become impregnated but by an agent other than itself—a foreign agent? In nearly every case the pollen of entomophalous plants is not dry and powdery as in the case with anemophilous blooms, but heavy and highly adhesive. It is this property of the pollen gathered by bees that enables them to stow it away so neatly in their pollen baskets. Its adhesive nature prevents its being blown about by winds, and causes an outside agent necessary to transmit it from the male to the female organs.

Now comes the question, why are bees attracted to blossoms? I mention bees because they are the only insects that gather and store both pollen and honey. Other insects feed on one or the other or both, but with these it is consumed where gathered—that is, it is consumed on the premises.

I am not ignorant of the fact that the perceptive organs in insects are extremely acute, especially in social bees, and that they can both recognise colour and form. All beekeepers know that when young bees take their first flights how cautiously they survey the landmarks surrounding their habitations, and where large numbers of colonies are kept, and where every hive is the same pattern and colour, how necessary it is, when the virgin queens are taking their nup-

tial flights, to place distinguishing marks here and there to ensure the safe return of the young queen to her own home. But that bees are led to flowers by the colour they possess, and that certain bright colours—red, blue, purple, &c.,—are more attractive to them than paler tints, such as white, yellow, &c., my experience most certainly contradicts.

Early last spring the white Arum lily (*Arum africanus*) was in bloom, and its white pollen was eagerly sought for by bees. At the same time the broad beans were in full flower. These, too, were an attractive foraging ground for the same insects. A little later the peach trees burst into flower, with the result that the first named was entirely forsaken, and the latter receiving only an occasional visit. Did the bees go to the peach tree on account of the attractive colours? Not a bit of it. While the peaches were in flower so were the willows (*Salix babylonica*) just throwing out their catkins. When these two trees, peaches and willows, were in bloom my bees were bringing in pollen of two colours, one creamy-white and the other somewhat of an orange tint. At the same time in the district where I live there were roses, marigolds, arum lilies, and other attractive flowers in full bloom, but few bees were visiting them. The pollen was coming in from the willows and peach trees; there was also honey coming in from the latter. The flowers (catkins) on the willows are so inconspicuous that a large number of people are ignorant of the fact that they are phanerogamic; yet they were as attractive to the bees as the gaudy peach trees. During the same spring, and at about the same time, I visited the Botanical Gardens, and the most attractive beds of flowers then in bloom were the English daisies, pansies, anemones, and the turban ranunculus. Nothing in the Gardens were more showy than the two latter, yet no bee visited them. Near these was a shrub (*Buxus sempervirens*) in which there was a constant hum from the bees. What was the cause? Hidden among the dark green foliage there were hundreds of small greenish flowers, supplying abundance of food. If colour had been the attractive agent, bees would never had discovered their food in the shrub, and they would have sought the showy beds of anemones, &c., in vain; they were double, and therefore there was no pollen food. But who will dare to say the attractive colour was absent? A short time afterwards I saw the *boganvillias* aglow with their showy bracts; they could be seen hundreds of yards away. At the same time the pittosporums were in flower. These latter were so inconspicuous that before they could be detected you need stand directly under them. I visited both—the boganvillais and the pittosporum; in the former there was not a bee to be seen, notwithstanding their fiery glow, whilst in the latter there was a sound as if a swarm of bees had taken posseseion of it.

Many years ago, when in Cooma, I had a bed of turnips in flower that from daylight to dark was besieged by bees. Suddenly the bees forsook them. I found the cause to be, that a small paddock of lucerne near by had been permitted to flower, and the bees had gone thither. Were they attracted by the purple flowers? Not a bit of it. Lucerne, like other trefoils, produce an abundance of bee food far more than any of the cruciforms, and the bees had gone where they could get the greatest quantity in the shortest space of time. In about twenty-four hours afterwards the lucerne was cut, and the bees returned to the turnips.

Early one spring I saw bees eagerly working the flower heads of couch-grass. We all know that the flower of the couch has not an attractive colour. The endemic or native flowers intermixed here and there with them are far more showy. Looking into my bees I found young larvæ were plentiful; pollen for bee-bread was needed. The endemic flowers were producing little or none, but on the couch-grass there was a fairly good supply, and this supply was the cause of

their neglecting the brighter coloured blooms for the greenish yellow flowers of the couch grass.

Watch a large bed of poppies of mixed colours. No one colour is neglected by the bees. They are as eager to forage in the white as in the red. Poppies are great pollen producers.

Yesterday I was watching the bees working the pumpkin flowers, and none of them were at a loss to find the pollen or the nectary. There was no hesitancy. The only finger post for bees in flowers is the food they contain.

