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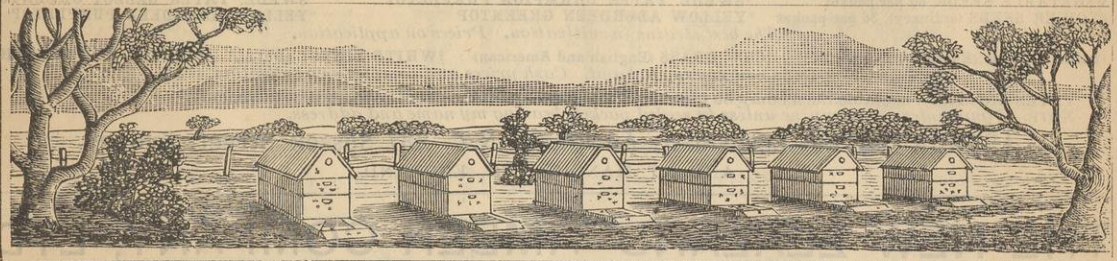
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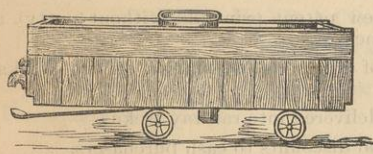
THE AUSTRALASIAN

BEE JOURNAL



No. 2. VOL. II.] AUCKLAND, N.Z., AUGUST 1, 1888.

[PUBLISHED MONTHLY SIXPENCE.



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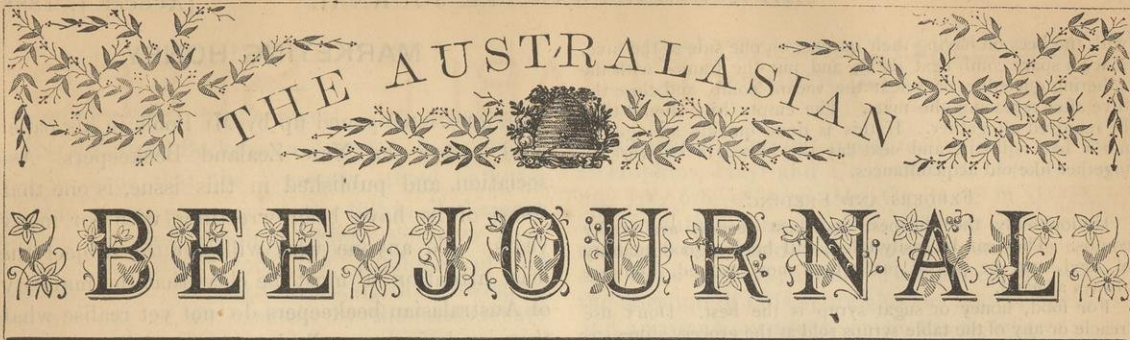
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THE AUSTRALASIAN



BEE JOURNAL

No. 1. VOL. II.] AUCKLAND, N.Z., AUGUST 1, 1888.

[PUBLISHED MONTHLY.
SIXPENCE.

The Australasian Bee Journal.

PUBLISHED MONTHLY

I. HOPKINS EDITOR.

HOPKINS, HAYR & CO.,

Proprietors and Publishers.

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Editorial.

SEASONABLE OPERATIONS FOR AUGUST.

WE have once more arrived at that period of the year when the work of preparing for the next honey season should commence, and right here let us once more endeavour to impress upon the minds of those who desire to be successful beekeepers never to neglect giving their bees the needful attention at the proper time. The work in the apiary during the next month or two is very light, and need not take long at any time, but what is necessary to be done should not be put off on any account.

SPRING MANAGEMENT.

Though August is, correctly speaking, the last month of winter, the spring management of bees should begin at this time. Breeding has now fairly commenced, and the first consideration is to see that the colonies are in a suitable condition for keeping it up. On the first warm, sunny day, go through the hives commencing about 10 o'clock, after the bees have begun to fly briskly. Place a spare bottom board alongside the first hive, on which stand the latter temporarily, and give the permanent bottom board a good scraping, without removing it. When this is done replace the hive and examine the interior. If the bees do not cover more than four or five frames remove some of the empty combs and put in division boards, contracting the hive as much as possible commensurate with the size of the cluster. See to the supply of food, remembering that an extra quantity will be required now for feeding the larvæ, and that there should be no stint, for the queen will lay more regularly when there is a plentiful supply in the hive. We always like to see at least eight or ten pounds of food at this time of the year, and that quantity kept up by feeding, if necessary, until sufficient honey is being gathered to keep the bees going. If the supply of food is short there should be no delay in feeding; instructions for which will be given presently. See that each colony is covered up snug with two or three good dry mats, and make a note of their condition in an apiary register or memorandum book, and also the amount of food required, if any. We find it saves time to mark the dates and condition of the colonies on the covers of the hives, but it is as well to keep a book for the purpose in case the covers get changed or removed. The entrances should be contracted to about two or three inches wide, according to the number of bees in the hives.

QUEENLESS COLONIES.

While going through the hives keep a good look out for queenless colonies, which are easily discovered at this time of year. As we stated last month, a colony in its normal condition will have a good-sized patch or two of brood, and should none be seen it will be pretty certain to have no queen. However, before deciding, have a good look for eggs in the cells of the centre combs, and if none be found, mark it as queenless.

UNITING.

After going through all the hives unite the queenless colonies to the weakest of those with queens. First move the hives containing the former a few feet every evening till they are alongside the latter; then just before dusk take off the covers and mats from both hives and shift the frames

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TO OUR FRIENDS.

We would respectfully remind those of our old Subscribers who have not paid their subscriptions for the current year that they are now due, and we shall be obliged by their remitting the same. Should there be any who do not wish the Journal renewed, we shall be glad if they will drop us a line to that effect. Half-yearly subscriptions taken.

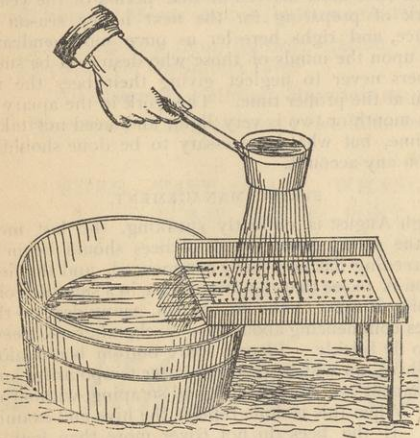
with the bees on having their queens, on one side of the hive, place a spare comb next them, and put the frames with the adhering queenless bees next the vacant comb, and close the hive after replacing the mats. The empty hive should then be removed altogether. If this is done quickly and gently not a bee will stir, and next day the bees will be working together like old acquaintances.

FEEDERS AND FEEDING.

Undoubtedly the cheapest and best feeders are empty combs. They can be easily filled, will hold a good quantity of food, can be placed just where most wanted, and are always at hand.

For food, honey or sugar syrup is the best. Don't use treacle or any of the table syrups sold at the grocery stores, as we have heard of some doing to their cost. Now, as this is the best time for applying foul brood remedies, where food must be given, it will be a good thing to feed medicated syrup. It can do no harm even when there is no disease, but will act as a preventive. The first schedule of the New Zealand Foul Brood Act, published in another column, gives the recipe for making syrup. It is only necessary to leave the drugs out if not required.

The following engraving explains very clearly the best method for filling combs with syrup. The frame of comb is laid in a



shallow tray, which should be on a greater incline than is shown, and resting on the vessel containing the syrup. Underneath the frame there should be a piece of board a little larger than the frame, to be lifted with the comb when turning it over. The syrup should run through a fine strainer, or a tin with fine perforations, held about a foot above the comb; falling from this height the syrup forces itself into the cells. When one side is filled turn the frame over carefully and fill the other. Let the combs be free from drips before putting them in the hives.

Planting for shelter and bee food may still be continued, and honey plant seeds may be sown. Hives and other appliances required for next season's use should be on hand within the next few weeks, so that there may be no delay when they are needed.

EXAMINATION OF COMBS, ETC.

MR. HERBERT wishes us to state that, contrary to his expectations, the extra appliances in connection with his microscope, which he understood would arrive from England by the last San Francisco mail, did not come, and as these comprise high powereye-pieces and all the latest improvements for mounting very minute organisms, he would prefer to wait till they arrive before undertaking any examinations. In the meantime specimens may be sent, and if the glass bottles mentioned previously cannot be obtained to put them in, small clean tins might be used.

