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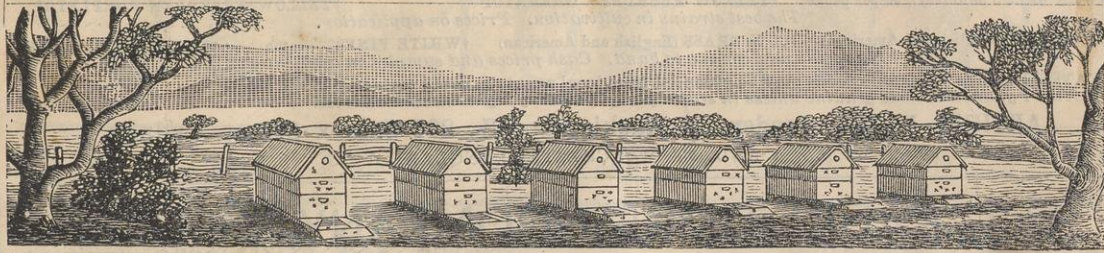
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BEE JOURNAL



No. 8. Vol. II.] AUCKLAND, N.Z., FEBRUARY 1, 1889. [PUBLISHED MONTHLY SIXPENCE.



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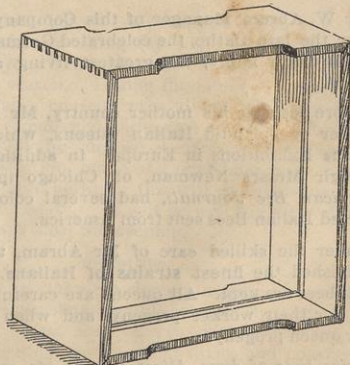
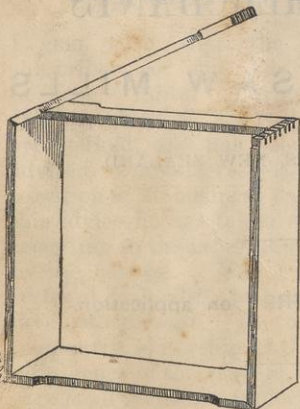
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THE AUSTRALASIAN

BEE JOURNAL

No. 8. VOL. II.] AUCKLAND, N.Z., FEBRUARY 1, 1889.

[PUBLISHED MONTHLY
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The Australasian Bee Journal.

PUBLISHED MONTHLY.

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Editorial.

SEASONABLE HINTS FOR FEBRUARY.

THE swarming season is now practically past, and the endeavour should be to take what surplus honey there may be during the next three or four weeks, taking great care to work cautiously so as not to leave the bees short of food should the honey flow suddenly cease. Those working sections should look out to have as few unfinished as possible at the end of the season. Instead of replacing full sections taken away with empty ones it will be better from this time forward to either place the full ones at the sides of the hive and the partly finished ones in the centre, or remove the whole of the sections together and join all the unfinished ones to one or two of the strongest colonies. For instance, supposing there are, say, ten hives working sections and two-thirds of them are ready for taking away, then, instead of filling up with empty ones when the season is drawing to a close, it is a far better plan to give all the partly filled ones to three or four colonies and put surplus boxes containing ordinary frames of comb on the others. As fast as the sections are being finished in the three or four hives these can be removed and the others given to one or two hives, and so on. In this way

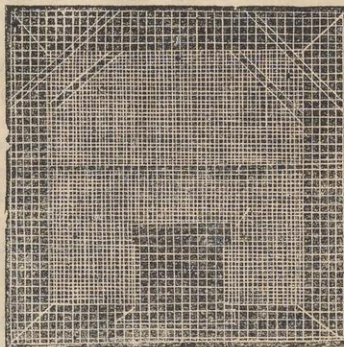
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ILLNESS OF THE EDITOR.

I FEEL sure that the sympathies of every subscriber to the *Journal* will be accorded to the Editor during his illness. Mr. Hopkins has of late been greatly worried and overworked, and has been ordered by his medical advisers complete rest and change, and a total cessation of all business engagements. Acting on this advice he has taken a trip to the South, and according to the latest news received, is benefited by the change. May he soon return perfectly restored to health, to guide us once more in our favourite pursuit. In the meantime, during my temporary editorship of the *Journal*, I crave the indulgence of the readers thereof, asking them to excuse all faults and imperfections, and to assist me in my task by every means in their power.

O. POOLE.



We have been able to get all but perhaps a dozen or so completely finished when working for comb honey extensively, instead of having your hundreds of unfinished ones on hand at the close of the season. During the month there is often a scarcity of bee forage, consequently all manipulation in the apiary should be conducted with great caution. During the removal of combs for the purpose of extracting use a bee tent, as seen in the illustration, made of a light framework of wood covered with mosquito netting; this will enable the necessary work to be done in safety. It will be well to defer returning the extracted combs until the evening.

ROBBING

often results in the complete demoralisation of the apiary, consequently every means should be used to stop it in its incipient state. Never leave honey or bits of honeycomb lying about where the bees can get at them, and contract the entrances of all colonies as much as possible, especially weak ones. Robber bees may be usually detected by their manner

of approaching a hive. Instead of flying straight for the entrance, they seem to hover around as if shy and timid of venturing to enter, and are frequently seized by the sentinel bees guarding the doorway.

