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West Maitland, N.S.W.: E. Tipper, March 25, 1893

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# THE AUSTRALIAN BEE BULLETIN.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

VOL. I. No. XII.

MARCH 25, 1893.

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Any person sending us five new subscribers' names with the amount of their subscriptions (25-) for 12 months, a *Doolittle's Queen Rearer*.

Any person sending us six new subscribers' names with the amount of their subscription (30s) for twelve months, *Root's A B C of Bee Culture*.

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# The Australian Bee Bulletin

A JOURNAL DEVOTED TO BEE-KEEPING.

EDITED BY G. R. HARRISON.

WEST MAITLAND, - MARCH 25, 1893.


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## Subscriptions Received.

Subscriptions up to the dates specified have been received from the following :—

Feb. '94.	Mr. H. Bennet, Chemist, Victoria-st., Taree.
Feb. '94.	Mr. Percy Saxby, Victoria-street, Taree.
April '94.	Mr. James F. Munday, Woodville.
April '93.	Mr. J. D. Robinson, Public School, Bishopsbridge.
Jan. '95.	Mr. Nicholas Bornholt, Braema Creek, Narandera.
April '94.	Mr. William Niven, Sweet Home Apiary, Eugowra.
March '94.	Mr. A. J. Godfrey, P. O., Candelo.
April '94.	Mr. Duncan Nicholson, Harwood Is. Clarence River.
March '94.	Mr. J. Archbald, Bistock-street, Rockdale.
June '93.	Mr. John Bailey, St. James' Park, Canley Vale.
April '93.	Mr. George W. Gordon, Jamberoo.
March '94.	Mr. Charles E. King, Robertson.
March '94.	Mr. G. W. Smith, Terrigong, Jamberoo.
Aug. '93.	Mr. Harding, Bargo.
March '94.	Mr. Robert Harper, Public School, Menangle.
March '94.	Mr. J. French, Bargo, via Picton.
April '94.	Mr. James Cavanagh, jun., Mt. Alford, Coochin, Dugandan, Queensland.
Sept. '93.	Mr. W. Clemesha, Braidwood.
March 94.	Dr. Florence, Braidwood.

 [We shall be glad to insert in this column Advertisements of dates of meetings of the various Bee-keepers' Associations.]

## Hunter River Bee-Keepers' Association.

### MONTHLY MEETINGS.

—AT—

Technological Rooms, West Maitland.

TUESDAY, APRIL 4th.

TUESDAY, MAY 2nd.

TUESDAY, MAY 30.

MICH. SCOBIE, Hon. Sec.

## TO CORRESPONDENTS.

Victorian Postal notes are not payable in New South Wales. They have to be sent back to the colony from whence sent, and a deduction made accordingly. Postage stamps are more negotiable.



## THE END OF THE YEAR.

**DEAR FRIENDS.**—This issue completes the First Volume of the *Australian Bee Bulletin*.

In entering upon a second year we ask you to help us to increase the number of our subscribers, that we may be able to increase the size of our publication.

If every subscriber to, or reader of the *Bee Bulletin* will write upon a post-card the names and addresses of all the beekeepers he knows, in any part of Australia, and send to us we will have the opportunity of sending sample copies to hundreds whom we cannot otherwise reach.

We would also draw your attention to our numerous bonuses to those who collect and send along their neighbours subscriptions.

We must double our number of subscribers before the *Bulletin* is a really paying concern.

## DISEASES IN BEES.

Having just returned from a trip down the Southern coast, and back through the more inland districts, I have been convinced that it is the duty of the *Bee Bulletin* to bring forward all that can be learned of the various remedies for the different diseases in bees.

That foul brood is not yet stamped out of Australia I am sadly convinced, by having seen it in several apiaries, some of which were surrounded by box-hive men and careless one-or-two-hive-men, who will neither destroy nor cure their bees.

From end to end of New South Wales we meet with traces of bee paralysis, which during the early spring ravaged many of the largest apiaries.

Occasionally we hear of a condition known as non-incubation, under which the eggs in some hives refuse to hatch, so that, in extreme cases, we find a brood nest full of eggs, but no young larvæ. Combs of eggs from these hives hatch

readily if placed in a healthy hive, while eggs from a hive not thus affected will not hatch if removed to affected ones.

There is also a condition under which bees will slaughter their queens and will not receive others, and which condition will be found simultaneously throughout nearly the whole apiary, and which may well be considered a disease.

Foul brood has been cured in many places by the use of various germicides, and has been successfully eradicated by the "Jones" method of starvation. I have taken the opportunity of getting one or two careful apiarists to try some methods which have been stated to be certain remedies and by which apiarists of note have rid themselves of the plague. Of these is the remedy of Mr. J. Warrall, of Baulkham Hills, of hanging in the centre of the brood nest, by a wire, a small bottle containing crystals of carbolic acid, with only sufficient stopper to keep the bees from entering the bottle, to allow of the vaporisation of the acid, thus filling the atmosphere of the hives with the fumes.

Another method is using a solution of one in 250 of chloride of mercury, and applying with a small stick to each individual cell which appears to be affected. Cure by this method is only possible at the hands of the most pains-taking beekeepers.

We are still always liable to re-infection from surrounding hives.

But some researches by Mr. J. J. Mackenzie, B.A., Bacteriologist to the Providence Board of Health, Ontario, Canada, published in the *CANADIAN BEE JOURNAL*, and which we propose to publish in future issues, throws a great deal of new light upon this disease.

Bee Paralysis (*Bacillus Depilus* Cook) is a disease in which the abdomens of the bees become distended, and through which they seem to lose the full control of their powers of locomotion; they stagger about, crawling outside of the hives to die. The bees suffering from it



have a characteristic and disgusting odour. We have seen very bad cases of it cured with one dose of Professor McLain's remedy for Foul Brood—which is: "One pint of dairy salt, dissolved at a temperature of about 90° F in three pints of soft water, in an earthen vessel. A quarter of an ounce of Salicylic acid and three teaspoonfulls of baking soda dissolved in a pint of soft water. Mix both solutions together and bottle for use.

For a mild dose of this, put one tablespoonful to a pound of honey; for a strong dose, two tablespoonfulls to the pound. It is best fed warm. This is Mr. T. H. and Miss Bradley's method of using.

For non-incubation the same is recommended, and we are assured that as a stimulant to brood rearing a mild course of it is invaluable.

### S. A. BEEKEEPERS ASSOCIATION

The usual monthly meeting of the S.A. B.A., was held in the Chamber of Manufactures on Monday evening, February 13th.