MARKETING HONEY.

THE question opened up by Mr Poole in his paper read before the New Zealand Beekeepers' Association, and published in this issue, is one that some of us have been wrestling with for many years. To anyone who will give the subject the least attention it must be clear that the majority of Australasian beekeepers do not yet realise what they are losing annually by not exercising ordinary business tact when preparing their honey for market; if, indeed, it can be called "preparing" to put it up in all sorts of odd ways totally unlike anything else seen upon the markets. We have hammered away at the subject so much that we should ere this have been heartily tired of it, but that it is so intimately connected with the progress of the industry of beekeeping, we feel we must not let it rest until something is done to bring about a much better state of things than exists at present. It is not only in New Zealand that reforms are needed in this particular branch of our business, but in each of the Australasian colonies, so that whatever may be the outcome of the deliberations of the New Zealand Beekeepers' Association, it will apply with equal force to all. We believe much good will have been done before the Association allows the matter to drop, and we hope that all our readers who may have suggestions to offer will accept the invitation of the committee and send them on.

The annual loss to the beekeeping industry throughout Australasia from the want of a proper system of marketing our honey must be enormous. Let us try and figure it out. We believe it will not be too much to say that were a regular business system adopted, we should net, at an average, one penny per lb. more for the whole of our honey, or, in other words, we are now losing that amount through the carelessness of the majority of our beekeepers. Now, what is the average annual crop for Australasia? At the best we can only guess at it, but we think it will be within the mark if we set it down at 800 tons. One penny per lb. on 800 tons represents a sum of £7,466 13s 4d. Even supposing the loss only amounted to half that sum—£3,733 6s 8d—then we have figures showing it to be well worth the while of every intelligent beekeeper exerting himself to assist in bringing about the needful reforms. There is also an indirect loss: we may fairly reckon that there would be a greater increase in the demand for honey if the whole of it was put up in an attractive manner and in such sized packages as might be found most suitable for the different markets.

The scheme suggested by Mr O. Poole in his paper is similar to one we have before put forward, and one, we think, calculated to remove the difficulties now in the way of small beekeepers, and give them every facility to market their honey in the best form at a minimum of expense. We shall look forward anxiously for the result of the movement now set on foot.

THE FOUL-BROOD ACT.

It will be noticed in the report of the meeting of the New Zealand Beekeepers' Association, published in this issue, that the Secretary stated he knew nothing of the progress of the Bill in Parliament beyond the first reading. Since then we have received a letter from the President of the Association at Wellington, stating that, owing to the blocking of all business by the tariff debate and other Government measures, he feared the chances of getting the Bill passed this session were very small, but he had consulted the Government on the matter and hoped they would take it in hand so as to get it through before the close of the session. We are quite certain that Mr Lawry is doing his best for us, and we must wait and trust that he may get a favourable opportunity to push the Bill through. In the meantime we have decided to publish the draft to give our readers an opportunity of discussing it. It will be found in another column.

VICTORIAN BEE COMPANY, LTD.

WE have received from Mr. H. Naveau, Hamilton, Victoria, the prospectus of the above company, which is now being formed to take over the whole of Mr. Naveau's stock of Italian bees, plant, etc., and to carry on the business of honey-raising, etc., on a large scale. The capital of the proposed company is £2,000, in 2,000 shares of £1 each; 1,000 of which are to be issued and called up to 10s. per share, payment extending to 1st of December, 1888. The site of the proposed honey farm is between Mounts Sturgeon and Abrupt, in the heart of the eucalypti country on the bank of the river Wannon. Mr. G. Dilnot has been appointed secretary and general manager, and Mr. Herman Naveau apiary manager.

The directors have been fortunate in securing the services of the latter gentleman, and we have no doubt whatever, from what we know of him, that under his charge the apiary will give a good account of itself. It is a good thing for the honey trade of Victoria that there is every prospect of the markets being supplied with a reliable brand of honey; for just now, we are given to understand, there is a great quantity of manufactured honey being sold in Melbourne and other large towns. We wish the company every success.

DEPARTURE OF MR. R. J. KENDALL.

WE are sorry to state that our friend and contributor, Mr. Kendall, has left for fresh fields. He had for some time contemplated returning to the United States, but finally made up his mind to try Victoria first, and left for Melbourne last month. Feeling very unsettled of late prevented him contributing to the *Journal* regularly, but he has promised to take up the running again as soon as he gets settled and has had time to see how things in the bee line are moving in Victoria. We shall be very pleased when that time comes, for Mr. Kendall is a very pleasant and amusing writer. We wish him every success.

NEW ZEALAND BEEKEEPERS' ASSOCIATION.

THE regular monthly Committee meeting was held at Hopkins, Hayr and Co.'s office on Friday evening, July 6th, at 7.30, Mr. O. Poole in the chair. The minutes of the previous meeting having been read and confirmed, the Secretary read the report sent in by the sub-committee appointed to consider the question of railway freights on honey, beeswax, and apiarian appliances, which was as follows:—

Mr. Chairman and Gentlemen,—Your sub-committee, on going through the supplement to the *Government Gazette* dated January 30th, 1888, containing the scale of rates and charges on the New Zealand railways, we found—1st. That extracted honey of local production, packed, is rated under class C, and the charge per ton for 100 miles is £1 13s. 7d.

2nd. The same as above for export in not less than 10 cwt. lots, is rated under class D, and the charge per ton for 100 miles is £1 6s. 6d.

3rd. The same in kegs or casks is rated under class B, and the charge per ton for 100 miles is £2 1s 6d.

4th. Beeswax is rated under class A, and the charge per ton for 100 miles is £2 9s. 4d.

5th. Of apiarian implements only bee-hives are mentioned, and these are rated under the highest class (A), the same as beeswax, and the charges are the same.

6th. We are given to understand that goods not specified in the *Gazette* are rated under class A, so that all apiarian implements are charged the highest rates.

With regard to the carriage of honey you will notice there is a difference in the charges between the highest and lowest rates of 15s. per ton for 100 miles. Your sub-committee cannot see any reason why there should be this or any difference in the charges. Honey, if properly packed, is as easy of carriage, whether in cases or casks, as any other class of goods, and it cannot possibly affect the cost of carriage to the railway department whether the honey is intended for export or for local consumption. We notice that beer in casks is carried at a lower rate than honey in casks. We are of opinion that honey securely packed, either in cases or casks, in large or small quantities, should be rated under class D, the same as fresh fruit, to which (so far as they may both be considered as country produce) honey can be compared.

Beeswax, though a raw material produced in the country, chiefly used here for apiarian purposes, and exported, is at present charged an exorbitant rate compared with other country produce, and we can see no reason why it should not be rated the same as recommended for honey, in class D.

Beehives and all other apiarian appliances which can fairly be compared with agricultural implements, we are of opinion should be carried at the same rates as the latter, under class C.

Taking into consideration the fact that a great deal of the material connected with apiculture has to pass twice over one or other of the railway lines of the colony, and the complaints constantly being made of the high rates for carriage, we are of opinion that if our recommendations are carried out, it will be the means of giving an impetus to the industry of bee-keeping throughout the colony, and cause an increase to the revenue of the railway department from this source.

We would suggest that if our recommendations meet with your approval, and the report be adopted, that copies be sent to the Hon. the Minister of Public Works, Mr. Lawry, M.H.R., and Mr. C. Hudson, Traffic Manager, Auckland Railways, with a request from your Committee that the recommendations be favourably entertained.—G. L. PEACOCKE, Chairman sub Committee.

The report was unanimously adopted, and it was decided to act as suggested.

The Secretary reported that no further steps had been taken with regard to the passing of the Foul Brood Bill, now before Parliament, beyond the first reading, so far as he was aware, and he had written to their president expressing a hope that the Bill would be brought on again this session, but had not received a reply. The Committee expressed their

belief that Mr. Lawry would lose no chance for pushing the matter, but the tariff debate had thrown all other business backwards. We should no doubt hear of the matter shortly.