Care should be taken that extracted honey is thoroughly ripened before the tins are permanently soldered down. Honey that does not immediately granulate may be left for a time in the extracting can to allow the air-bubbles to escape, and the scum to rise to the top before being run into the smaller tins for market. Several appliances have been devised in America and England for the purpose of ripening honey by artificial heat, notably one by Mr Cowan, editor of the *British Bee Journal*, but they cannot be recommended for this country. Don't attempt to extract unsealed combs; it is often apt to ferment, and a little unsealed honey will often spoil a large package.

Queen rearing may still be carried on before the drones are killed off. If a colony is made queenless before this takes place, the drones in that particular colony will not be killed, and will therefore be available for impregnating the young queens. In this way pure mating can be secured.

A good lookout should now be kept for queenless hives, which should be at once re-queened or joined to another hive. Weak stocks are hardly worth the trouble of wintering, as in nine cases out of ten the result is a failure. The great secret of successful beekeeping is to have strong colonies in the spring headed by young and vigorous queens, and to ensure this it is well to take a little trouble and see that they go into their winter quarters in proper condition.

Buckwheat sown last November and December should now be in bloom, and yields a considerable quantity of honey, although it is sometimes dark in colour. Still, that does capitally for winter feed. A short time ago the editor of the *Canadian Honey Producer* reported 10lbs. of honey in a single day from buckwheat. We should imagine that the climate of New Zealand would be very suitable for the cultivation of this plant, the grain of which is exceedingly useful for many purposes, poultry are especially fond of it.

THE PROPOSED CHANGE IN THE JOURNAL.

WE have only received the opinions of five of our subscribers as to the proposal to add a poultry department without increase of cost or decrease in the space at present allotted to bee matter. As we before stated the matter rests entirely with our subscribers, and we ask each one of them to let us have his opinion before next month.

Mr Thomas Awdry writes:—'As to the proposal to add to the *Journal* I say do so by all means so long as bee matter does not suffer in consequence.'

Mr J. Mulvany writes:—'The idea about the change in the form of the *Journal*, so as to make it a bee and poultry journal, appears to me to be quite unobjectionable if you have reason to think that it will increase the circulation and the income from advertisements, without a corresponding increase in the cost of publication. Most beekeepers will, no doubt, take more or less interest in the poultry question, and the most exclusive could not well object to the enlargement of the *Journal* without any part of the portion devoted to beekeeping being curtailed, and without an extra charge for subscription. The main point with me, I confess, is to see the existence of the *Journal* as an organ for the beekeeping industry secured, which must be doubtful with the small share of support obtainable from the beekeepers pure and simple; so if the poultry fanciers will do their part to assist, by all means let us join, say I.'

Mr R. D'Oyley writes:—'I am in favour of the proposed change.' The opinion of our esteemed

correspondent, Mr G. A. Green, will be found in another column.

'Lamh Dearg Erin' writes:—'On page 100 of last number I note that it is proposed to enlarge the *Journal*, and to devote a certain portion of its pages to poultry culture, the subscription at the same time being the usual 6s. per annum. The editor has courteously asked subscribers to state their views on the subject. For my part I must say, that if the editor likes to enlarge the *Journal*, so much the better for us *as long as apiculture takes the front rank* in its columns. Some might say "the *Journal* was started especially for beekeepers, and its columns to be devoted exclusively to apiculture, therefore let us have no interloping." To those who might think thus, I would respectfully remind them that though the *Journal* has been in one sense a literary success, on the other hand, it has not been so financially; and I think if the editor sees his way clear in getting a larger circulation for the *Journal*, we should not be the ones to say nay, but rather, to endeavour to do our best to carry out any of his ideas. Pluck and perseverance should always be recognised, and for my part he has my hearty sympathy and co-operation.

'The committee of the New Zealand Beekeepers' Association deserve the warmest thanks of every beekeeper, or, I should say, member of the Association, for the practical manner in which they have carried on the negotiations with the steamship companies and the New Zealand Railway Department in securing such liberal concessions with regard to those travelling to attend the convention.'

MARKETING OF ORDINARY EXTRACTED HONEY.

BY T. J. MULVANY.

In my remarks upon cheap packages for extracted honey, in the last issue of the *Journal*, I expressed the opinion that, in putting up ordinary extracted honey for household use, the limit as to smallness of the package must be determined by what may be fixed as the outside cost per pound of honey, which should be admissible in the price of the package itself; and I further hazarded the suggestion that, considering the price at which the honey must be sold in order to compete with sugar and with syrups, and taking into account all the charges to be incurred for packing, freights, and retailers' profit, "we can scarcely afford to allow more than one halfpenny per pound of honey for the tin." In the report of the discussion which took place at the meeting of the Executive Committee of the New Zealand Beekeepers' Association, upon the reading of my remarks, it is stated that "it was proved to the satisfaction of the committee that, taking into consideration the present cost of tins, crates, freights, etc., it is impossible to put honey on the market in anything less than 60lb. tins at one halfpenny per lb.; in 10lb or 12lb tins it would cost the producer at least one penny per lb."

From this it would appear as if my remark had been misunderstood, as meaning that the *whole cost of putting 10lb. or 12lb. tins on the market* should not amount to more than one halfpenny per lb. But it is clear that I was only speaking of the actual cost of the tin itself, as I added, "it has not been found practicable as yet to procure ten pound tins for 5s. per dozen, or £3 per gross," *i.e.*, for one halfpenny per lb. of the honey contained. It is further stated in the report that Mr Hopkins mentioned his firm was "prepared to furnish 10lb. honey tins, crated, and put free on board rail or steamer, at £3 5s. per gross." This at once meets nearly all that I look for, as the price per pound of honey of these tins would be only a very small fraction over one halfpenny. The report further adds, "and 12lb. tins at £2 14s. per gross." This, I presume, is a misprint; but if it means £3 14s. per gross, and if the tins can be made square so that ten of them would fit in the same sized packing case as ten round tins of 10lb. each, that would be everything that could be desired according to my view of the matter.