The President, Mr. F. W. Gee, in the chair. A message was received from the Central Agricultural Bureau calling the attention of the Association to their Convention, when a paper on "Production and Marketing of Honey" would be read, to be followed by discussion. It was moved and adopted that the Association send notices to their members and that they give the Bureau every assistance to make the Convention a success.

Mr. August Naudebaum tendered his resignation as Secretary, as he was leaving the district, which was accepted.

It was proposed by Mr. H. H. Dollman, seconded by Mr. O. W. S. Wild, and carried, that Mr. Chas. Naudebaum fill the office.

Mr. Meinche was elected a member.

Samples of Honey were shown by Mr. Meinche, one of which had been extracted six months, and was pronounced first class honey. Unfortunately Mr. Meinche did not mention the source from which the honey was gathered.

Mr. W. Brooker reported that the pony that was stung by his bees a short time back had recovered, but was covered with small lumps.—*The Garden and Field.*

### MURRURUNDI BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the above Association was held in the Public School room on the 24th Feb. Mr. Goard (President) in the chair. There was a full attendance of members and also one new one was added to the list.

Mr. Goard reported that he had communicated with Mr. Gale in reference to the promised lecture but as yet had not received any answer. It was resolved to send a delegate to the proposed Bee Convention in Sydney.

Members reported some very heavy yields of honey, one especially, an Italian hive bought from Mr. Pender of Maitland, has produced in the top storey alone over 120lbs. of honey in three months, also producing two swarms. Some who have the black bee reported that the frames were only partly filled with honey, the principal part being brood-comb. The wholesale price of honey was fixed at 4d per lb. It was resolved to have papers read on various subjects at our future meetings. After a good deal of conversation on such subjects as drones, queens, etc., the meeting closed.

D. G. LEYS, Hon. Sec.

### H. R. BEEKEEPERS' ASSOCIATION.

The usual monthly meeting of the above took place in the Technological Rooms, West Maitland, on Tuesday evening, Feb. 29. There was a fair at-



tendance of members. Mr J. Harden occupied the chair.

The minutes of previous meeting were read and confirmed.

The secretary, Mr M. Scobie, read a communication from Mr S. H. Lambton, Secretary-General New South Wales Post office department, re the new arrangements for mailing of queens from America. Another from Mr Shaw, of Mudgee, complaining of bad honey crop at Mudgee, stating that Mr Peterson, of Wattle Flat had however taken eight tons of honey from 120 hives; also giving some suggestions as to date of next Convention.

Mr W. S. Pender laid on the table a model he had received from Mr G. R. Humble, of Willow Tree, of a neat way of packing comb honey in sections for transit. Mr Pender also laid on the table a drone-excluder made of English zinc, and several queen-excluding boards. Mr Munday commented favorably on Mr Humble's method of packing comb honey.

Mr W. S. Pender stated he had written to Mr A. I. Root, recommending that steps should be taken by the Americans to get their postal authorities to allow a larger package for the postage of queen-bees, recommending forty cubic inches.

Mr M. Scobie recommended that they officially recognise the communication from the Post Master General. Nothing could be more satisfactory than the action of the Post office authorities. Mr. Pullen moved and Mr. Munday seconded that a vote of thanks be conveyed to the Postal Department for the action they had taken in regard to mailing queens; and the same be also given to the worthy President, Mr. R. Scobie, M.L.A., and Mr. W. S. Pender, for their trouble in the matter.—Carried with acclamation.

Mr. Pender returned thanks. In doing what he had done he was only protecting himself.

Mr. Patten moved that our secretary be instructed to write to the secretary of North American Bee-Keepers' Association, pointing out the desirability that

efforts should be made on their side, and asking them to use their influence with the Washington Post Office authorities re the size of queen packages, as we are of opinion that the restrictions imposed by the Washington Post-office authorities re the size of queen packages are too limited, and a larger size package if allowed, would be an improvement. Believing, also, the authorities would listen to any request that association would make. If we moved in the matter as an association, and addressed our complaints to a body of authorised beekeepers it would help us considerably.

Mr W. S. Pender seconded the motion.

Mr Pullen supported, and it was carried unanimously.

Conversation ensued respecting a valuable work on Forestry published by that department. It was resolved that Mr Maiden be requested to procure it for the Technological museum.

Mr W. S. Pender opened the debate on the matter of queen-excluding zinc and its applications. He had patterns on the table of the Root excluding zinc and the Chicago pattern of English manufacture. A long discussion took place, Mr Pender speaking of their principal use as honey-boards (to confine the queen and brood in the lower storey and the honey in the top story). Speaking of the Alley drone trap and the entrance guard he said Mr Alley used it to keep his queens purely mated by letting only particular drones out on certain days, and by so doing breeding three varieties of queens in one yard.

Mr Munday spoke in favor of his broad-topped frames as an equivalent for keeping the queen below to queen-excluding boards. He believed the bees in the wide-top frames would get more honey than in the Langstroths, as there were more bees at liberty, fewer being required to regulate the heat in the close top frames. He would like to experiment in the matter. Drones also did not confine themselves to one hive.



Mr Patten said he was carrying-out such an experiment at the present time.

After some further discussion, in which every one present took part, it was agreed that under certain circumstances queen-excluding boards were very useful, but not in a full flow of honey.

The matter of the name of the New South Wales Association having come up it was resolved that as Mr Patten had acted within his right as a member of this association, and in the general interests of beekeeping, the Secretary be instructed to reply to the letter of Mr Bradley in the February number of the *Australian Bee Bulletin*.

## THE N.S.W. BEE-KEEPER'S ASSOCIATION.

*To the Editor A.B.B.*

Sir,—At the last meeting of the H.R.B.K. Association it was resolved on the motion of Mr. Munday: That the Hon. Sec. be instructed to reply to Mr. Bradley's letter in the February issue of the *A.B.B.*, as the matter under discussion was brought forward by Mr. Patten in the interests of bee-keeping, and that in giving notice of the motion re change of name, he had acted quite within his right, and thus deserved and had the support of members.

Acting on this resolution I must have something to say in this discussion, little as I usually write even for publication in papers devoted to bee-keeping.

First I must admit—strange as it may seem—that hitherto I have not carefully read the letters appearing in your columns on this subject. My time has been so fully occupied, that even bee papers have been only curiously glanced at, and then left over for a further perusal at a less busy time, which so far has not come.