Mr. O. Poole then, in accordance with the notice given at the last meeting, moved, "That the whole matter of marketing honey be taken into consideration and discussed, with the view of arriving at the best and most economical means of placing members' honey on the market for sale." This was seconded by Mr. Peacocke, and carried. Mr. Poole then read the following paper on

MARKETING HONEY.

Mr. Chairman and Gentlemen,—The prosperity or otherwise of apiculture depends entirely upon the state of the honey trade, and the former can only be successful when the latter is in a sound, healthy condition. Now my observation and experience, since I have been in New Zealand, convinces me that the honey trade here is not in a healthy condition; therefore I am not surprised to find that the industry of beekeeping is languishing and beekeepers complaining. I am quite satisfied, however, that the trade can be improved, and that to a very great extent, provided our beekeepers one and all will put their shoulders to the wheel and bring about the needed reforms in the matter of marketing honey. We are all only too painfully aware of the present state of this branch of beekeeping, and while the present condition of things lasts it is hopeless to expect any improvement in the business. Compared with beekeeping in the old country, it is a remarkable fact that in the practical work of the apiary you are a long way ahead, but generally speaking you are a long way behind British beekeepers in making the most of your produce. I have had the honour of acting as judge at some of the principal bee and honey shows in England, and know whereof I speak. It is quite a common thing here to see honey sent in for sale in a most discreditable condition. For several months in the year it can be seen in almost every auction room, in every sort of vessel that will hold it. Some in rusty biscuit and kerosene tins, more again in leaky kegs, and I have actually seen extracted honey put up in wooden boxes. The wonder to me is that those who pack honey in this manner can expect a purchaser for it. Once now and again a parcel may be met with decently packed, but this is the exception. I have seen a great deal sold at auction, and very rarely known it to bring more than 1½d per lb—a ruinous price for honey, yet it was quite as much as the beekeeper deserved. And if the evil ended there it would not matter, but unfortunately all our beekeepers are injuriously affected by the action of the careless ones amongst them. Such a state of things would not be tolerated in the old country, and considering the question has such an important bearing on the future of beekeeping in this country, I consider this Association cannot assist the industry more than by taking the matter of marketing honey in hand and sticking to it until some means are found to remedy the evils that now exist. If it can do this, and I haven't the least doubt of the Association being able to accomplish anything it takes in hand, it will have earned the good-will of every beekeeper in the country, even supposing it never did anything else.

I do not for a moment pretend to be able to solve the difficulty myself, and the object of this paper is chiefly to draw attention to the matter and form a basis for discussion. I shall, however, give an opinion upon some points that I think worthy of consideration, and I should like to see the discussion of the subject postponed till some future meeting. In the meantime the members of this Association might be invited through the journals to assist by giving their opinions and suggestions. By these means the committee may receive some valuable hints that will materially help them to devise some scheme for getting over our present difficulties.

Now, before a healthy trade in honey can be established, the article must be put up in proper trade packages, suitable for the market it is intended for. It must be neatly put up, labelled, and cased, fit to go into any grocery store, particular attention being paid to the grading. It is clear to me, however, that this cannot be done with profit by small beekeepers, with their two, three, or four hundred pounds of honey, particularly when located a long distance from town, as the cost of getting small lots of material, with the freight

both ways added, would be too heavy. The carriage either by sea or land is a very heavy item in this country, so that whatever scheme may be suggested this must be reduced to a minimum. It seems to me that the chief cause of our trouble is in the direction indicated, and I will now point out how I think the difficulty may be got over, while at the same time the small beekeeper and the industry generally would be greatly benefited. There should be an establishment—call it a honey depot, if you like—in each of the cities that happen, like Auckland, for instance, to be the centre of a large beekeeping district, where honey in large or small lots could be sent to be tinned, labelled, cased, graded, and sold, at certain fixed rates, according to quantity. It has been suggested that the association might undertake it, but this is out of the question, as the association is not a trading company. And again, it was suggested to form a honey company, but this, too, is impracticable; the more so when we consider that the British Honey Company is now being wound up. My idea is that this Association might call for tenders for doing the work, and I have no doubt if the majority of our beekeepers would promise to give their support—I mean, of course, those who would be benefited by the scheme—we could get a respectable firm to go into the matter and take it up. If this were done I am sure the cost to the beekeeper for tinning, etc., would be reduced to the lowest, as the tins, labels, and cases would be purchased by the firm in large quantities, and a great saving effected in this way. The firm could also keep suitable vessels to send to the beekeepers requiring them to ship his honey in, the firm charging a small sum for their hire. This would effect another saving. It might also be arranged by the beekeeper paying a trifle for interest that the cost of tinning, etc., should be deducted from the proceeds of the sale so that the beekeeper would not be at any immediate outlay in preparing his honey for market, which in many cases would be a great convenience.

I need scarcely point out the many advantages that such a scheme would bring to the honey trade if generally adopted, and so far as I can see it is quite practicable, provided our beekeepers can be induced to study their own interests, and surely the lesson they must have learnt by this time while working on the old lines will make them only too glad to adopt any scheme that holds out a promise of bettering the condition of beekeeping.

A vote of thanks was unanimously accorded Mr. Poole for his interesting and valuable paper.

After some consideration of the matter it was resolved to postpone the discussion of the subject till time had been given for distant members to send in any suggestions they feel disposed to make that may assist the Committee in the matter.

The hour of meeting then came up for discussion. Several members of the committee suggested holding the meetings in the afternoon, as being more convenient for most of them and for country members coming into town. It was finally resolved that the hour of meeting be 2.30 p.m., on the first Friday in the month instead of 7.30 p.m., as at present. The usual vote of thanks concluded the meeting.

ERICA ARBOREA FOR SHELTER AND BEE FOOD.

This is a most useful plant for the apiary. Grown as a hedge it affords good shelter for hives, and belonging to the heath family is sufficient to recommend it as a bee plant.

We have made arrangements by which we can supply large plants, well balled, at 6s. per doz. or 35s. per 100. Smaller plants 25s. per 100, with 1s. 6d. added for packing case.

If planted four feet apart a close and ornamental hedge will be obtained which will bear trimming to any extent.

FOUL-BROOD AND DISEASE IN BEES PREVENTION ACT.

1. The Short Title of this Act is "The Foul Brood and Disease in Bees Prevention Act, 1888."

2. In the construction of this Act, if not inconsistent with the context :—

"Bee-keeper" means any person who keeps or allows to be kept on his property one or more colonies of honey-bees.

"Bee-expert" means any person skilled in apiculture appointed by law to carry out the provisions of this Act with regard to the examination of bees, beehives, or combs alleged to be diseased, and the ordering of measures to be taken with respect to diseased bees, hives, and combs, by the owner or other duly-authorised person.

"Hive" shall mean any box, basket, skep, barrel, or any other receptacle in which bees are domiciled.

"Colony of bees" means the number of bees confined in any hive.

3. For the purposes of this Act there shall be appointed by the Governor one or more bee-experts to carry out the duties hereinafter set forth.

4. After the passing of this Act it shall not be lawful for any beekeeper knowingly to keep or allow to be kept upon his premises any colonies of bees infected with "foul-brood" or other contagious bee disease, without taking the proper means described in the first Schedule to cure such disease; and if, for more than seven days after becoming aware that any bees on his premises are affected with contagious disease, he shall neglect to destroy by fire or to take the proper measures to cure such disease, he shall be liable to a fine not exceeding forty shillings.

5. If in any locality where colonies of bees are kept within six miles of other domesticated bees there is reason to suspect that any such bees in such colonies are diseased, it shall be lawful for any two beekeepers to send in writing a notice to the owner of such colonies, and require him to satisfy them by any reasonable means that his bees are free from disease, or otherwise that he has taken measures to eradicate the disease by destroying the infected hives, bees, and combs, or otherwise by treating them by one of the modes described in the First Schedule. A copy of such notice shall be forwarded at the same time by the complainants, accompanied by their names and addresses to the nearest Magistrate.

6. On receipt of such notice the owner of such bees of which complaint has been made, shall forthwith take steps to satisfy the complainants by whom the notice was sent, either by allowing them to inspect the suspected bees, combs, and hives, or by other reasonable means, that the said bees, combs, and hives are free from disease, or that he has taken the proper measures to eradicate the disease if the same exists.