The report, however, also states that "after a lengthy discussion the committee were unanimous in their opinion that the best and cheapest method for beekeepers to adopt is to ship their honey in bulk to a central depôt (where one exists) to be tinned and placed on the market." Now I cannot suppose that this resolution was intended to be of such universal application as the wording of it, without considerable qualification, would imply. Surely it cannot be intended to recommend that all the apiaries in the colony, or in the North Island, or even in the province of Auckland, should send all their honey in bulk to one central depôt, to be there tinned and re-packed and put upon the Auckland market? If this were possible to be accomplished, even at a saving of cost to the producer, would it not be a most effective means of glutting and spoiling the market?

It appears to me to be one of the first principles in any well-organised attempt to encourage the general use of honey, that each producer should do his best to supply, in the first instance, the wants of his immediate neighbourhood, and of the towns and districts within a convenient distance of his apiary, and that he should send as little as possible of his surplus quantity to the central market, which, except for purposes of export, is pretty sure to be well enough supplied by the apiaries in its own vicinity. The matter appears to me to be of such importance to the general interest, which we all have at heart, that I make no apology for discussing it freely, even at the risk of seeming singular in an opposition to the expressed opinion of the committee, for which I entertain a great respect. The difference between us is, I believe, more apparent than substantial, and such differences are often very serviceable in bringing out the considerations suggested to different minds by looking at a thing from different points of view. In the matter now under discussion I have, for a long time, held such fixed opinions that I am anxious to have them clearly understood by my colleagues in the committee, and either confirmed or corrected by their mature judgment.

Before entering upon details I wish to narrow the question as much as possible by laying stress upon the point that the following remarks are to be taken as applying distinctly to the marketing of *ordinary extracted honey, for household and manufacturing uses, and in competition with sugar and syrups*, and not in any way to comb honey, or to fancy packages of white clover and other finer flavoured extracted honey in one or two pound tins, or in glass. I have already, on another occasion, given my reasons for thinking that the former must be treated upon entirely distinct commercial principles from the latter. I also wish to say, in reference to one passage in the report of the committee meeting, that the worthy secretary ought not to feel the slightest hesitation in putting forward his views for the reason he alluded to. No one who knows that gentleman, and the sacrifices he has constantly made for the advancement of apiculture in these colonies, will for a moment think that his advice could be biassed by interested motives. The rates at which his firm undertake the marketing of fancy packages in small tins, and of small consignments of ordinary extracted honey in 10lb or 12lb tins are, in my mind, surprisingly moderate, and I thoroughly endorse the opinion of the committee, "that the work could not be done satisfactorily at a lower rate." I believe further that the facility so offered to those producers, who are not in a position to do their own work in equally good style, is a real boon to them, and a great safeguard to the character of the local honey market. At the same time, I hold that, as regards the owners of the more distant important apiaries, they should (for reasons hereafter more fully stated) do their own packing in 60lb. and in 10lb. or 12lb. tins, that they should work up the sale of their produce as much as possible in their own districts, and that it is therefore of the utmost importance to them to be able to obtain their supplies of tins and packing-cases at their respective apiaries on the cheapest possible terms, to enable them to do which was the sole object I had in view when writing the last paper.

In pushing the sale of household honey no one, of course, will propose to use 1lb. or 2lb. tins at an extra cost of 1½d. or 2d. per lb. for the package. What grocer would think of trying to sell his sugar in such packages, no matter how attractively got up, at, say, sixpence per lb., instead of offering it at fourpence per lb. in a brown paper bag? I shall, therefore, only speak of the two sizes of tins already mentioned—the smaller to hold either 10lb or 12lb., and the larger 60lbs. of honey. The former size will, no doubt, for some time to come, be more easily disposed of than the latter, although necessarily costing the consumer at least one halfpenny per lb. more for the honey; but as soon as honey becomes, as it should be, an article of everyday use, no sensible housekeeper will continue to pay that extra price in preference to laying in a 60lb. tin at a time, any more than he or she would purchase sugar in small quantities at one halfpenny per lb. more than it can be got for in a 56lb. bag.

Now, as to the comparative cost of tinning at the apiary and at a central depôt. That is of

course mainly effected by the charges for the freight and land carriage of the full packages and the "empties." In this respect I suppose our position here at Bayview Apiary will not be found to be much more or less favourable than the average. We have to pay 15s. per ton, measurement, from Auckland to Tauranga, 10s. more from Tauranga to Katikati, and, say, 5s. more for land carriage to the apiary, in all, 30s. per ton. Supposing that we get the tins, as suggested by me, from Auckland, and in the packing cases, at half freight as "empties," and send the honey back to Auckland at full rates of freights, the total charges will amount to 45s. per ton measurement, or 2 $\frac{3}{4}$ d. for a case of two cubic feet, containing 100lbs. of honey in 10lb. tins, or 120lbs. in 60lb. tins. Adding the cost of tins and packing cases at present prices, the whole expense for packages, freights, etc., will come to about one penny per lb. for the smaller, and two-thirds of a penny per lb. for the larger sized tins. I do not at present see how any distant apiary could send its extracted honey in bulk, and in perfect condition, to a central depôt at less cost than in 60lb. tins, and there would clearly be no advantage, under such circumstances, in getting it there repacked into 10lb. or 12lb. tins at a new cost, even so low as three farthings per lb., which would make 1 $\frac{5}{12}$ d. per lb. in all, instead of doing it at once at the apiary for one penny. Besides, it must be borne in mind that the same expenditure for freights required to send the honey back to Auckland would place it, at the option of the producer, in almost any other seaport in New Zealand where he may find a market for it.