Mr. Bradley I see appeals to me, as one present at the meeting of the Bee-keepers' Conference held in York-st, Sydney, after the close of the bee-keep-

er's conference of 1890, to verify his statements, and is surprised that I have not contradicted the misstatements made regarding this matter.

I could not well contradict Mr. Patten's misstatement, that 'we resolved ourselves into a committee, etc.,' or that contained in the following sentence, 'Mr. Campbell was unanimously requested to act as Hon. Sec. *pro tem*,' as I have always looked upon these as matters of fact. Certainly do not agree with the next statement, for though Mr. Abram may have been the one who pronounced it his opinion that 'the association is not dead' there were others who thought 'it is not dead but only sleepeth very soundly.' Thus the discussion was about the steps necessary to awaken the association and to get it into working order again, or to form a new one should it be beyond resuscitation.

As it is about what took place at this meeting that I have been appealed to, I will try to confine my remarks thereto, and must say that, as far as my memory serves me, those present did form themselves into a committee as stated; that Mr Campbell was elected hon. sec. *pro tem.*, and further, that he was empowered to call the committee together when he had obtained certain necessary information.

In addition to being surprised that I had not contradicted Mr Patten's misstatements Mr Bradley also says that I can verify his version of what occurred at that meeting.

Certainly Mr Bradley's memory of what occurred is very different from mine. According to him, the subject that was freely discussed, after the passing of the two resolutions, was bee-paralysis, and the subject of the N.S.W.B.K.A., only cropped up at the last moment. Why, Mr. Editor, if my memory is not again quite out of order the real subject of discussion was about getting the association, if possible, going again, and bee-paralysis was scarcely



mentioned at that meeting, except incidentally in the passing of the foul-brood resolution which I wrote out, and which I wished to have of sufficient scope to include any disease of bees which it might be found could be more successfully combatted by assistance from legislature. I am so very positive about this matter, as at the time I was the only one present who was in the slightest degree acquainted with this particular kind of bee-paralysis that so many have since to their sorrow found among their own bees, and thus I would though at the time physically much incapacitated, have had something to say on the subject. In my paper read at the Conference by Rev. J. Ayling, I referred at some length to this bee-paralysis, and Mr. Bradley has evidently confused the two gatherings together.

I am very sorry that this discussion should have ever arisen, as it is not calculated to advance the interests of bee-keepers, nor is it conducive to the continuance among them of that good feeling which has hitherto been such a characteristic, at any rate between members of the fraternity with whom I have been much in contact. The matter of a representative Society with a membership embracing all the colony, and which will be in a position to do good and effective work for the industry, will be a subject for discussion at the coming Convention, and therefore the matter might well be left to that gathering as has been suggested. To continue the discussion of it at present in the spirit shown so far, is but to retard the better organisation of bee-keepers. I am sorry that I should have been compelled to add to the discussion.

I find that in the last paragraph I have gone outside the bounds that I had intended to confine myself to, and have mentioned matters outside of what occurred at the meeting in 1890. I am &c.,

MICHAEL SCOBIE.

Hon. Sec. H.R.B.K.A.

## BATHURST.

BY J. H. BOX.

I am glad to see by last *Bulletin* so many testimonies re failure of honey supply, because one is apt to consider they are hardly dealt with in not reaching their expectation for the season. Here we have a complete failure, not even sufficient to pay a per centage on the year's outlay. Two apiarists of over 80 colonies each have not taken eight 60lb tins each. Such returns have not been recorded in the district before. The worst has to come and has started, viz.: the dwindling of the colonies from no apparent reason. There is an apparent sufficiency of honey in the hives, but yet the bees waste away numerically. This to me lies in the honey obtained not containing a sufficient supply of either hydrogen, oxygen, carbon or carbonic acid, ingredients of the earth, water and air. There may be a supply of all but one, or other may be suppressed in quantity—instance the honey—I have honey from last year's supply as perfect in every respect as when taken. A small quantity of this year's good sealed honey was bottled and put away with the former. On examination a month later, the latter was cloudy and full of waves, though when bottled had every appearance of exceedingly fine honey. I could assign no reason after careful investigation than that the honey was deficient in saccharine matter. This would tend to show that the carbon or some of the other properties, were retarded from reaching the flora. If therefore the honey is deficient of some of its properties in proportions sufficient to sustain life, the bees must become affected and hence the dwindling.

Feeding will have to be resorted to, but honey at 3d or 4d is better applied to feeding bees than sugar at 2½d or 3½d. The latter necessitates labour, while the former is the natural food. If this is wanting could we not supply the



necessary ingredient? But what is it? Here is a nice subject for investigation, requiring the aid of our generous Director of Agriculture, his able staff and laboratory.

The honey failure to me lies in the early rains starting the sap to rise in the trees and plants at an earlier period than the vernal was prepared to develop. This caused a growth in the tissue, hence the strength went to produce wood, and when the vernal required stimulating, the tissue had absorbed a larger percentage of sap than was its share. This was most apparent to careful observers in the suppression of the chlorophyll of the flora and its short duration, showing that acid,

happened induced to fill in the papers, if not attend the conference.

[Friend Box, see that the bees are not affected with bee-paralysis. Sorry that your district is doing so badly at honey gathering. The North Coast is getting a good crop.]

If all the elements of honey are not present in proper proportion, we would not have honey, as the elements will combine only in their fixed proportions.

It will be the duty of those who subscribe to the BEE BULLETIN to see that their neighbours do so; that is, we think so.—Ed.]

## CESSNOCK.

Mr. Buttsworth, of Cessnock, writes:—Bees are doing well. Some of the "box men and log men" have suffered from moth.

*Write to Drumfin Apiary, West Maitland, for Comb Foundation.*

alkalies or carbon had been absorbed by the tissue. After the early rains there was a period of dry weather with no dews to produce nectar, for I feel convinced that dews are a greater incentive to honey production than rain. Both undoubtedly act, but dew has a slower and more penetrating power which gives the flora time for absorption. Autumn flowers appear as usual, but their honey producing properties are insignificant to the spring flora. If these fail, so will the honey supply. These remarks are only to be taken *cum grano salis* so that some of our more able exponents might come forth and give us their versions. It might happen, Mr. Editor, that several bee-keepers will be unable to attend the conference. Would it not be well to supply all, in case of non-attendance, with ballot papers, that they might be enabled to vote on the all important subjects likely to be brought forward at the Convention? Not only so, but there are many who do not subscribe to the *Bulletin*, and hear little of the important subjects which will affect them if have not done so already. These, through the agency of subscribers could be per-

## RAMBLES OF RICHARD.

### SUNNYSIDE RE-VISITED.

After steering my course through Camden, and finding no bee-keepers of any account in that fertile place. I crossed the Nepean River and proceeded on my way to Appin.