7. If after the expiration of three days from receipt of the notice the keeper of the suspected colonies neglect to reply to the notice, or if, having replied, he fail to satisfy the senders of the notice as set forth in the preceding clause, it shall be lawful for them to complain in writing to the nearest Magistrate, reporting such neglect, a copy of such complaint being at the same time sent to the offending beekeeper; and on receipt of such complaint the said Magistrate shall, without delay, instruct a constable to accompany the complainants, and with them to enter upon the premises of the offending beekeeper, and then and there to require him to open such hives and expose such combs as the said complainants may direct; and, in case of his refusal, to authorise the said complainants themselves to open and examine such hives and combs as they may deem necessary.

8. If after such inspection the said complainants shall be satisfied of or suspect the existence of disease in all or any of the hives so inspected, the constable shall require the said beekeeper, or in case of his refusal, the said complainants, to cut out from each suspected hive a portion of comb not exceeding six inches square, and to place each portion or portions of comb in separate tin cases or boxes, marking the same with a legible mark corresponding to a mark placed upon the respective hives from which the portions of comb were taken, and then and there to seal such case or box, and to deliver the same thus packed and sealed to the constable for transmission to the nearest expert, together with a docu-

ment signed and in the form set forth in the Second Schedule; also, the cost of carriage, and the payment of the expert's fee as hereinafter provided for. Provided always that if the keeper of the infected bees shall, in the opinion of the complainants, take sufficient steps to destroy by fire the suspected hives, combs, and bees, then it shall be unnecessary to send the suspected combs to the bee-expert, as above described.

9. On receipt of a parcel of comb for examination, the bee-expert shall examine the same without delay, and if, in his opinion, the comb is infected with contagious disease, or if it be free from disease, he shall notify the fact in writing forthwith to the complaining beekeepers, as also to the constable; and shall transmit with such notification directions as to the steps to be taken with respect to the colony or colonies of bees from which the combs were taken; and upon the receipt of such notification from the bee-expert, the constable shall notify the keeper of the infected or suspected bees of the result of the examination, and require him, within three days, to carry out the instructions of the bee-expert to the satisfaction of the complaining beekeepers; and, in case he shall fail to carry out such instructions within the time specified to the satisfaction of the complainants, they shall report such default to the nearest Magistrate, who shall direct a constable to accompany the said complainants to the premises of the keeper of the infected colonies of bees, and shall authorise such constable to carry out the instructions of the bee-expert, and in such latter case the offending beekeeper shall defray all the costs of the examination by the bee-expert, and for the loss of time and other reasonable expenses incurred by the complaining beekeepers or such constable.

10. If the offending beekeeper shall wilfully obstruct the carrying out of the instructions of the bee-expert, he shall be liable to a fine not exceeding twenty shillings for each infected hive.

11. The fee payable to the bee-expert for examination of one sample of comb shall be five shillings, and for other samples sent from the same apiary, at the same time, one shilling for each additional sample.

12. In the case of any examination of suspected comb by the bee-expert, his fee, and all costs attending such examination and incidental to the complaint, shall be payable by the complaining beekeepers if the comb or combs be reported upon as free from contagious disease; but if found to be infected by disease, then such fee and costs shall be payable by the keeper of the diseased bees.

13. After samples of comb have been taken from any suspected hive or hives for the purpose of examination by the bee-expert, if such hive or hives shall be removed or interfered with in any manner whatsoever by any person, or if any person shall obliterate or otherwise render illegible any official mark placed upon such hive or hives, save and except upon the authority of the bee-expert, the keeper of such hive or hives shall be liable to a fine not exceeding sixty shillings for each hive or mark so interfered with.

14. All fines and penalties made payable under this Act shall be recoverable summarily under "The Justices of the Peace Act, 1882."

SCHEDULES.

FIRST SCHEDULE.

In bad cases, total destruction of bees, hives, and combs by fire.

In mild cases, or as a preventive, any of the following remedies :—

No. 1. Salicylic-acid, solution for mixing with syrup for feeding bees, painting the interior of hives, and spraying combs and frames—Salicylic acid, 1oz.; soda borax, 1oz.; water, 4 pints.

Medicated syrup for feeding bees affected with contagious disease :—(a) For use from August to May : Ordinary table sugar or honey, 10lb.; water, 7 pints; vinegar, 1oz.; salicylic-acid solution No. 1, 1oz.; salt, 1oz. Mix and boil for a few minutes. (b) For use from May to August : Ordinary table sugar or honey, 10lb.; water, 5 pints; vinegar, 1oz.; salicylic-acid solution No. 1, 1oz.; salt, $\frac{3}{4}$ oz. Mix and boil for a few minutes.

No. 2. Absolute Phenol : Pure phenol in crystals, 12oz.; water, 3oz. Shake well until dissolved.

No. 3. Phenol Solution : Pure phenol solution, No. 2, 1oz.; water, 1 pint. Shake well until the oily appearance has entirely disappeared.

Phenolated Syrup:—For use from August to May: Sugar syrup as given in recipe for medicated syrup (a) (omitting salicylic-acid solution No. 1), 1 pint; phenol solution No. 3, 1oz. For use from May to August: Sugar syrup as given in recipe (b) (omitting the salicylic-acid solution No. 1), 1 pint; phenol solution No. 3, 1oz.

No. 4. Phenol solution for spraying bees and combs: Absolute phenol solution No. 2, $\frac{1}{2}$ oz.; water, 5 quarts.

General Treatment of Diseased Bees:—Remove the diseased bees with their hive from its position and put another hive, that has previously been disinfected by painting the interior with No. 1 solution of salicylic-acid or No. 3 solution of phenol, in its place. Transfer the frames, combs, and bees from the old hive, spray them with No. 1 solution or with No. 4 solution, and put them in the new hive. Remove most or all of their honey, and feed the bees on medicated or phenolated syrup until cured of disease. The old hive must be thoroughly disinfected in the manner described, as also the hands, and everything that has been in contact with the diseased bees or their hive.

SECOND SCHEDULE.

To the Bee-expert [*Here insert name and address*].

I, CONSTABLE [*Here insert name and address*], have this day sent you [*Here insert number*] portion or portions of combs marked [*Here insert marks on combs*], cut from hives believed to contain or have contained diseased bees, and I desire you to examine such combs and report to me and to [*Here insert names and addresses of complaining bee-keepers*] in writing your decision and the steps to be taken with such bees, combs, and hives from which such portions of comb were taken. Fee for examination and report enclosed.

I have, &c.,
A. B., Constable.

IS THE VENTILATION OF HIVES AS YET PERFECTED ?

By J. R. M.
III.

IN vol. i. pp. 9, 27 an endeavour was made to draw attention to the probable effect of wind on the air inside a Langstroth hive, judging from its known action in other cases; and again, under the heading "Is the Ventilation of Hives yet Perfected?" on pp. 149—166 attention was drawn to the probable effect of the excessive power of the internal motive force for ventilation, when least wanted, and its weakness when most wanted—the motive force being that evolved by the difference between the temperature of the external air and the internal air as heated by the bees. The complete absence of any carefully conducted and systematic experiments on both these heads, as far as the writer knows, must be his excuse for bringing the subject forward on the grounds given. It was done in the hope that the probably more serious effect of the two forces alluded to, than is generally supposed, would lead to more attention and the needed experiments. It was then intended to suggest the kinds of experiments needed, when some courteous but strong demurrers to the conclusions drawn appeared in vol. i. p. 183, and vol. ii. p. 6, from the hand of the eminent New Zealand apiarist, the elder Mr Mulvaney.

As the writer cannot hope to have any attention paid to suggested experiments, unless he can show pretty strong *à priori* grounds for the need of them, he will first allude to the objections raised to his conclusions; but as it is always pleasanter reading if such objections are dealt with on general

grounds than as put forward by some individual (when the discussion is apt to take the form of a personal quarrel), he will take the liberty of omitting all allusion to the one, who has in this case made them, only begging readers to give all the more weight to the objections, knowing from whose able hand they come.