From the foregoing I conclude that, in the case of producers working upon a sufficiently large scale to make it worth while to order tins and packing-cases in large quantities, they should certainly be able to put up their extracted honey in 60lb., and in 10lb. or 12lb. tins at their own apiary, upon more reasonable terms than by shipping it in bulk, in any form, to a central depôt, to be there tinned and put upon the market. That being so (and even if it should cost them a little more), I am decidedly of opinion that the former is the proper course to be adopted in the interest of both producer and consumer, and consequently in that of the industry in general, for the following reasons:—

First.—Experience has only confirmed the view which I have long since expressed, that the proper place for effectually grading the qualities of honey, which vary in the course of the season at almost every location, is at the apiary; and the proper time, that of extracting and of filling the vessels or packages intended to be placed on the market.

Second.—Because, except in those cases where the honey can be delivered in bulk in a liquid condition, so that it can be simply tapped off into the tins intended for market, I am convinced that every process of heating or re-melting the granulated honey must be attended with more or less injury to its flavour.

Third.—Because it is of great importance that the full responsibility as to the quantity, grade, and condition of the honey in each package should vest with the producer; and this can only be

secured by placing it before the consumer in the original package attested by the label or trade mark of the apiary.

And Fourth.—Because in that way only is the producer placed in the position to effect the sale of his produce as much as possible in his own district, and in any convenient markets he may succeed in opening up; instead of sending all to one central point where the local market, however large, must soon become glutted, and from which the surplus will probably have to be ultimately transhipped to other places which might have been supplied, at the first cost for carriage, direct from the apiary.

Each of these four reasons might easily be enlarged upon and supported by what appear to me to be convincing arguments, which, however, I refrain from urging, as I have no doubt they will suggest themselves to the minds of those who are practically interested in the business.

A FEW FURTHER REMARKS ON FOUL-BROOD.

BY J. A. MORELAND.

I ONCE read in some work on beekeeping, that whoever found out some means of extracting the pollen from the combs would confer a great benefit on beekeepers, or to that effect, for the writer had pointed out that by bees of an infected hive visiting a flower and leaving a germ or germs of foul-brood behind it, another bee visiting that same flower might pick up the germs and, carrying it to its hive, store the disease with the pollen, etc. Now I, having destroyed a number of combs, and still having a few left on hand when the thought struck me to try and find out if it were not possible to remove the pollen by bringing the force of a syringe to bear upon it, and I by that means found out that water would soften it but not enough to remove it at once, so I filled the tub with water and tried to place these empty combs in the water, but found out that I had started the wrong end first, so I had to empty the water from the tub and place the combs in first, and weight them down, for my first trial cost me two more combs, having broken them. After placing these combs in the water the idea struck me that they might ferment, so to stop fermentation I introduced the salt. Now comes the subject whereon we want information. *Will the germs of foul brood exist in brine, or in other words, will brine kill them? That's what we want to find out, for I do not think there are many forms of animal or vegetable life that can exist in brine, if immersed in it long enough and the brine is of sufficient strength. In another work, Friend Dolittle tells us if you have bees in an empty hive they will not have the disease, unless they get honey from an infected hive. My version of this is that to cure the bees themselves you must keep them from their combs sufficiently long for them to have exhausted all stores that they took when shaken from their hive, and if their combs are infected you must eradicate the disease from the combs or destroy them. It is very clear that bees*

store the disease with either honey or pollen, or both, for if you set a colony down for wintering in a new hive without any visible sign of the disease, in the spring you will find it badly infected, as many as four of the centre combs being completely filled with it. Another evidence is that by removing these combs and manipulating so as to remove the others after what brood has emerged that will, the colony will apparently thrive, and perhaps scarcely show any sign of the disease during that season, but in the following spring being as bad as ever it was, thereby pointing most conclusively to the fact that as long as the bees can rear their brood on freshly gathered stores they are comparatively healthy, but when they have to fall back on old they then contract again this dire disease. I know that the idea runs in some minds that if the progeny of a queen shows signs of this disease at any time, that all her progeny ever after are infected, but I think the idea is entirely without foundation, for if you eradicate the disease from a colony you eradicate it from the queen as well, and as long as the queen can be fed on wholesome food by the bees so long will she remain healthy, and the descendants from her. Now, by removing all pollen stored in the combs, or by removing the combs towards the end of the season, we should considerably reduce the chances of the disease breaking out afresh, first, because the bees have to gather fresh stores, second, it is likely to be after diseased colonies have died out and their hives have been cleaned out by other bees (this applies to box hives); consequently then is the time that there should not be any germs left in any of the flowers, as there are no diseased bees to carry them about. I am glad to state that these combs I picked are not showing any further trace of the disease. Early in November I treated another, having these again after nine days off their combs on 13th November. The combs at this time were not perfectly dry. This was a strong colony; in fourteen days equal to about eight combs were laid out, and the brood is emerging apparently healthy, and this day are prepared to swarm, but I removed queen cells, and Monday will place on super. In answer to "Lahm Dearg Erin" I may state that this immersion does not improve the appearance of the combs and frames as it turns the wood very dark, but the bees appear to pull the cocoon from the combs in small pieces and rebuild what cells are damaged, thereby for strength placing them equal to a newly-built comb, built out in a super where no bees have been reared in them. They are very brittle when taken from the brine, but I use a wooden comb-holder, and when syringing them place the comb close against the back. My combs are nearly all wired, as they are stronger and there is not so much danger of breakage during manipulation. I see in the November number of the *Journal* a device invented by Mr C. B. Morris, of which I do not approve, firstly, because to apply it the hive has to be brought forwards on its bottom board, thereby enlarging the entrance when we want it closed (that is, with our construction), secondly, the bees have to climb up the face of Block D, which, in our hives would have to be close on three inches. I have sent you