I was not long finding my way to Mr. T. H. Bradley's new location, and found himself and sisters and the "Doo" bees all well and waiting for the honey flow.

Their new location has every appearance of being splendid; on one side is clover pasture, maize and pumpkins, and there is a splendid range of forest containing a great variety of good honey-yielding trees on the other.

The weather was, unfortunately, very showery, and it was some time before I had an opportunity of seeing the Doo's.

Knowing that color is regarded as of lesser importance by Mr. Doolittle, I was surprised to find that the workers were four and five-banded, and were the most beautiful bees I have ever seen. While the overflowing hives bore testimony to the prolificness of the queens. The drones were the brightest I ever met.



When among the bees, Mr. Bradley took the opportunity of showing me a couple of colonies which had suffered badly from bee paralysis less than a week before, but with one application of the McLain remedy they were perfectly cured.

Being weather-bound, I spent three happy days at Sunnyside, learning something new every hour. Both Mr. and Miss Bradley are so exceedingly observant and so ready to give the results of observations, that interest never flags, while in their society, and Mrs. Ardagh, who disclaims being a bee-keeper, gave me many valuable points, while on subjects of interest other than honey-production their narrations were of absorbing interest.

## MUDGE BEE NOTES

BY W. SHAW.

Since my last, the weather has been favourable for the bees in this part, and honey has come in freely, a decided and welcome change from the previous three or four months. A fair crop may yet be secured, but the chances are otherwise, as the weather has now completely broken, and wet weather may now be the rule for some time.

I secured a very large swarm of Carniolans to-day, the first since the Spring. That in itself is a sign that the bees are doing better.

The holding of the next Convention in Sydney will certainly be more central. Those who do not attend will not be able to send in the excuse that it is a busy time with the bees.

## THE BATHURST MUSEUM.

An exceedingly interesting exhibit has been presented to the Technological Museum by Mr. J. Halstead, of Eglington. It consists of a hive of bees, the hive being fitted with glass panels, at the sides and back, so that visitors may see the bees at work.—*Bathurst Advocate*.

## LISMORE.

Mr. William Saville, of Lismore, writes :—

Probably most of the readers of the *A.B.B.* have heard and read a great deal about Punic bees, both for and against. Now, with your kind permission I should like to ventilate a little of my experience with them.

In November last, although against the advice of those who had heard so much against them, I purchased from Mr H. L. Jones, of Queensland, two queens, and introduced them into colonies of black bees. They both turned out very prolific layers, producing fine large-bodied workers and great honey gatherers. Although a very poor season, I had to use two supers, reversing them till I extracted, till the late rains set in, and although we have only had about a fortnight of fine weather, they have two supers of twelve frames, each ready to extract. I also find them very gentle to handle, equal to most Italians, work in a most businesslike manner, the earliest out, and last to finish at night, a terror to the moth pest, and a bee suitable for this climate.

I have also purchased two Carniolan queens from Mr. Jones, to give them a trial. I cannot say much about them at present, only that, if good honey gatherers, they will be good for quick manipulation. With only a slight shake they roll off like magic, and are very gentle.

## ARMIDALE

Mr. J. W. Allingham, Secretary to the Armidale and New England Pastoral, Agricultural and Horticultural Association has written us :—The only exhibits we had in the Honey Classes were 3 entries for best 6 Jars Honey, which was won by W. S. Pfeffer, and 5 lbs. Beeswax, won by the same exhibitor.



**FLOOD LOSSES.**

All our readers will be very sorry to learn that that excellent man and thorough bee-keeper, Mr. J. F. Munday, of Woodville, near Maitland, has lost very heavily in the late floods. We hear that out of over 250 hives, he has now less than 40. We are glad to hear that all his best breeders are among those saved.

Mr. M. Scobie had to move some hives in his home apiary, thus losing some of the flying bees, but as there is little honey to be gathered there at present the loss is very small. His out apiary at Bishopsbridge is well above flood reach, and the honey is showering in there.

We have heard very little of losses from other leading bee-keepers, but a great number of hives were seen going down the river.

We will probably hear of many losses from the Clarence, Richmond, Manning, and Macleay Rivers and from Queensland,

**MORE CHEER.**

Major Shallard, Blue Mountain Bee Farms, Glenbrook, N.S.W., writes : I may mention that I never had better returns from any advertisement than the one in your paper, and as an advertising medium for Bee Keepers, I think it is unsurpassed.

**BRAIDWOOD.**

Mr W. Clemesha, of Braidwood, in sending his and another beekeeper's subscriptions, says :—I am sorry to say that there are not many in this district interested in bees, otherwise I should be able to send you the names of a few more subscribers. If you would allow me to make a suggestion, I think an article on "How to Italianise blacks," and also what time of the year would be the most suitable to do it," would be both instructive and interesting to the "unconverted." Wishing the *Bulletin* success in the future, yours, &c.

**MARRAR.**

Mr William Pacey, Marrar, near Junee, writes :—There has been no rain here for over two months. Herbage is all parched up, and the country looks deplorable. No water for stock—a drawback to farmers in their ploughing operations. Many thanks to you for the kindness I received while in Maitland. I enjoyed myself exceedingly during my holiday in the Maitland district among the Maitland beekeepers. Beekeepers, located wherever they may be, always extend the hand of fellowship to their brethren in other parts when they meet. Although strangers at sight, they have an influence for brotherhood combined with good feelings towards each other. I hope it won't be the last visit that I have made to Maitland.

**THE MUSWELLBROOK SHOW.**

The Upper Hunter P. & A. Association will hold a show at Muswellbrook on Wednesday and Thursday, May 3 and 4, 1893. The following is the prize list for honey, &c. :—Honey, in comb, clear honey, and beeswax, not less than 6 lbs. of each, 10s ; second 5s.

*Write to Drumfin Apiary, West Maitland for Comb Foundation*

**SEASONABLE NOTES.**

Our bees came through last winter in excellent condition. 15th Sept. we had some of the strongest colonies of bees I have ever seen ; about the middle of Oct. the flow of honey failed. Bees dwindled away very fast since then up to the present time. It has taken careful management to keep some stocks up to the proper strength. Our further crop of honey for this season is likely to be small. All bees in this neighbourhood both domesticated and wild have failed to produce honey.—William Niven, Sweet Home Apiary, Engowra.