I. With regard to the effect of wind playing directly on the front of a hive with the entrance reduced to a half-inch width, and three-eighths deep, if no allowance is made for disturbing causes, common arithmetic will show that enough air will enter in a ten-mile breeze to change the whole internal air once every half-minute, the cubical contents being assumed as 1,000 inches. As the winter winds are the ones which concern the apiarist most intimately, it means that only haphazard obstructions, and the heat of the clustering of bees, prevent the inside temperature from being continuously lowered during the whole of the storm to the temperature of the wind, which let us deal with as at least below 40° for a considerable number of nights every New Zealand winter. To this *à priori* conclusion, based on known laws of the motion of air, it may be objected:—

(a) *That the wind seldom, if ever, gets full play on the front as assumed.*

Let us hope that it does not; but if the effect is, what is probable, it should make beekeepers doubly careful that it should not. However, it may well be doubted if it does not oftener happen than is expected. Certainly enough hives have been seen by the writer very carelessly placed. Even, however, with care, the eddying winds will both cause compression of air, and play direct on places out of its direct line. Take a blustering night; through what window, what door, what keyhole does not the cold air drive in, time after time? And a twenty-mile wind will produce many a ten-mile back current. Moreover, a direct impact is not necessary to do all the evil predicted. An 80° variation would have nearly the same effect on the Langstroth rebated entrance; and 180° variation would by suction of the air out of the entrance draw down nearly the equivalent to an entering wind.

(b) *That even if it did, the effect does not, and, it could easily be shown, cannot take place (1) because the wind would generally break its own force by the play on the surface of the hive; (2) because it must be assumed that thick mats and cotton wool padding on the ventilating holes are used; and so it even becomes a question, whether any of the ten-mile breeze could force its way in at all; (3) because we should long ago have heard of the frequent destruction of whole colonies, if it did have the effect stated.*

With regard to (1), a certain amount of percentage must be allowed for the constant agitation around the entrance of the hive, due to the wind striking the front, and being driven up and down, left and right. But even if we allow 500 per cent. it makes the effect still alarming enough; and per contra it must be remembered that the triangular rebate in the floor-board of the usual Langstroth

tends to act as a funnel, and so counteract much of the benefit which, we might legitimately hope, would accrue from the agitation; and lastly, that the agitation itself is not wholly a gain, for there are quite enough ascertained facts to show that the air in such cases temporarily gets compressed, and so exerts a new and less resistible force, which goes a long way towards neutralising the beneficial effect. For instance, it is generally accepted that in front of a locomotive engine a regular wedge of compressed air is formed. And the following also was a specimen of it, which came under the writer's own observation. An outhouse furnace chimney, well above its own roof, but standing some eight feet in front of a flat wall of a higher building, had a patent revolving cowl, which worked a large fan screw inside. Usually, the harder the wind the stronger the up draught, owing to the increased rapidity of the screw. But in heavy south-westerly gales, which played flat on the wall, occasionally the depth of compressed air was sufficient to reach the chimney, and was driven right down the chimney, the fan screw working rapidly against it all the time. Nothing but great compression of the air could have done this. Much more in the case of a right-angled floor-board would the compression just at the angle be apt to be considerable.

With regard to (2), even if the top was nailed on and hermetically sealed the wind would force its way in. The power of gases, liquids, and solids in motion over those at rest is well known. Take the case of the common water-ram. A fall of 4ft. of water at rest would merely raise another column in the other side of the syphon to its own level of 4ft. But if once the down column of water is allowed to get in motion, it will, if suddenly checked, raise the other column to something like 70ft.

Take again the case of the common steam injector. The steam in a boiler has a pressure of say 100 lbs. to the square inch. Conduct a pipe from the top of this boiler, bend it downwards, turn it against its own side, where a valve is formed and is kept closed by the said pressure of 100 lbs. on every square inch of the surface of the valve: if the steam in the pipe is only liberated for a space of an inch so as to get into motion, it will not only force open the valve and enter, but carry in with it a quantity of water. And yet the dead pressure of the steam in the pipe is the same as that of water pressing against the valve.

What hope then can we have that the wind playing on the still air in the open entrance of the hive will not enter almost as if unopposed? The elasticity of the air inside will at best act as a pump, pumping backwards and forwards the cold air under successive blasts, and mixing rapidly with it. For in this case of a hermetically sealed hive, the air will, when the pressure is sufficient, regurgitate at the entrance; just as when a full bottle is held under a tap, and the water enters by virtue of the power which it obtains by motion, the still water is forced out. It is true it checks the incoming water a little, but it does not stop it at the entrance.

But what, if instead of a nailed airtight cover, there is a porous substance like mats, and a cover with holes, and only resting on the top by virtue of its weight? The law involved in the hydraulic press comes into operation. If a small half-inch pipe connected with a small hand pump enters one corner of the cylinder with a pressure of say 1 lb., there is exerted on the piston head as many pounds pressure as the piston head contains the superficial area of the little pipe. So that, if the air enters a hive with a pressure of a quarter ounce on a surface of a half-inch entrance, it would be able, if it was allowed to exert its full power, to bring the same pressure on every half-inch square of the mat; and, if the cover was closed and tight, it would do the same to it; that is, in the aggregate, a pressure of some 15 lbs., enough to lift it off and more. Of course, this never is fully exerted, because of the ventilation holes, the leakage at the joints, and still more the regurgitation at the entrance; but it is fatal to the hope that because there are thick mats and padded holes no wind at all would be able to enter.

What we are, I am afraid, obliged to expect takes place in the case of even a well matted hive in a strong cold wind is this: a plug of cold air at once overcomes the still air at the entrance, and enters, meeting with the perpendicular sides of the apex of the rebate in the floor board; some of it shoots straight up on the clustering bees; some is driven up sideways among the adjacent combs; the agitation is communicated necessarily to the whole air inside, and the whole temperature rapidly lowered. Should the blast last many seconds, the pressure is increased, and the mats are slightly lifted as the air struggles to pass through them; the air above rushes out of the ventilating holes, and should not sufficient escape take place, a regurgitation takes place at the entrance, and lastly, the cover is slightly raised, should the pressure increase too much to be relieved by the regurgitation, etc.

But it may be said (3) that if all this took place more colonies would have succumbed than have been noticed to do so. The article in the last number, p. 6, partly supplies the answer to this. It is there said, that without fatal effect, even to brood, the temperature can fall below 50°; and elsewhere, that wintering hives can be kept safely in a cold cellar at 28° occasionally, etc. Probably bees can sustain a very considerable amount of cold when clustered together. The outside bees are warmed from within, and the inside bees protected from the cold by the outside ones. But the question the writer has ventured to put before readers, is not whether bees can shift with their present ventilation arrangements, but whether ventilation and the regulation of the temperature of hives is *perfected*. And the same article quotes something *apropos* also of this. No less an authority than Mr. Root testifies to the fact that the most prosperous colony which he ever owned was one that was kept most thoroughly warm. His words are—"so completely enveloped in chaff, that they sent a stream of warm air out of their hives during frosty nights in March, etc." Whether

this was due to its accidental protection from winds, or to its careful envelopment in chaff, at all events it testifies to the value of great warmth; and would go towards inducing beekeepers to take every precaution to protect their bees against what the writer maintains must be the ordinary effect of cold wind on a hive, until experiments should prove that some extraordinary exception to the laws of gases in motion takes place in their case.

He cannot then but think that a jury of twelve honest and true British jurymen would return a true bill on the subject, and (leaving the question of and the objections to the conclusions on the internal ventilating power evolved by the heat of the bees to another number) will venture to suggest in the next number a series of experiments. After due criticism from others, he hopes that several New Zealand and Australian beekeepers, who have leisure and sufficiently accurate habits of observation, will carry them out on a *uniform scale*, so that every error or accidental disturbing element may be eliminated.

(To be continued.)

JOTTINGS.

BY LAHM DEARG ERIN.

IN last month's issue I note a short article on the proposed duty on imported honey; this I consider is another step in the right direction, and as the writer very aptly observes "not so much to protect ourselves in competing with *pure honey* of foreign production, but to check the importation of the cheap and spurious kind."

Now for a few notes gleaned on this subject which may be of interest to your readers. Honey essentially consists of water and sugar, and of the former water is found in varying proportions, sometimes from twelve to twenty-three per cent., but the normal proportion is from eighteen to twenty-one; when the percentage falls below eighteen, the honey is very hard and solid, and when higher than twenty-one it is frequently very clear, but the clearness and transparency of any given sample of honey does not always depend on the quantity of water alone.