a style that is in use by one of your subscribers here. The idea originated in the *Journal*. I think you will see that it is very simple, easily applied, easily removed, and can be modified to suit any construction in use. This one is made to suit the bottom board, as I use it with an entrance about one inch in width cut back sufficiently to allow the bees to pass out when the body is drawn back level with the back of the bottom board. I hope you will give your readers the idea and your opinion on it. Well, I think that's enough for once, so I'll stop it.

BEEOLOGICAL NOTES.

BY G. A. GREEN.

ALLOW me to congratulate you on the reconstruction of your firm, and I have no doubt that the change will be beneficial, like to yourselves and the beekeeping fraternity generally. If it is not altogether too late, I would wish you a very happy and prosperous New Year; and now, brother beekeepers, rally round friend Hopkins, assist and support him; it will pay you, and the honey trade will go merrily booming along.

* * * *

Ladies and gentlemen of the apicultural fraternity, are you coming to the big Convention? It is going to be a great success, and it will be to the loss of all beekeepers who do not attend it, for the Convention will be graced by the presence of apicultural giants, like Hopkins, Mulvaney, Poole, Stevenson, Blackwell, etc., together with priests, parsons, editors, M.H.R.'s and others, too numerous to mention. In fact, all who are in any way interested in modern bee-culture will be there. Reader, chip in with your presence and assist to make the thing boom. The Association Committee have a most interesting programme prepared. *Vide* last month's *Journal*.

* * * *

The Railway authorities and the Steamship Companies require the best thanks of apiculturists for the generous terms they offer to those intending to visit the Convention. The only way beekeepers can repay them is by taking advantage of the offers and attending the Convention in large numbers.

* * * *

On seeing the heading, "Bee and Poultry Journal," in your last issue, I lost no time in reading it, and my first impression (not being a large poultry man and having a lively recollection of the *Bee and Poultry Journal*, New York, and its failure) was that it would not do. But on re-reading and reconsidering the subject, especially your own views, having especial regard to the first, I have altered my opinion. If by combining the two industries together in one journal it can be made to pay its way without increasing the annual subscription, then, for my part, I say, go ahead, and a long, pleasant and prosperous voyage to the *Australasian Bee and Poultry Journal*. But take care that the roosters and drones do not get to fighting and trespassing on to one another's

grounds. You understand, friend Hopkins. Keep a good high fence between them, and then there will be no danger.

* * * *

That's right, friend Erin, it don't pay; and it don't do to give our valuable receipts away to ignorant bee owners; they are nothing more. If they want information let them pay for it; we had to do so, and that dearly, some of us. I guess it would be very appetising to eat some of the honey from these foul-broody hives!

* * * *

Jacks in office are we, eh! And what is Professor Aldis and his dear partner, if not Jacks in office? I always understood that public servants were expected to do their duty, and not interfere in matters that do not concern them in the least, or of which they are wholly ignorant. Professor Aldis and his wife are getting to themselves illustrious names, but for what? For their defence of the weak against the strong, for right against wrong? Ah, no! For trying to interfere with the rights of the public, for aiding the wrong and strong against the weak and the right. For this the Professor and his wife are becoming illustrious. As Burns would say:

Had they but the giftie gie um,
To see 'umsel's as others see 'um,
It wad from munny a blunder free 'um, &c.

* * * *

The method of queen introduction, mentioned by "J.R.M." in "American Notes," is identical with the plan recommended by me in the *New Zealand and Australian Bee Journal* some years ago. The conditions being right, I have never known the direct introduction of queens, whether laying or not, to be otherwise than most successful.

* * * *

I shall forward my report as soon as the season is over. It will not last more than a few days longer. There will be little more than half an average season's crop this year. The rata trees have been gorgeous with bloom the last few weeks but are nearly over now.

BEE GOSSIP.

BY O. POOLE.

THE CONGREGATION AND FLIGHT OF DRONES.—In last month's *Journal* attention was called by your esteemed correspondent, 'J. R. M.,' to some curious facts noticed by Mr Sherbourn in a communication to one of the American bee journals, during two successive seasons of the congregation of large numbers of drones in certain places, presumably awaiting the arrival of virgin queens, for the purpose of fertilisation. The incident was vividly brought back to my mind in passing through the Domain grounds, on Monday, Jan. 7. I listened for a long time to what appeared to me to be the loud humming noise made by drones when on the wing, and although I could only distinguish one or two, I presently felt convinced that the sound was produced by drones and not by other insects. There must have been many

thousands in the air, extending over a considerable area. Suddenly I heard a much greater noise, and, looking ahead, I saw a large body of drones flying in a compact mass of about a yard in length, and one foot in diameter, somewhat in the shape of a funnel, rapidly approaching as if in eager pursuit of some object. So quickly did they move that on arriving at a slight rise in the ground about twenty yards from me, about one half of the hindmost were precipitated on the grass. I rushed forward as quickly as possible hoping to find the queen, but only succeeded in capturing four drones unable to extricate themselves from the grass.