Darwin himself says he is not quite sure that in every case the colour and markings of flowers are for the sole purpose of attracting insects.

What is the experience of beekeepers this side of the equator as it regards the colour of flowers that are chiefly visited by the bees? There is no denying that some of our endemic or native flowers are as brightly coloured as the exotics or introduced ones. Before the introduction of our fruit trees and highly coloured garden flowers, the chief honey gathering social insect was the little native bee (*Trigona carbonaria*,) and, therefore, it was the chief fertiliser in Australia.

Darwin tells us that it took ages on the other side of the world for the flowers to develop into what they now are in both colour and form, and the bees centuries of training to adapt themselves to the flowers as they developed.

The chief honey yielding plants of this continent are the eucalyptus, pittosporum, and ti-tree families, and all these bear whitish flowers. Our introduced fruit trees and ornamental flowering plants bear brightly coloured blooms. In spring time our introduced fruit trees are conspicuous by the multiplicity of their flowers, and our littte native bee as readily finds the nectar in them as our introduced bee, and they cannot have had the ages of experience to guide them.

And does it not seem very strange that our hive bee, upon its introduction here and before it had been sufficiently colonised, should have forsaken the bright coloured flowers of the Old Land that were introduced here at the same time they were? Our exotics and our hive bee, as far as Australia is concerned, are coeval. Untold generations of bees had been trained to work blossoms in the land of our fathers, and their experience had most, if not all, we are told, to do with the development of species and the production of showy flowers we now see around us. But when the hive bee crossed the Atlantic and the Pacific, and came here and found they were among their old friends of the gardens, they forsook them and bestowed their attention upon the simple whitish honey-bearing flowers of the Colony—a colour that the writers on the subject say they studiously avoid for the more gorgeously coloured ones their progenitors had been at such pains to produce by erecting showy flags and sign boards for the benefit of the bees of to day, for the purpose of saving them both time and labour.

The hive bee on its arrival here, after having been educated to the high standard it is said to have attained in the old world, works upon, not our introduced flowers of "red, blue, and purple" so much as upon our simple white and yellow ones—so unlike what they ought to have done, according to the education they have received at our antipodes. Is it not queer that our bees should have gone back in their tastes for colours when they crossed over the equatorial line and came this side of the world?

VICTORIA.

T. BOLTON.

A clipping enclosed may be of interest to others. The apiary at Glen Isla referred to is 35 miles by bush tracks near the west side of the Victoria ranges. It is carried on as an out apiary, and involves a good deal of horse work. The attraction to that spot last April when I took my bees, was a splendid bloom of what Wimmera men call white gum or

white box, but which I find from our Government botanist is *Eucalpytus Leucoxylon* or iron bark. Well it bloomed from April till December, and yields a water white honey, but my bees were so weak and so old owing to their long starvation about Dunkeld, that though they could get lots of honey immediately on being released the very abundance of it seemed to kill them off with the labour, and colony after colony died with newly sealed stores, through sheer old age of individual; of 150 taken up only about 89 survivors showed up in September. We have had but one natural swarm, and have increased by nucleus to over 250 at present, about 200 of which are full strong colonies, the others less so but booming along. My losses last season were about 200 colonies, but my hives well worth being all restocked again.

Honey has been selling from 5½d in spring to present quotation of 3½d in market. I am, however, declining offers at the latter price, believing the present glut is of a short lived nature, as hardly a wild bee hive or box hive survives in the great Wimmera honey region; compared to previous good years there will be a small out-put of cheaper grades and a consignment rise next winter may fairly be looked for in value.

In case any should imagine the five helpers referred to in clipping are employed at the apiary alone, I may say that two are generally on the roads hauling honey to my head quarters in Dunkeld, or assisting there in packing orders and general work, and one of the five is pretty constantly occupied with office work. At times there is only one boy, at other times four and myself at Glen Isla. We have bees also located in small test lots in other spots. Besides ironbark the Glenelg river region is well supplied with red gum, yellow box, bastard box, stringy bark, manua gum, messmate, and peppermint. Grey box I cannot find and would be glad if some beekeeper who has it would favour me with its buds, leaves, and fruit. What is called grey-box on the Glenelg is bastard-box (*Egoniocalyx*), has a peculiar square-shaped long bud about ⅜in. long when just about to open, and blooms in March, I judge to May. Perhaps friend Ballinger would say if this describes the Wimmera grey box. *Egoniocalyx* is called in N. S. Wales "blue-gum". Is it a good yielder? and what description of honey? * * * * CLIPPING.—

BEE-FARMING AT GLENISLA.—It will be remembered (writes our Mooralla correspondent) that a syndicate was formed some time ago in Hamilton for the purpose of establishing apiaries, but after a short trial the industry failed.