Normal honey almost invariably gradually divides into two portions, a crystalline and solid one, and a syrupy one devoid of the power of crystallisation and rather sweeter than the solid portion. Chemically, these two dissimilar fractions are identical in composition, both containing particles of carbon, hydrogen and oxygen in the proportion six to twelve to six.

They are also identical in most of their chemical reactions, such as their behaviour to alkalis or to the solutions of copper or silver, but physically they possess very widely different properties. The crystalline portion, when examined microscopically with polarised light, twists the ray from its ordinary straight path to the right, and is on this account called dextrose; the liquid portion, when examined this way, twists the ray to the left, and has been named levulose. If dextrose or levulose be treated with an alkaline solution of copper sulphate a red

precipitate of sub-oxide of copper is thrown down; cane-sugar does not act in this way, but cane-sugar by treatment with acids readily changes, and is transformed into equal quantities of dextrose and levulose, precisely as they naturally occur in honey. Did honey, therefore, include cane-sugar as one of its normal constituents it would stand to reason that after treatment with acid the same weight of honey should throw down a larger proportion of the red sub-oxide of copper than before such addition of acid. This, however, is not the case. It is well-known that the sweet secretion of flowers consists principally of cane-sugar, and that therefore it must undergo some change before it is stored in the comb in the form of honey. Cane-sugar, as above pointed out, on being heated with an acid readily yields dextrose and levulose, but the bee cannot have recourse to such means. The change is brought about in this way. In all digestive processes which take place in the body of animals, certain solvent substances, ferments, are called into play whose function it is to dissolve those food constituents which are solid, and to alter others into such compounds as can readily be absorbed and brought into circulation. Thus, in the case of nitrogenous matter, the *pepsin* contained in the gastric juice readily brings them into solution; in the case of starch our saliva exerts a most powerful and almost instantaneous action. In the vegetable kingdom also, ferments are numerous; in fact, in all cases of digestion and of germinative growth, ferments are the most important solving agents. What acids are to the chemist, so are ferments to the living cell. An analogous change of a very simple nature converts cane-sugar of the flower in the body of a bee into the mixture of levulose and dextrose, which forms the bulk of honey; therefore honey is the result of the inversion, by ferment changes, of the natural sugar of the flower into the two sugars which mainly make up the product. Besides the two sugars found in honey, cane-sugar, milk, sugar, starch, and dextrine, all act in polarised light, turning it more or less to the right; but when treated with acids they undergo remarkable changes. They are all more or less converted into dextrose, with the exception of cane-sugar which, as above mentioned, yields both dextrose and levulose. Now the rotation to the left of levulose is greater than the rotation to the right of the same quantity of dextrose; hence, when mixed together in about equal quantities, as in honey, the polarised ray should be turned to the *left*. All other sugars turning to the right it follows that, whatever saccharine admixture is made to honey, the mixture on being polarised must be turned to the *right*, thus possessing perfectly distinct optical properties readily distinguishing it from genuine honey. This dextro rotation is especially marked in the case of starch and its congeners, and nothing is easier than to detect even a small admixture of starch sugars with genuine honey.

I note Mr. Hooker's painful experience of bee stings. When manipulating mine I generally have handy a small stoppered bottle of strong liquid ammonia, and when stung, after removing the sting, touch the part affected with a drop of the liquor,

which quickly allays all irritation. I have had as many as seven stings in as many minutes when handling hybrids, and as yet have never felt any bad effects. Sometimes in the beginning of the season, before I get properly inoculated, the parts swell when stung, but after a week's work amongst the bees I feel no further inconvenience.

I note J. R. M.'s query on page 8 volume ii. paragraph 4 with regard to longitudinal versus transverse frames. Let me suggest that by cutting a sloping way on the side of the floor-board and blocking the original entrance for winter, or *vice versa* for summer use, would not entail the extra expense of new floor-boards. I have been experimenting, by raising the mat off the frames with small bent wood slats, and to my surprise I find the bees cluster under the mat instead of lying snug between the combs, yet the entrance to the hive is at its usual narrow winter limit.

I see you mention the "Wiley lie" re honey comb being made and stored with glucose artificially. It is a wonder to me that the perpetrator of this "scientific pleasantry" was not kicked out of his Government berth long ago, and tarred and feathered into the bargain, and then put in an asylum for idiots. I did hear some two years ago of some American apiarists who fed their bees largely on glucose syrup, and that it was stored into the sections by them when the lower frames were full. There may be something in this, but I did not pay much attention to it.

I hear that two apiarists in this district have sent direct for a shipment of Carniolan queens, which are expected to arrive about the middle of October. May their venture be a success which I sincerely hope it will, "FOR IN THE GRAND LEXICON OF OUR ART, THERE SHOULD BE NO SUCH WORD AS FAIL."

HIVE VENTILATION.

BY W. C. BROWN.

THE subject of hive ventilation that has appeared in the last few issues of the *Journal* must have proved very refreshing to many readers; in fact, it seemed almost a necessity to clear the foul-broody atmosphere that the *Journal* has been enveloped in for a few months back.

I think we all assent with J. R. M., "there is no apology necessary for urging that the ventilation should be considered on scientific principles," for is it not on these principles, and on these alone, that every progressive move in all things natural that we put our hands to, must be made? And further, I'm sure we are all thankful to your and our esteemed correspondent, Mr Mulvany, who seems to so well weigh his ideas before penning them for reminding us as to "how desirable it is to excite inquiry, and seek to obtain reliable observations of facts as the groundwork of any correct theory." So just here, in connection with the subject of hive ventilation, I would like to bring before your readers' attention one or two facts.

The first fact that I observed in modern bee-hive construction—eh! I mean ancient styles too!—was the ventilating holes in the *tops* of the hives, ensuring a direct or indirect draught through the hive, and in some cases through the cluster. My second

fact is, that, given access to resinous matter, I have invariably found that every normal colony of bees will *completely* stop this upward draught—or ventilation, if you prefer the term—by stopping, plastering and varnishing every way of access for both air and moisture other than through the entrance which, in nine hundred and ninety-nine cases in a thousand, are at the bottom. I have also observed in this that there has been a sort of warfare continually waged between the modern beekeeper and the stupid, ignorant (?), propolis-ing bee.

A third fact is that, having been allowed to stop *all upward* ventilation, and under ordinary circumstances sufficient not coming in at the entrance, ventilation is secured by a *few* bees being told off to perform ventilating duties with their wings.

Now, then, friends, putting these few facts together, do you not think that, if we want to assist those little air-fanners we ought to go carefully alongside of them and direct our attention to where they are operating *at the entrance below the brood chamber?*

Do you know I have often thought that our scientific (?) system of ventilation is at fault in that the windows are opened at the top, or the ventilators of whatever kind are placed in the top of the walls or ceiling, keeping our heads in an atmosphere twenty or thirty degrees hotter than our feet, preventing us acting up to the scientific axiom of "keeping our heads cool and our feet warm." Of course I am not now thinking of a draughty window and our feet toasting at the fire. I think that not only have beekeepers, but perhaps the scientific world, much to learn from little *Apis M.* Who amongst us would have concluded that a hollow column would sustain a greater strain than a solid one, but for natural demonstration in the heavy burden a stalk of wheat will sustain?

I know I shall be told that heated air rises, and that therefore we ought to make our ventilation at the 'op. But is it heated air that we wish to get rid of? Is it not the carbonic acid gas that we wish the bees are desirous of getting out of the hive? and I wish not to offend any in reminding them that this is heavier than the ordinary atmosphere. So may we not rightly conclude that our little friends know best what they are about by working away at the entrance?

Oh! but some say, what a waste of energy those fanners standing at the door when they should be away getting nectar! Surely, friends, you who make this comment are not serious! I've often heard it, but really is it not absurd? What is the percentage of fanners to the whole population of a populous colony? I suppose that forty or fifty at the utmost is the number employed.

I am just informed that the mail closes in a minute or so, so I must reserve for a future occasion any further remarks I may have to say on this subject. In the meantime I hope the friends will thoroughly bottom this subject, for it is of the utmost importance to us and thousands of colonies of our *proteges*.
Dunedin, July, 1888.

[We trust our friend will not fail to give us all the assistance he can to get to the bottom of this and the equally important subject—"marketing honey."—ED.]

BEE GOSSIP.

BY O. POOLE.