* * * *

These four drones were Italians, and Mr Hopkins is the only person who has Italians in the neighbourhood, and his apiary would be a little over a mile away, and singular to say there were many young queens in the apiary that would be due to take their flight about that time.

* * * *

Since that time I have again visited the same spot, and on fine afternoons have always found the drones congregating about the same locality. At Birkenhead, about three miles from Auckland, I have also discovered a place where drones congregate within a short distance of an apiary of about twenty hives. I shall watch these places and hope to be able to communicate more facts concerning the same, which go far, I think, to show that Mr Sherbourn's observations are correct.

* * * *

THE FOUL BROOD BILL AS OTHERS SEE US.—Commenting on the recent failure of the above bill, in *Gleanings*, Mr Root says:—

'It seems strange to us in America that legislation should be necessary to make the non-progressive beekeepers do what is not only to the interest of themselves, but to the interest of every lover of the honey bee of that country. Unless the Australian bee papers can do something to stay the ravages of foul brood in their midst, either by legislation or otherwise, beekeeping will make but little headway, to say the least. We sympathise with our foreign brethren of the craft in their efforts, and wish them success.'

* * * *

A SIMPLE QUEEN CAGE for safe introduction can easily be made by taking the side bar of a frame, and moulding round it a piece of perforated zinc. Now remove the wood and cut off two pieces about half an inch each in length, fix one piece firmly in the top part of the cage with tacks, and bore a small hole, through which pass a stout piece of wire about 2½ inches longer than the cage, and fix this firmly into the other piece of wood to form a moveable bottom. The cage containing the queen is pushed down between the combs through a hole cut in the quilt, and after being confined a sufficient time to become acquainted with the bees, is quickly and gently released without the least disturbance. The cage should not be removed until next day. During the present season I have used this method of introduction with great success; of course, it is a cheap modification of the Raynor and Abbot cages.

* * * *

Several items of Gossip are held over until next month.

ENGLISH BEE JOURNALS.

By J. R. M.

IN the October (1888) number of the *British Bee Journal* we have a paper by Mr Grimshaw on the sting of the worker bee. It had occurred to him, that the almost certain death of a worker bee, when using what is commonly reckoned as its true weapon of defence against death, pointed to something else as its original and proper use. The worker bee being an undeveloped and therefore imperfect queen, is there anything in the queen bee, where everything is presumably perfect, to throw light on the matter? Are there any other insects, with organs like the bees sting, which use them for other purposes than self defence? If either of these questions can be answered affirmatively, can we find an adequate object on the part of the worker bee for using its beautifully constructed sting otherwise than in a fatal act of self defence?

To this question an answer which will probably stand the test of subsequent observation is given. First of all (taking the second question first), we have the fact that other insects have an organ (very similar to the sting), which is obviously a true ovipositor; and yet (what is very much to the point) that they occasionally use it as a sting, 'depositing in the wound a quantity of corrosive poisonous fluid similar in its toxic properties to that pumped under the skin by the bee.' If then the worker bee is an undeveloped female, can it be that her sting is properly an ovipositor, or had some use directly connected with ovipositing, and was only *per accidens* used in self defence? If so, as she cannot lay eggs (ordinarily), is there any kindred work for her to do, which brings into operation her most elaborate organ in a constant and adequate way?

Turning to the queen bee we find that although she has a beautifully formed sting, she never ordinarily uses it in self defence either against the attacks of men or workers; in fact only in the rare event of a queen fight. For what then is her sting? Does she use it in other ways? Mr Grimshaw finds that the poison of the sting acts as a solvent to wax, and with it creates a sticky substance. He surmises that the queen, in the process of egg-laying, feels with the delicate palpi on the sting for a suitable place on the bottom of the cell, scratches a groove in it, exudes a little poison, thus creating a sticky snug resting-place for her egg. Here then we have all the beautiful machinery of the sting of a perfect female bee in constant use—the palpi, the barbs, the razor edge, the poison canal, the pump, the poison itself.

Now, as the undeveloped female has no egg-laying, *cui bono* the perfection of her sting? Why should it not be undeveloped, as her other generative organs? Why so perfect that the perfection of the organ causes (one may say) ordinary death, when attempting to shield off death? Mr Grimshaw answers, 'The worker's sting then may be a tool used for macerating wax by the aid of the secretions upon it, a moistening gum like secretion being all the while pumped out through the openings in the rear of the bars by each muscular movement of the darts, the palpi of the sting being used as a brush or spreader of the acid secretion—our bees perhaps diligently working when we have been crediting them with the idleness of wax secreting.' He refers also of course to Müllenhoff's theory of the introduction of some of the poison into each cell of honey to act as a preventive of fermentation, an act wherein the saw-like edge of the sting may be of special use if introduced just after sealing.