The plant was sold in 1889, Mr. T. Bolton, apiarist, being the purchaser, who has carried on the bee-farming ever since, with a fair profit, until last year, which was a bad season for the bees, and Mr. Bolton had to seek fresh fields to save his hives from dying out. After travelling a while he found a suitable place, about six miles south of Glenisla, where about 80 hives in rather low condition were brought from the apiaries near Dunkeld, and placed on the new site and are thriving well. Principally through careful management, they have increased to 240 hives, which make nearly two tons of honey per week at the present time. The comb, which is attached to small frames, is placed in a machine, and the honey extracted; it is then put in 56lb tins and conveyed to Dunkeld, where the apiarist has a good plant for straining it and preparing it for market. It is then sent by rail to Portland, Port Fairy, Warrnambool, Colac, and other parts of the colony, the current value being about 4d per lb wholesale. Five boys perform all the labour, besides the manager connected with this profitable industry. As a guide to the owner an average hive is placed on a balance, and it is easily seen how many pounds per day are made. To those who have never seen bee-farming on a large scale, it would be worth while to visit the apiary near Glenisla.—*Hamilton Spectator.*

EXPORT OF HONEY.

MR. GALE'S VIEWS OF THE OUTLOOK.

A GROWING TRADE.

Some statements appeared in our issue of to-day which indicated that the industry of bee-keeping was absolutely overdone in this colony, and also declared that honey was practically unsaleable. Mr. Albert Gale takes up the cudgels on behalf of the maligned industry. Mr. Gale is the president of the National Beekeepers' Association, is the Government Bee Expert, and the author of a number of bee publications, and therefore can speak as one having the authority which expert knowledge confers. With regard to the alleged lack of a market for honey. Mr. Gale says that a meeting was held last Friday with reference to sending honey to England. It was pointed out at this meeting that most of the beekeepers were not in a position to incur the expenses attaching to sending their products to the home markets, in view of the great length of time that would elapse before they got any return. It was announced however, that the London merchants had agreed to advance £12 per ton on honey, and £100 a ton on wax before these products left the colony. Mr. Gale announced to the meeting that he was also treating with the Board of Exports in the matter.

Dealing with the statement that honey was being sold locally at 1½d a pound, Mr. Gale pointed out that from our box timber, white, red, and yellow, the finest honey in the world was produced, and thousands of tons were sold locally at from 3d to 4d a pound. The honey that was sold at 1½d was an inferior class of bush honey obtained by felling trees, and contained crushed bees, bees' grub, rotten timber, and other foreign substances. This inferior stuff could be procured as low as 1d a lb. But the product which came from properly constructed hives was widely different to this bush honey, and could well hold its own against the Californian product.

The fact that there were tremendous possibilities in the bee industry was beginning to take hold of the Government and the people. Up to last year the Agricultural Society had given prizes only amounting to some £10, but this year the prizes in the bee section would amount to £50. Messrs. Anthony Hordern and Sons had given £5, and the Government had given £20, conditionally upon Mr. Gale raising a similar sum. Hitherto it was the country which had shown a desire to foster enterprise in the industry, but now the city had commenced to awake to its responsibilities in this respect. The industry was in a healthy and thriving state, and was one of the most profitable that could engage the attention of the producers.

The New South Wales Board of Exports has been for some time in communication with the Beekeepers' Association on the subject of securing a market for honey, of which large stocks are accumulating. Offers have been received from British merchants of substantial advances against all honey up to a certain standard of quality, if graded and packed under proper supervision. It has been suggested that the honey should be got together in Sydney, and graded to three or more qualities, then bulked, re-strained, and packed properly.

The amount advanced will closely approximate local values, and apiarists will have all the advantage of any higher values which may be obtained on the British market, while the removal of 100 or 150 tons from local competition should have a good effect on prices for what remains. It should be pointed out that discoloured or dirty samples are of no value for export, and would be at once rejected.

It is hoped that the market thus found will give encouragement to our beekeepers, who have now overtaken the local demand, and must look elsewhere for any expansion of the industry.

The Minister (Mr. Cook) is desirous that intending shippers should communicate at once with the secretary of the Board of Exports giving particulars of quantities, etc. Inquiries have already been made from holders of over 20 tons, and there is a market for from 100 to 150 tons, which is capable of unlimited expansion, if we can keep up the quality. Beeswax is also in strong demand, and substantial advances are offered for any quantity.—*Telegraph.*

A good article by "Australian Yankee" on "Hives" in our next.