THE HEDDON HIVE.—The Rev. L. L. Langstroth has written a very able article on this hive, of which he expresses a very high opinion, in a late number of *Gleanings*. And, whilst bitterly complaining of the way in which he himself was robbed of the legitimate fruits of his own invention years ago by unscrupulous beekeepers, says: "I feel it a positive duty to use what influence I have among beekeepers to secure for Mr. Heddon both the honour and the profit to which he seems, not only to me, but to so many of our best apiarists at home and abroad, to be fully entitled."

* * * *

After discussing the many advantages of the hive, the rev. gentleman concludes: "I would, therefore, not be afraid to risk my reputation for sound judgment as to the great value of the forward step which he has taken, even if I did not know that my opinion accords so well with the experience of many who have had the opportunity to put the hive and system to the test of practical use." This, indeed, is high praise from the original inventor of the frame hive.

* * * *

PROPOSED LIFE ANNUITY FOR FATHER LANGSTROTH.—It is with much gratification that I clip the following from one of the American bee journals: "A movement is on foot to create a life annuity in favour of L. L. Langstroth. Those of our readers who have been benefited by his writings and inventions, and who would, therefore, be glad to contribute something yearly to the father of American beekeeping, should write to Dr. C. C. Miller, Marengo, Ill., U.S.A., for particulars."

* * * *

Your readers will remember that I called attention to this very matter some months ago through the columns of the *Journal*. I sincerely hope that the appeal now made will meet with the hearty response it deserves, not only in America, but throughout the whole bee world, for where shall we look for a beekeeper who has not in some way or another benefited by the rev. gentleman's writings and inventions? I trust that New Zealand and Australian beekeepers will come to the front in this matter. Perhaps you, Mr. Editor, would kindly take charge of any coin that may be contributed in these colonies.

* * * *

FOUL-BROOD.—A new cure for foul-brood has just been made public through the columns of the Luxemburgdan bee journal by a gentleman named Carl Schröter, and as the plan appears to be very simple, I think it deserves a trial at the hands of any beekeeper who has the misfortune to be troubled with that foul disease. His plan is to make a box of thin wood about four inches square and quarter-inch deep, closed at three of the sides; this box is filled with felt saturated with carbolic acid and tar of wood. The use of the tar is to stop the too rapid evaporation of the carbolic acid, which the bees would be unable to tolerate. The small box thus prepared is placed

under the frames, and the gentle evaporation of the gases prove fatal to the bacilli, but harmless to the bees. The rotten substance in the cells dries up and is removed by the bees. Previous to this treatment, however, the worst combs are removed and destroyed, and the rest sprayed with a disinfectant.

* * * *

THE BRITISH HONEY COMPANY.—I regret to announce the winding up of the British Honey Company, which was calculated to do much good amongst a certain class of beekeepers by finding a ready market for their honey. Its demise, however, will have little effect upon the English honey market; an English apiarist can always dispose of his honey if he will only take the trouble to put it up in neat packages and "look up his customers."

* * * *

PREVENTING PROPOLISING.—Many of your readers have doubtless been often annoyed, during the manipulation of hives, by the way in which the ends of the frames have been fastened by the bees to the sides of the hive, making their removal often a matter of difficulty, to say nothing of the jarring of the hive and consequent irritation of the bees. A little vaseline rubbed on the ends of the frames, and on the undersides bearing on the two tin supports, is said by Mr. S. Abbott to entirely stop propolisation.

* * * *

DO BEES FROM OTHER HIVES JOIN A SWARM WHEN ON THE WING?—Such was the question propounded to me by an esteemed correspondent a few days ago. In my opinion they often do. Bees returning from the fields and having to pass through a flying swarm, are frequently seized with the swarming fever or mania, and instead of returning to their own hives, join the swarm. I have frequently found black bees in a Ligurian swarm, and *vice versa*. Perhaps some of your readers keeping two races of bees will make a note of this during the next swarming season.

* * * *

BEEKEEPERS' VOCABULARY.—A capital glossary of technical and scientific words used in beekeeping has lately been commenced in the *British Bee Journal* by Mr. Cowan. The derivations are given from the Latin, Greek, and modern languages, and the work when finished will not only prove interesting, but a most useful work of reference to apiarists, when I hope to see it published in book form.

* * * *

INTRODUCTION OF HEATHER.—I notice that the Americans are endeavouring to introduce the Scotch heath or heather, and I see no reason why a similar attempt should not be made here. Heather honey is not only justly renowned as being one of the most delicious in the world, but the heath being a late flowering plant, yields the beekeeper a second crop of honey in the autumn. It is also useful for many purposes. In Scotland it is used for, and makes a most durable thatch; large quantities of it are also used in the manufacture of brooms and brushes. Planted in bogs it soon helps to reclaim the land by assisting in the formation of peat, and from a

sportsman's point of view, where heather abounds that noble bird the grouse is almost sure to do well. Our Acclimatisation Societies would do well to plant a few acres of our waste lands with heather, and import a few brace of grouse.

[We are quite willing to take charge of and acknowledge any subscriptions that may be sent in aid of Father Langstroth.—ED.]

Report.

THE HONEY SEASON, 1887-88.

BY T. J. MULVANY.

THE past honey season has been a peculiar one in many respects. It may, I believe on the whole, be designated as the most unfavourable which has been experienced since bee-keeping became a special pursuit in New Zealand, and it followed directly after what has been represented as the worst honey season known for many years in all parts of the northern hemisphere. It is worthy of remark that both here and in other countries very different results seem to be obtained in districts not very far separated, and where we may fairly assume that the average skill and attention shown by the apiarists is much the same in each; and it is therefore to be regretted that beekeepers in general are not more liberal in communicating the result of each year's operations, whether successful or the reverse, as the study and comparison of such authentic reports could not fail to be both interesting and instructive.

While cases are reported in the *Journal* of average takes of 120lbs. of extracted honey per hive at Taranaki, 105lbs. at Christchurch, and even 275lbs. per hive in New South Wales, I have to record a complete failure in the way of produce for our own apiary and for all others in this district which are worked for extracted honey. Not that there was no surplus honey collected by the bees during the season—many people who keep only a few hives for household use and take their honey in sections, or cut out of frames in which the bees build their own comb during the season, took a very fair quantity of honey in that shape; but nearly all the honey stored was so thick that it was quite impossible to extract it in the ordinary manner, and experience having shown that, in the present state of the honey market, it would not pay to attempt obtaining the honey in an inferior condition by scraping or melting the combs, nor to make use of the ingenious but expensive machine described by Mr Cheshire "The Raith Honey Press," we were forced to put by the full combs of capped honey as a reserve for winter feeding and for stimulating weak colonies and new swarms next season.

At Bay View Apiary we had wintered 67 stocks, which were reduced, by uniting in spring, to 59. The number was afterwards increased to 73 by swarms hived in November and December (the swarming season commencing unusually late), and of the 14 swarms so utilised only 5 were from our own hives, as we worked to keep down swarming and to get the stocks into a strong working condition. Nevertheless, none of them were fit for supering until the beginning or middle of December. The first extracting took place on the 29th of that month, between which day and the middle of January we took only 418lbs, and then gave up all further extracting for the reason already stated, though most of the supers were full of capped honey. We kept the hives supplied with additional supers and frames of comb, and watched for any opportunity of extracting, but all the honey collected in the latter part of the season was also too thick and had to be left in the combs. We are now wintering 71 stocks, with the hope of "better luck another time."