### CANLEY VALE.

Mr. J. E. Bailey, St. John's Park, Canley Vale, writes:—The season has been very bad for bees. When Mr Harrison was here I had thirty swarms, but they have come down to ten. The cause of their dying was, I bought a new place and shifted them there; then three weeks of wet weather. There is no bloom in the bush. The only feed they have had these two months was from grapes and peaches destroyed by birds. To hear and see them in the vines, they were as thick as a fair swarm. My neighbours said they never saw bees on fruit so thick in their life.

### RICHARD AT THE ROBERTSON SHOW.

Robertson is a small town among the hills, 14 miles from Moss Vale on the road to Jamberoo.

I dropped in at the big pavillion on the show ground of the Robertson Agricultural Association after sun down on the night before the show. I found Mr. J. A. Armstrong, who is one of the stewards, and an enthusiastic beekeeper, working hard to get the various exhibits in place. The only exhibit of appliances was that of Mr. E. King, who showed some Root-dovetailed hives, fitted with Root-Hoffman frames and followers, a simplicity hive, smokers, honey knives, and quite a number of other things, making a first rate show in two exhibits, taking first and second prizes; he also exhibited honey and wax in their different classes, taking first for comb honey.

As Mr. Armstrong lives 7 or 8 miles from and 2000 feet below Robertson, and had very many other exhibits at the show, he was unable to exhibit in the apiarian classes, but he took the prize for growing maize and many other things. He showed a splendid collection of engravings from Hogarth, and other celebrated pictures,

and of ancient coins; but most important of all he showed a collection of nearly a dozen economic plants, which could be grown with profit in the district, each with a description of its uses and habits.

I was most hospitably entertained during the currency at the show by Mr. King. Of course I was kept busy explaining to inquirers the various points of honey and appliances.

I left at the close of the second day after having had a most enjoyable time.

### A Peculiar Incident.

George Millgate, son of Mr. Robert Millgate, residing on the Oakhampton road, lately went after dark to obtain a piece of honeycomb from a beehive on his father's premises. He procured and ate a piece. As he swallowed it a bee secreted in one of the cells stung him in the throat. He retired to his room and shortly afterwards his parents were alarmed by hearing him breathing hard. The young man was unable to speak from the swelling in the interior of the throat. Dr. Liddell was sent in for, and promptly responded to the call, applied remedies, and remained with the patient for several hours, till out of danger.

### REMINDER.

This number ends the first year of the A.B.B. Those subscribers who began with the first number will know that it is time to remit subscriptions for the second year. A few have been generous enough to send their subscriptions for two, and in some cases even four years. The characters of these men seem to the average newspaper proprietor little less than angelic.

Mr. T. Bolton, of Victoria, writes us:—Your journal is certainly improving. Go on.



**OUR CONTEMPORARIES.**

*The Home and Farm* is to hand again, in a slightly new dress, and better than ever.

*The Industrial Journal*, a monthly magazine devoted to manufactures, mining, agriculture and trades, published by William Brooks, of 164 Clarence-street, Sydney, is before us. It is a splendid paper for its purpose.

*The Fanciers' Chronicle* is as good as ever, though it has been slightly misinformed on the subject of Mr. J. W. Pender having lost all his birds in the Maitland flood. The only loss of poultry was a misguided young cockerel, which went out to view the flood on his own account.

*The Australian Agriculturalist*, a bright and lively paper, which earns its name, is before us. We trust it may go well. They have a bee column with some contributions under good names.

**THE BEE MOTH.**

It is probable that the bee moths always fly forth to mate, as we usually see them during the day concealed somewhere outside of, though by the hives. As many are reared on combs in the honey-house, it is not uncommon to find them in this building. They are nocturnal—that is, they fly by night, and, without doubt, usually mate, as they take these after-day nuptial flights. It would be unsafe to say that they never mate in the hives. Both moths and butterflies have been seen in copula before the wings of the female were dry so that she could fly; though, usually, the same species pair only on the wing. So of this species—the bee moth—while they usually, and perhaps always, mate outside, it is possible that copulation may occasionally occur in the hive.—*Home and Farm.*

We want the names of every bee-keeper in Australia, we have some, but we want all. When you send in your subscription, kindly send in the name of every bee-keeper you know and chance whether the name has been sent in before.

**ARTIFICIAL SWARMING.**

BY F. J. MUNDAY.

As the black bees in the old gin cases, &c., as a rule, swarm often enough, mention need not be made of how to make artificial swarms from them. The remarks given here, therefore will be for those who keep frame hives, more particularly for those who have Italian bees as they do not naturally incline to swarm as often as the black bees. Of the various methods the following has been proved to be the best:

When a hive is full of bees and brood, divide it in the following manner: Take seven or eight frames out, and place them in the frameholder. Then select from them four or five frames with the most capped brood. Place them with all the bees on them, and also the Queen in a new hive; and brush some more bees from the other frames as well, if the bees on the brood combs do not cover them sufficiently. Then place the new hive on a new stand. A few of the older bees will naturally return to the old place and very little work will be noticed to go on in the new hive for the next four or five days. But quite enough bees will remain to warm and feed the brood; and as about 1000 bees hatch every day, more room will be required after a few days. Of course, honey must not be wanting. Such new swarm is in some respects superior to a natural swarm, because it has all young bees with combs, brood, and honey, and it is certainly more easily and quickly placed than a natural swarm caught from a high tree. There is also no risk of losing it, and you can time the swarm to suit your convenience. The remainder of the frames on the frameholder are returned to the old hive, and a couple of empty frames, or combs, are added in place of those taken away.

This hive is now queenless, and the bees will show how they lament their loss



by running about the entrance looking for her, and by the humming noise they make. But, as they have brood in all stages, they soon select a number of very young larvæ and form the cells into queen cells. These larvæ are fed on the same food as those in natural queen cells, and on the 13th or 14th day a queen hatches out. Should there be a large number of bees in the hive, and the weather be favourable, it is most likely that they will now send out one or even more swarms with young queens. But if they have no inclination to swarm, then the rest of the queen cells are destroyed by the bees as soon as one queen has left the cell. A few days afterward she will fly out to meet a drone, and when mated and returned to her hive she does not leave it again, except when she accompanies a swarm. She starts laying about two days afterward. The swarming with young queens can be prevented by destroying, on the 9th and 10th day after dividing, all queen cells but one.