A Dr. Victor of Cienfuegos, Cuba, his last honey crop was 65 tons.

MOLONG.

G. PACKHAM.

The reports in the A. B. B. of tons of honey from a few hives, makes one feel inclined to kick his bees over for being lazy. About three tons from 60 hives up to the present is not very encouraging, and this has been about the average this five years past. Whether the locality is overstocked is a question of doubt, as there are not more than 200 hives within a radius of five miles, and notwithstanding the scarcity of honey in this district, prices in the Sydney market are down to starvation point. It seems to

me the question that will soon be asked, does it pay to keep bees with honey at 2d and no sale at that. Now, Mr. Editor, is it not about time that bee-keepers began to think about some other market. From reports our honey is not favourably received in England, but are we sure that the genuine honey, or the best that can be produced, has ever been placed before the English honey eaters. Is it not a fact that there are qualities of honey collected in N. S. Wales that are not fit, as it were, for human consumption, and how do we know but this is the class of honey that has been placed before the English public. I am game to say that if our white or yellow box honey was placed before our people on the other side of the water, that they would eat it and smack their lips, and exclaim delicious—we must have more. I have come to this conclusion from having been visited on several occasions by gentlemen fresh from the old country, who could eat my honey with ecstasy and pronounce it equal to any honey ever tasted in the mother land. Of course they were getting it for nothing. Well, Sir, an opportunity having arrived for me to test the English palate, I am preparing for the undertaking. You may like to know, Mr. Editor, how I am going to reach the English palate. Well I will tell you. Of course you need not publish it unless you like. A friend, a Mr. ——— is about to visit the old country on a nine or twelve months trip, and knowing that Mr. ——— was a thorough business man, and ready at a moment's notice to do anything in his power for the interests of the colony and especially the district in which he resides, he immediately consented to take the matter up on being approached. I cannot stop to relate all the details of the arrangement, but I am to give my friend a quantity of honey done up in small parcels for use and distribution among the passengers on board the boat, and I anticipate that when those folk reach their destination and present to their friends some of the sweets of the Australian bush, that a craze will go forth for Australian honey, that has never been heard of before. My friend is to have some in bulk which he will have done up in small glass jars to give it an attractive appearance. A visit is to be made to the Agent General and many others, all of which are to be furnished with a small sample of Molong honey. My friend also intends to place some in the big Exhibition, in fact no stone is to be left unturned as our honey must be forced upon the English people, even if it has to be done at the "point of the bayonet and mouth of the cannon." Will report progress later on.

R. H. J., Moss Vale, February 18 :—Bees in this district are doing very fair this season.

M. McG., Burrowa, 19 Jan:—We are having the best honey season here for some years. I have already taken 1 ton from 17 hives with every prospect of another good flow.

F. W. Penberthy, Elsmore, writes :—I see in my last answers a misprint, 2106 should read 2 to 6. It don't matter anyhow, it is one of those questions that should be answered thus : Get a book on bees.

A. J. P., Duri, 20th February :—We are having a bad time with the bees, we have no blossoms and there is no corn, worth speaking about, We will have a bad time for our show next month, but we are going to make the best of it.

J. F. D., Bellingen, Bellingen River, Feb. 8—I am much pleased with your paper, and read it with interest. Bees have been doing fairly well up to Xmas, but the late showery weather has interfered with them somewhat. I do not expect to extract any more this season.

Mrs. Atchley, Beeville, U. S. A., Dec. 24th :—We did not get but little honey the past season, too dry and hot. We trust that 1899 will bring us a bountiful harvest. Our winter is much more severe here than usual as our bees have been confined to their hives for six to eight days at a time already and this is just Christmas.

"Halewood", Parkes, February 15:—The honey flow which commenced here in August came to end in November, and my 30 colonies average 100 lbs. per colony for three months. I have had a great deal of trouble with ants, although I have tried all the preventions I seen in the A. B. B. I was much interested in Mr. Bolton's articles on New Management, and Control or Prevention of Swarming, and although from experience (for I have already given it a trial) I don't think it is perfect, still it goes a good way towards the end aimed at. I followed the instruction given, and I found that swarming was prevented completely in some colonies; some tore the cells down and swarmed, leaving queen cells with eggs in them. while others swarmed without leaving queen cells at all. However, Mr. Bolton deserves the thanks of the beekeeping fraternity for his excellent articles. My bees are just about keeping themselves at present, though they seem to be trying to force a flow which is coming on slowly for want of a good fall of rain.

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