In the review of Professor Cook's *Beekkeepers' Guide*, the reviewer quotes with approval (among other things) the following conclusions of that eminent apiculturist: (a) that the antennæ are organs of smell, a 'many-nucleated ganglionic nerve' being reached by a tiny canal, the bee thus readily finding nectar, and drones their mates; that they are organs of hearing is not yet proven, nor has the ear yet been found, although certainly they are conscious of sounds; (b) that the eyes are each perfect like ours, and do not act according to the 'mosaic' theory; (c) that the queen and drones are usually fed with the same food as the larvæ, *i.e.*, with 'digested pollen or chyle, modified as the bees desire, by

varying their own food.' The use of the glandular organs of the queen and drones is for those rarer occasions when they eat honey, instead of the already digested food. A queen will lay nearly double her weight in eggs daily, and hence without the aid of highly nutritious and already digested food could never stand the draw on her system; (c) that the piping of queens is a 'true voice made in the cells;' (d) that very probably much honey is not fully digested by bees; that this with possible variation in nectar makes analysis by re-agents and the polariscope very difficult and uncertain; (d) that exact hexagonal cells rarely if ever exist, and that a variation of even one-fifth of an inch in ten cells is found, one-tenth being common.

Belgium consumes a much larger amount of honey than she produces, and thus another market is open for those countries that have a surplus.

Occasional Notes.

No. 6.

BEES AND HONEY WITHIN THE TROPICS.

(Continued.)

By T. J. MULVANY.

IN all parts of tropical Africa honey is found in abundance, and is largely used by the natives as an article of food, and in the preparation of mead, or honey wine. Livingstone's first expedition in Southern Africa occupied him from 1849 to 1856, and his second from 1858 to 1864, and in his published descriptions of both expeditions we find frequent allusions to the very general use of honey among all the tribes visited by him. It is mentioned everywhere among the stores of food furnished for the traveller by friendly chiefs, is prominent at all entertainments, and one of the articles received as tribute by the head chiefs, or petty kings. Livingstone gives numerous extracts from his diary like the following: Near Kolobeng, on the Zambesi, the chief Sebituane "presented me with an ox, and a jar of honey, as food." The same chief, when hospitably entertaining poor natives of other tribes passing through his territory, "would order an attendant to bring meal, milk, and honey, and make them feed, perhaps for the first time in their lives, on a lordly dish." Another chief, Sekeletu, when furnishing him with provisions for a journey, to a good supply of maize "added ten or twelve jars of honey, each of which contained about two gallons" (320 lbs to 340 lbs altogether). Ascending the Leeba River he notes: "Beautiful flowers abound, and we found plenty of honey in the woods, and saw stages on which the Balonda dry their meat when they come down to gather the produce of the wild hives." "On the evening of the day in which Manenko (a great female chief) arrived, we were delighted by the appearance of Mosantu and an imposing embassy from Masiko. It consisted of all his under chiefs, who brought a present of a fine elephant's tusk, two calabashes of honey, and a large piece of blue baize." The ordinary food of the natives consists largely of a sort of porridge made of pounded *manioc*, which is rather bitter. Livingstone says: "It is both

unsatisfying and unsavoury. . . . I can only compare it to starch made of diseased potatoes. We managed to eat a little of it mixed with honey ;" and speaking of the pulp prepared from the mosibe bean he also says : "It requires the addition of honey to render it palatable."

Stanley, in his book, "How I Found Livingstone," in 1882, constantly mentions honey as met with nearly everywhere between Zanzibar and Lake Tanganyka. At one place, he says : "Their honey had the peculiar flavour of famed Hymethus ;" at another, "In an hour's time we had passed Tura Perro, or Western Tura, and had entered the forest again, where the Wakimba of Tura obtain their honey." At page 264 he describes the natives of Wakonongo searching for honey. He says : "On a piece of bark they carried a little fire, with which they smoked the bees out of their nest in the great mtundu trees."

The travels of Livingstone and Stanley extended to within a few degrees of the equator on the south side. On the northern side Baker, in his search for the sources of the Nile, found honey to be one of the common articles of food, of which he received presents, or which he purchased at a cheap rate in all parts of central Africa between the former limit of discovery—Gondokoro on the White Nile, and Lake Albert Nyanza. On the Abyssinian branches of the Nile also he found it wherever he went. Amongst the Tokoories, on the Atbara River, he says : "They brought us a he-goat, together with milk and honey. The latter we had revelled in for some months past, as the countries through which we travelled abounded with a supply in the rocks and hollow trees." Here he also became acquainted with African mead, or honey wine, of which he gives the following description :—

"I paid all my Tokoories their wages, and I gave them an entertainment after their own taste by purchasing several enormous bowls of honey wine. The Abyssinians are celebrated for this drink, which is known as 'tetch.' It is made of various strengths. That of good quality should contain in ten parts, two of honey and eight of water ; but for a light wine one of honey and nine of water is very agreeable. There is a plant of an intoxicating quality known by the Abyssinians as 'jershooa,' the leaves of which are added to the tetch while in a state of fermentation. A strong infusion of these leaves will make the tetch exceedingly heady ; but without this admixture the honey wine is by no means powerful. In our subsequent journey in central Africa I frequently made the tetch by a mixture of honey and water, flavoured with wild thyme and powdered ginger. Fermentation was quickly produced by the addition of yeast from the native beer, and the wine, after six or eight days, became excellent, but never very strong, as we could not procure the leaves of the jershooa."