If a spare impregnated queen is to hand leave the queen in the old hive, and take the bees and the brood only, at the same time introducing the spare queen to the new swarm. The queen should be caged for a day or two till the bees know her, and become friendly with her. If no queen can be introduced, and the old queen has to remain with the old hive, the bees in the new hive ought to be closed up for a day in a cool dark place with the ventilation board open, or too many bees would, in their first excitement and lamentation over the loss of their queen, return to the old hive. After two days a nearly ripe queen cell can be given them, by which means they get a queen about 10 days earlier than if they had to rear their own queen. Sometimes a young queen gets lost on her marriage flight, in which case some very young brood, eggs, and two days old larvæ must be given to the queenless bees to enable them to rear another

queen. A ripe queen cell would be better. But an impregnated queen would be better still.

## BEE PARALYSIS

We have had it proved to demonstration that McLain's remedy for foul brood, is a specific for bee paralysis (*Bacillus Depilus* [Cook])

We find that it has ceased its ravages for the time being, but it may be expected at any moment at any place, and every beekeeper should be on guard, and have a good stock of the solution on hand.

## OUR COMMON ENEMY

Upon close inquiry, we find among beekeepers an exceeding dearth of honey, and thereupon think, "What a good time for those who have stored their produce," but when we find the fortunate holder of a few hundred weight of this commodity, we are told that there is no demand. "Why?" The groceries are filled with bottles and cans of alleged honey; bearing the name of bottling firms and wholesale merchants, bottles and cans which are retailed for less than *Pure Honey* can be sold for at wholesale.

What do these bottles and cans contain. The labels say, "Honey," and "Pure Honey." But we have the authority of the Government Analytical Chemist, that some of them contain as much as 75 per cent of glucose

The law on the subject of adulteration imposes pains and penalties on those "who knowingly sell, or offer for sale," any article of food which is other than described upon the labels or by the seller.

That law is an exceedingly lame one; you can prove the sale of the article, but who is to prove the "knowingly."

It will require funds to sheet home the "pains and penalties imposed by this



law, but it must be done. If we can kill the adulteration reptile, there is a large local market for our genuine honey at a good price, wholesale and retail, otherwise none.

We must combine and institute proceedings against the largest firm known to indulge in the practice of adulteration and this will require funds which every beekeeper must be ready to contribute, even to the extent, if need be, of 1s per hive.

## QUEEN REARING.

BY W. S. PENDER.

In my last, I left the bees in the hive with prepared frame to commence work forming the cells and feeding the larvæ. If the eggs were the right age, *i.e.*, just ready to hatch, the bees will at once commence work on them by enlarging the cell and preparing the food for the so-called royal occupants. The bees may be allowed to complete the cells, which will be in about six days, and the cells removed as required, or to the queen nursery and the queen and brood returned to the bees.

If more queens are required than the above method would give, the frame of started cells can be removed from the queenless bees and placed in a hive over a queen-excluder as under, and a new frame of prepared cells given to the queenless bees.

The hive to receive the started queen-cells should be prepared two days, previously removing two frames of eggs and larvæ with the bees adhering to them, from below to an upper storey, putting a queen-excluding division board between and being sure the queen is below. The hive selected should be very populous, and the queen at least one season old. When the bees have been feeding larvæ in the upper storey for two days, the hive is ready to receive the frame of started cells on which the queenless bees should have been at work for at least 24 hours.

Go to the queenless hive, remove the required frame and brush all the bees off, at the same time give the queenless bees another prepared frame same as the first. Place the frame of started cells between the two frames of brood in the ready storey and leave them to be completed. This upper storey will be ready to receive started cells every day or two, but care should be taken not to allow too many unsealed cells at once, or they may not be sufficiently fed. It is not necessary to remove the cells as soon as completed. Cells all the way from starting to hatching can be in the one upper storey. While bees are required to feed queen larvæ, the upper storey must always have a frame or two of young larvæ to keep the nurse bees above.

I here gave a caution against shaking bees off combs containing queen-cells, as the royal occupants are liable to be dislodged, and if cells are sealed, are liable to be killed or so injured as to be useless.

3. If more queens are wanted than the one two-storey hive can complete prepare other hives the same way. The queenless hive will start a frame of cells every day, but after taking six frames of cells from them it would be better to give them a queen and make another hive queenless, as the bees would be getting too old to secrete sufficient royal jelly to feed the larvæ for queens. The queenless bees may not start so many cells on each frame after the first three.

By this method the use of one hive only is lost for honey gathering in raising so many queens. All the cells are built in a few hives, so it is not necessary to go through a large number of hives to attend to cells. The cells are completed in a strong colony having a laying queen—*i.e.*, they are simply raised in the quiet order of things as if the bees were intending to swarm. The queens are raised from the egg and are abundantly fed from the egg. By this process I have obtained the best, most prolific, hardy, and largest of queens.



Care should be taken not to allow a queen to hatch, or all the cells will be destroyed. The above is practically the 'Alley method' of rearing queens and I consider it the best.

The only difference between the Alley method of having cells completed over a queen excluder and the Doolittle method is, the former causes the bees to build the cells, the latter makes the cells on a stick and transfers the larvæ and royal jelly to the artificial cells and gives them to a hive of bees over a queen excluder. Many who follow the Doolittle method give the artificial cells first to queenless bees to start, as the bees having a queen will not always start the cells.

It is not necessary to use a two storey hive and honey board to have the cells completed, a queen excluding division board will do, in a single story hive, all that is necessary is to have the queen restricted from getting near the cells. In using a division board it is better to have an empty comb or two between the frame of the queen cells and the division board.

I raised better queens by the above method than by any other, and queens equal to those raised under the swarming impulse.

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## PLANTS VISITED BY BEES

The *Agricultural Gazette* of New South Wales for February, has an article on "Plants visited by Bees." The following "conclusions" are at the end of it:—"Reviewing the foregoing condensed notes, it is worthy of remark that the flora of Australia possesses honey-producing trees, shrubs and plants of a high producing excellence. The honey produced by bees in the near neighbourhood of the forest being of the finest quality, and having few (if any) faults. Judging from the replies to the other questions asked, the bee, while a gum

tree is in bloom, will pass over the most tempting plant in a garden, and wing its way to the borders of the bush; but, on the other hand, a field of maize in tassel is a source of the greatest pleasure to the busy little workers, who swarm in countless numbers, collecting the pollen so necessary for their wants. The plants which next seem to have the greatest attraction are the fruit-trees familiarly called summer fruits. These are mainly of the natural order, *Roseacea*, the flowers borne by these being of a white or pinkish colour, are very sweet-smelling and possess a quantity of honey, eagerly collected by the bees; the citrus family of fruits also are favourite hunting grounds, as from all parts of the colony the orange and lemon are noted. The sweet perfume of these trees is proverbial, and the honey collected by bees in the neighbourhood of an orange orchard is of the finest quality. Clover (both white and red) yields a large quantity of first rate honey, and bees kept at places where clover grows never fail to visit the modest flowers of the plant; dandelion also, is a valuable honey-yielding flower and is noted in all districts from Albury to Tenterfield.