Now, having profited so little in a material point of view from the past exceptionally bad campaign, can we turn it to

any account to increase our knowledge of the causes which operate to produce good or bad honey seasons? Ever since I commenced to take any interest in beekeeping I have endeavoured to trace a connection between the atmospherical phenomena and the more or less abundant secretion of nectar in the plants from which the bees procure their chief supplies. For this purpose I have noted for each year the meteorological observations made at the Auckland Observatory, in a diagram form, showing the mean temperature and the amount of rainfall for each month, in a way which brings before the eye the characteristics of the different seasons (in these two respects), and greatly facilitates a comparison of one year with another. On comparing the diagram for 1887-88 with those of the two worst honey seasons previously recorded (1883-84 and 1884-85) it is at once apparent that all three are very similar in a great deficiency of the mean temperature, especially in the three summer months, and in that respect contrast strongly with 1885-86, the best season we have had, when the mean temperature of the months of January and February, for example, was as much above the normal average as that of this year was below it. As to rainfall, the three summer months of last season show the lowest amount on record (only 3.9 inches as compared with 9.5 inches, the normal quantity for these three months), and may therefore be classed as cold and very dry; while it appears that the favourable characteristics are warmth and moisture, but not so much wet as to interfere with the working of the bees. In the good season, 1885-86, there was a dry spell from middle of November to latter end of January, accompanied with warm temperature favourable for dewy nights; but last season, during the same critical period, there was perhaps three times as much rain, though still less than the normal average, but with cold nights; and the driest spell was in February and early part of March, but then also with exceptionally low temperature. The mean temperature of the three summer months (December to February) of last season was $3\frac{1}{4}$ degrees (Fahrenheit) below that of the same period in the good season of 1885-86, and $2\frac{3}{4}$ degrees below the normal average. When we consider that the whole difference between the normal winter and summer temperature is only $13\frac{1}{2}$ degrees, it will be easily seen that such a deficiency as that of last summer must be sensibly felt.

But what is the cause of the honey becoming so thick as to be unextractable? We used to think it was owing to the plants from which the nectar was obtained, and the phormium tenax was generally credited with being the chief source of it in this country. The honey stored from that plant certainly does seem, as a rule, to possess the characteristics of the Scotch heather honey, as described by Mr Cheshire, being "for the two or three days following gathering, extremely limpid, dropping on the slightest jar from the comb, if the latter be held in a horizontal position;" yet becoming, when ripened, "so gelatinous that the contents of a single cell, if successfully removed, will retain its hexagonal form," and this, he says, arises "apparently from the presence of one or other of the pectose group of bodies allied to avabine." How this may be with phormium honey I cannot say; but it is quite clear that the thick honey stored during the whole of last season, and during a part of the season 1883-84, was obtained from other sources, which in ordinary years give a honey quite easily extracted. It would appear then that a cold and dry state of the atmosphere is in some way connected with this very undesirable state of things; but it is not improbable that the electrical condition of the atmosphere may also exert an influence in a way at present unknown to us.

Another question worthy of consideration may be raised. Is there any, and what, connection between the general character of the seasons in our southern hemisphere, and that of the last preceding or next following corresponding seasons in the north? It would seem as if our summers partook of the nature of the last preceding northern summer, for I think it will be found that the best honey seasons in Europe and in North America have been followed six months later by our best honey season here, and so also with the bad or unfavourable seasons. If this should be confirmed by observation of many years, it would not be without value to Australasian apiarists to be able to predict with tolerable certainty, six months before the arrival of their active working time, what sort of a honey harvest they might then expect to have.

Correspondence.

[These columns are open for the discussion of all matter connected with Apiculture, but the Editor does not hold himself responsible for the opinions expressed by his correspondents, who will please give their name and address, not necessarily for publication. When referring to any previous communication, please quote month and page.]

HELP FOR THE JOURNAL.

TO THE EDITOR OF THE AUSTRALASIAN BEE JOURNAL.

DEAR SIR,—I will most willingly follow suit to Mr. Mulvany's initiative and take two copies of the *Bee Journal*, for at least one year. It is but just that we should help you, if you help us, and I hope others will follow the "preaching" and "practice" of Mr. Mulvany. If self interest is to come into the matter, it should be borne in mind that one reason why the supply is usually in excess of the demand, is because the demand is not yet what legitimately—from a "food" point of view—it should be. Every new scientific beekeeper is apt to encourage the consumption of honey, and nothing but a bee journal will enlist new recruits in any satisfactory and permanent way.—Wishing you all success, yours faithfully,

J. R. MADAN.

Matata, July 6th, 1888.

[We have to thank our esteemed correspondent for his very kind and considerate help as a valued contributor and a subscriber.—ED.]

NOTES FROM NEW SOUTH WALES.

TO THE EDITOR OF THE AUSTRALASIAN BEE JOURNAL.

SIR,—Many thanks for your replies to the remarks contained in my letter of May last. I have just finished reading the June number of the *Journal*, and am sorry to see that it has not been a financial success so far; I sincerely hope that at the end of the next volume there will be a more satisfactory tale to tell. It appears to me that there is such a friendly, chatty, and inviting style about the *Australasian Bee Journal*, that it should arouse a fair amount of enthusiasm among those even who are not beekeepers, and should inspire them with a desire to keep and study those interesting little creatures about whom so much good can be said, and whose habits and powers take so many pages to describe. I consider also, that apart from its industrial and technical value, the *Journal*, as containing merely pleasant reading, is well worth a perusal, and I take every opportunity of letting any friends see it in whom an interest in bees is likely to be excited. It is difficult, however, to arouse any active interest in anything which is not presented, as it were, at their very doors, and I think, therefore, that if the *Journal* were procurable at the establishment of some bookseller in Sydney, a better demand from this colony might result. But this is merely a suggestion, to be considered for what it is worth. I have lately visited two private gardens in the suburbs, where bees were once kept, but now the apiaries are in a sad state, the box-hives rotting and falling to pieces with the bees in them. In one place, out of thirty boxes only two were tenanted, the bees having been driven out of the others by the ravages of the bee-moth. All betokens the most utter neglect. The owners of these hives are afraid to go near them, one man walking towards them backwards with his arms round his head. He loses all the swarms that are thrown off, and never gets an ounce of honey. He once had the courage to see what a hive contained, by upsetting it with a pole and scooping out the contents with a long-handled spade, but in his ignorance he chose a wrong time of the year, and got nothing but grubs, and combs, and a good many stings, the recollection of which last has caused him to forswear any sort of connection with bees. Such barbarity makes one condone the crime of the appreciative thief who robbed him of half a dozen swarms, boxes and all.

My bees are settled for the winter in a two-story Langstroth, and have filled up all the chinks with propolis. We have had an exceptionally dry winter so far, and flowers have not been visible anywhere for weeks past, consequently I have

been congratulating myself upon having refrained from taking any honey from them, since they began to store late; and as I am only beginning my experience I determined to leave them all they made for the first season. They appear very well and strong, and even when there is a cold west wind blowing they venture out, evidently intent on business. I picked up one on the road one day, some distance from home; a slight rain was falling, and it was quite numb, so I carried it for a few minutes until it recovered, when off it started straight home, and thus I knew that it was my bee.

Following the advice in the *Journal*, I am not meddling with the hive this month; but I am a little uneasy at the sight of the bees gnawing away at the entrance, evidently endeavouring to enlarge it; I fear that perhaps it is too close and hot, especially as in the middle of the day they gather round and fan briskly. I shall, therefore, examine the hive on the first still, warm day. I think that I am justified in expecting a good swarm early in the spring—August or September perhaps, especially as, on the whole, we have had a mild winter, and the native flowers are already beginning to bloom. The following device for catching swarms, and preventing them from flying off, I have read of in a publication called *Home and Farm*. It advocates the preparation of a few empty nail kegs to represent miniature hives. These are to be fastened in the trees round about the apiary, and it is said that they have proved of great service in attracting swarms in cases where the beekeeper is unable to be in constant attendance. I have noticed a similar idea mentioned in the July number of the *Journal*.—Yours faithfully,

MOEWE.

Manly, 10th July, 1888.

[Many thanks for your kind remarks anent the *Journal*. We shall be very glad to send a few extra *Journals* to any of our contributors for distribution among their friends who take an interest in beekeeping. We formerly sent *Journals* to Melbourne, Sydney, and Adelaide for sale, but we expect very few saw them. Decoy hives sometimes catch a strong swarm.—ED.]

Queries and Replies.

QUERY.—*Wax Cloth Mats*.—Please answer the following: Do you consider waxed cloth a good material for mats, or should the material be porous?—H. H.

REPLY.—We have experimented with non-porous mats and discarded them in favour of porous material which we have a decided preference for.

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As we have a number of spare copies of each issue of the *Journal* (with the exception of the first, which is now out of print), we will send post free to any address in Australasia the eleven numbers of Vol. I. for 4s. This is a good chance for new subscribers to get the *Journal* from the start.

There are also a few copies of Vol. I. of the *New Zealand and Australian Bee Journal*, cloth bound, still on hand, which will be sent post free in New Zealand for 3s., or out of New Zealand for 3s. 6d.

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