Regarding the size and colour of the flowers most affected by bees, much diversity of opinion exists amongst apiarists, and in the face of the very conflicting replies, it would be vain to determine what coloured flowers are most attractive. It is indeed an open question if colour has any effect in the matter, but, as a general rule, it may be taken that white or light pink, yellow and pale blue seem to be the favourite colours of bee-plant flowers; and, again, while the majority of observers give it as their opinion that small flowers are preferred, it must be remembered that the flowers of melons, pumpkins, and sun-flowers are anything but small. No rule, however, can with certainty be laid down, the insects apparently seek for honey wherever it is to be found, quite



regardless of size of a flower, provided it gets what it wants.

In conclusion, it may be of interest to give two instances—one, of the—it may be called—eccentric tastes of the bee, and the other as illustrating how an experiment intended for one purpose may lead to the development of one of different use. Mr. A. J. Perry, Ballina, mentions in his report that in the month of February he “noticed at a saw-mill where they were cutting some teak, that the bees came in large numbers to the saw-dust every day for about two weeks, even while it was exposed to the sun,” and adds that he was quite unable to account for the fact; and Mr. G. E. Hooke, of Tamworth, writes us that “one year I grew a plot of white poppy for experiments with opium, and found the flowers literally crowded from daylight to dark with bees.”

## QUESTION COLUMN.

1. Do you think oil-cloth for hives is injurious to the bees, on account of it not being porous enough to allow the steam from the bees to escape?

3. What is the best way to prevent ants from climbing up the legs of a bee-stand?

1. No, *i.e.*, if you mean it to be used as mats, and mats are not required with the thick top Root-Hoffman frames, flat cover and a bee space.

3. Ants do not trouble me and I have my hives all set close on to the ground. I consider stands a nuisance. I think a piece of rope tied close around the leg of a stand and a little coal tar put on it every now and then should be effectual. Powdered borax sprinkled around the hive is good to keep them away, I have tried it. Boiling water poured on every nest that comes near the apiary will keep them clear. The above refers to little black ants—W. S. PENDER, Drumfin Apiary, W. Maitland.

1. No, except when it is used as the only winter protective of a colony which does not cover all the combs in its hive. In such a case the bees cannot thoroughly warm the whole surface of the oil-cloth, and so the moisture from their exhalations will be condensed upon its chilly surface and stream down upon the

combs. The use of a layer or two of warm material (old blanket or carpet for instance), will, however, by conserving the warmth from the bees completely prevent this.

3. I never try to prevent them from climbing as I have never seen them effect the slightest mischief to the bees in any way, and believe that they seek the hive for shelter and warmth and not for food.—J. R. H. GAGGIN, Lismore Apiary, Lismore.

1. I have never had any experience with it; I always believe in plenty of upward ventilation; my method is to use sacking for quilts.

3. My opinion on ants is that if you keep your bees strong they will prevent the ants from doing any damage.—J. W. HOPKINS, Tickhole, via Cardiff.

1. A supposition that in some such way it might affect the bees at times led me to use calico in those of my hives which need quilts.

3. Try this:—Tack a piece of sheet zinc right round each leg, on this wrap a few rounds of copper wire. A box-hive man gave me this “wrinkle,” which, as my hives stand on the ground, I have never tested. I presume it was supposed to have some galvanic action.—T. BOLTON, Dunkeld, Victoria.

1. No.

3. Remove all weeds near the hives, and use the rake or broom every week. This will keep the bees away from the legs of the bee stand.—A. W. TENANT-WILD (Vice-president South Australian Beekeepers' Association.)

1. Being an advocate for the wide top bars for frames I have no use for oil cloth or any other cover. But I fancy if I used the narrow tops my vote would go for canvas in preference to oil cloth.

3. When I commenced my apiary there were a few hills of the ordinary troublesome brown ants near here. I cut a channel and turned the next shower of rain in upon them. This proved more successful than the Noachian inundation, for it exterminated them. In drier parts ants are a greater trouble; as I well remember from an experience with the pest some ten or twelve years ago on a tributary of the Lachlan. The best plan is to find their nests, dig them up, put a heap of straw or dry bushes on them, and burn. Do this frequently, and keep the nests covered with litter in the meantime, for they cannot abide a littered roof.—C. MANSFIELD, Hunter River Apiary, Largs.

1. Oilcloth, so far as I can find from experiments, is useful only in the early spring. I don't want any myself however.



3.—Can't see what harm they do climbing up the hive stand, or do I see they interfere with the bees at all, but, by jove! look out for the honey-house. Say! What about an electric contact battery for those legs?—GEORGE JAMES, Bee Farm, Gordon.

1. No. But I cannot speak from experience. The hive I use does not require any cloths I consider cloths a nuisance.

3. Tie a piece of rag, which has been dipped in kerosene, round the legs, and wet the rag with kerosene about once in three weeks. Ants do not interfere with Italian bees.—F. J. MUNDAY, Woodville.

1. I think it is injurious in the winter, so do not use it at all.

3. Tie opossum skins round them.—JAS. McFARLANE, St. John's Wood Apiary, Lyndhurst, Victoria.

1. No.

3. Don't know. All my hives are on the ground. There are thousands of ants about the apiary, but they don't do the bees any damage.—D. CAMPBELL, Black Ranges, Stawell, Victoria.

1. Yes. Sugar bags are much the best.

3. Tar them or stand them in water.—MAJOR SHALLARD, Blue Mountain Bee Farms, Glenbrook.

1. Oil cloth for bee hives is in no way injurious to bees, so long as atmospheric temperature is high enough to keep "the steam" steam or vapour, it is then conveyed out of the hive by the bees' own system of ventilation. But when the atmospheric temperature is so low that the "steam" is condensed on the face of the oil cloth, it is then a source of inconvenience, if not injury, and should be removed.

3. Never have legs to the stand of a bee hive. Put the hive on the ground, with a half brick under each corner. Scatter coal ashes under and around this hive stand and keep your colonies strong. The bees themselves will keep out all harmful ants.—BINNI, Bolwarra.

1. I have never tried oil-cloth. I should think anything of an oily nature would be obnoxious to bees.

3. There is a very good way mentioned in the February number of *Martin's Home and Farm*.—F. C. PULLEN, Villa-st., East Maitland.

1. No.

3. Never been troubled this way, save by white ants. 1lb. arsenic to 2lbs. washing soda, boiled in a gallon of water, and painted on edges and under side of bottom board, is the most effective way of keeping these annoying termites in check.

Painting bottom board with tar is useless.—H. L. JONES, Mel Bonum Apiary, Goodna, Queensland.

1. With the proper  $\frac{1}{4}$  inch top spacing, and flat covers, cloths of any kind are unnecessary; but in any case I would not use oil-cloths. If they were used, do not think they would be actually injurious.

3. Tie a rag saturated with kerosene round the legs of the stand; this is a sure preventive.—F. G. DALY, Richmond.

1. Yes.

3. A piece of opossum skin round the leg and keep saturated with kerosene (my idea).—V. S. PEERS, Deniloquin.

## QUESTIONS.

The following queries were addressed to Mr. C. Mansfield, who has kindly forwarded them to us with the replies:—

1. Do you wire your frames? If so, how?

2. How do you act in connection with drones?

3. Do you consider it more profitable to use starters than full sheets of foundation?

4. Can you give me a few hints on queen rearing?

5. Do you consider your wide top frames superior to the Hoffman. If so, Why?

6. Is there any danger of the comb breaking in extracting with the wide top? What I mean is—that the comb would not rest flat against the wire of extractor on account of the wide top.

7. In your description of hives, you say front piece  $9\frac{1}{2} \times 15\frac{3}{4}$ , back  $9\frac{3}{4} \times 15\frac{3}{4}$ . Should they not both be  $9\frac{3}{4}$  or  $9\frac{1}{2}$ ?

8. Why should both back and front pieces be  $9\frac{3}{4}$  for top storey?

9. How do you form the entrance to hives?

10. Where do you make the opening in wide frames for bees to go into top storey?

## ANSWERS.

1. I do not wire generally, but have been experimenting some lately with our small frames ( $12\frac{1}{4} \times 8\frac{1}{2}$ ). I extracted 250 lbs. one day during Xmas. holidays, and only broke one or two combs. So wiring would hardly pay for that. As the combs get older they are tougher. Yet the bees will build the combs in the wires by using starters only—either of foundation or wax run on—if the hives are fixed horizontal. In the case of Langstroth frames ( $17 \times 8\frac{1}{2}$ ) a good plan is to put a centre piece of frame stuff, perpendicularly. If two centre pieces were used, a saw cut in top and bottom bars would divide a Comb into two for use as comb honey, each part containing about 4lbs. Generally I do not



use either wire or foundation comb, I run on a ridge of melted wax by means of a wet strip of wood, reaching to the centre of under side of top bar. By tilting frame, wax runs from one end to the other, leaving a ridge. If you try wiring use  $\frac{3}{4}$  inch or one inch boot makers rivets, drive one each through centre of top, sides and bottom, points inward, bend points to a hook with pliers inside, and run your wire through them.

2. When young queens are to be impregnated, bad drones may be kept in by excluder zinc. Best plan is to Italianize or at least hybridize by Italian cross as soon as possible, and be careful not to breed from hybrids. Cut out queen cells where they swarm and give good cell.

3. I consider starters more profitable, especially for us who may be called upon to move. It would have cost me about £20 for foundation for my apiary instead of almost nil, and I have not a superabundance of drones. New swarms build all worker combs. By keeping these worker combs in brood chamber, and the rest in supers, excess of drones is avoided.

4. This is a big question, but here goes—briefly. Unqueen a fairly strong black colony. In eight days cut out queen cells, and again in 10 or 12 days as some may be missed. On 8th day after unqueening place an empty comb in centre of brood chamber of your brood queen. Insert this on 12th day in centre of your queenless colony. On 10th day cut out all queen cells, and give one each to nuclei formed at the same time, and to queenless colonies or those just swarmed. Another frame of eggs can now be given to the queenless colony and they will rear another batch of queens to take place of those that fail, &c. Nuclei can be formed by taking a frame of emerging brood and a frame of honey from a colony and putting them in a small hive or an ordinary hive with dividing board or follower. This is the plan followed by leading bee-keepers. The Doolittle plan is too fussy and troublesome.

5. In the Hoffman the wide portion is in the side bars. Why not have it in the top bars? I consider wide tops the best, with spaces either at ends of top bars or one or two narrow tops, to enable bees to enter super.

6. To remedy this I took two pieces of wire netting about 2 inches narrower than comb basket, and 4 strips of wood about  $\frac{1}{2}$  inch thick, placing my wire netting in front of that in comb basket with strips of wood between, I tied all secure with wire. This leaves a slot on each side of comb basket to take wide top bar. A couple of wires across also keeps my small combs from going down to bottom as my extractor was made for L. frames.

7. This difference of  $\frac{1}{4}$  inch leaves a full width entrance for bottom storey. Top chambers would have back and front alike. You see by nailing

the  $9\frac{1}{2}$  inch piece  $\frac{1}{4}$  in. higher up the side pieces it brings both level at top, and forms full entrance. The bottom board is then simply a plain piece cleated to prevent warping, and extending 2 or 3 inches in front for alighting upon. Root's dove-tailed hive has a  $\frac{1}{4}$  inch strip nailed to bottom board on three sides for hive to rest on, leaving full width entrance, which may be contracted *ad libitum*.

8 and 9. Answered in No. 7.

10. Openings are made at the ends of frames as explained in query 5, but I have lately saved trouble of taking out these bits by using 2 narrow tops in middle of hive and placing front and back frames a bee space from hive.

## QUESTION.

To the Editor.

SIR,—Have you ever known black bees to suffer from foul brood?

W. NIVEN.

Sweet Home Apiary, Engowra.

[Yes! Personal experience.—EDITOR.]

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
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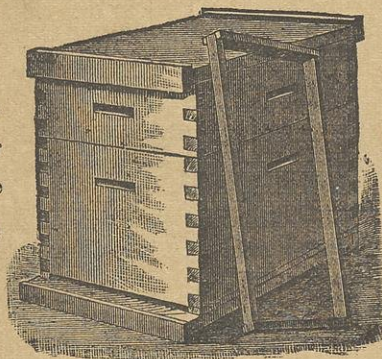


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