Livingstone found what was evidently the same sort of honey drink at Balonda, a couple of thousand miles south of Abyssinia, among tribes who had probably never heard of that country. On his visit to the chief Ihinte, he says :—

"When we arrived he had a fowl ready in his hand to present, together with a basket of manioc meal and a calabash of mead. Referring to the constantly-recurring attacks of fever, he remarked that it was the only thing which would prevent a successful issue to my journey. On my asking what remedy he would recommend, he answered : 'drink plenty of mead, and it will drive the fever out.' It was rather strong, and I suspect

he liked the remedy pretty well, even though he had no fever."

A little further on he remarks :—

"We expected to have started to-day, but Sambauza, who had been sent off early in the morning for guides, returned at mid-day without them, the worse for liquor, having indulged too freely in mead. This was the first case of real intoxication we had seen in this region. The boyaloo, or beer of the country, has rather a stupifying than exciting effect ; hence, beer-bibbers are great sleepers, and may frequently be seen lying on their faces sound asleep."

No doubt the mead mentioned by Livingstone was prepared with an infusion of jershooa leaves, like the tetch described by Sir S. Baker.

On the west coast of Africa Du Chaillu, whose book was published in 1861, explored the coast line between 2° north and 2° south latitude, the banks of the Ogobai River and its delta, and the district inland for a couple of hundred miles to the Sierra del Crystal. This district is the favourite haunt of the gorilla, the chimpanzee, and other large apes. He mentions bees, honey, and wax only incidentally, but in such a way as to show that they were found everywhere he went. Amongst various inaccurate "travellers' tales" which had been spread about the gorilla before his time, he mentions particularly one in the "Narrative of a Mission from Cape Coast Castle to Ashantee," by T. E. Bowditch, published in 1819, who wrote : "It is seen commonly by the natives, when they travel to Kaybe, lurking in the bush to destroy passengers, and feeding principally on *wild honey*, which abounds."

Du Chaillu relates his own experience. When travelling in the Fan country, and nearly starved, they came on a colony of bees in the forest as follows :—

"To add to our satisfaction Makinda discovered a beehive in the hollow of a tree. We smoked the bees out and divided the honey, which was full of worms (larvæ), but was nevertheless all eaten up. We were so nearly famished that we could scarcely wait for the hive to be emptied. No sooner was the honey spread out on leaves, and laid on the grass, than everyone of the men was ready to clutch the biggest piece he could lay his hands on, and eat away. There might have been a fight, to prevent which I interposed, and divided the whole sweet booty into equal shares, reserving for myself only a share with the rest. This done, everyone—myself included—at once sat down and devoured honey, wax, dead bees, worms, dirt and all, and our only sorrow was that we had no more."

Again, in the Ashive country, he and his party were indebted in the same way to the wild bees for relief in a case of need. He says :—

"On the 25th we set out on our way back, praying only that we might not starve by the way. Fortunately one of the men discovered a bee's nest in a tree, and we ate up their wormy store of honey."

These honey feeds, as above described, do not seem very appetising ; but as far as nourishment is concerned, I dare say the bee larvæ may be both wholesome, and, when taken with honey, not disagreeable, though one would scarcely like to try them except in case of necessity. I believe the Maoris eat them with much gusto.

Only a few years ago (in 1885) Mr. H. H. Johnstone published in the *Graphic* a description of his journey to Mount Kilima-njaro, the highest mountain in Africa, 18,000 feet high. He started

from the east coast, at Mombasa, north of Zanzibar, and spent some months in different encampments. Everywhere he appears to have found honey in plenty, describes it as "delicious, tasting like the smell of mimosa blossoms." He generally had it at breakfast and dinner, and speaks of eating it "spread on a slice of Taveitan bread," which he describes as made of maize flour, palm wine, ostrich egg, butter, and salt. Describing the district called Wa-Chaga, he says: "Honey is produced in immense quantities by the semi-wild bees, which make their hives in the wooden cases put up by the natives amongst the forest trees. A large barrel - full may be bought for two yards of cloth" (English calico, worth 2d. to 3d. per yard). When camped at the foot of the steep part of the mountain, 11,000 feet above sea level, he mentions that the natives came every day to trade with honey, among other things; and on ascending the mountain he remarked that "bees and wasps penetrate to a height of 14,000 feet," that is, within a couple of thousand feet of the snow-line at this place.

(To be continued.)

REVIEW.—'The A B C of Bee Culture,' by A. I. Root, Medina, Ohio, U.S.A. We beg to acknowledge a copy of the latest edition of this interesting work, which has now reached its thirty-seventh thousand. It has been thoroughly revised, and, in some cases, rewritten. Nearly sixty new engravings have been added, and the work now consists of over 400 double-column pages. Next month we hope to notice at greater length this most interesting work, which should find a place on the book-shelf of every lover of bees. We also beg to acknowledge the receipt of the sixty-sixth edition of 'Root's Illustrated Catalogue of and Price List of Bees and Honey and Apian Appliances.' It is profusely illustrated, and well worth perusal.

UNTESTED ITALIAN QUEENS.

It has been suggested by some of our customers that we should adopt the American queen breeders' plan of offering young untested Italian queens at a cheap rate. We have a splendid lot of young impregnated queens, bred from imported mothers, at the present time, and therefore have pleasure in offering them at the rates quoted below. We have none but Italian drones flying, and up to the present time the proportion of purely mated queens has averaged over 80 per cent. One untested queen, free by post, 7s. 6d.; 2 do., 14s.; 3 do., 20s.; 6 do., 35s. Purely mated and tested queens as per price list.

TO OUR SUBSCRIBERS.

The *Journal* is posted to every subscriber on the day of publication, but should any go astray, we will gladly post another copy if notified before the edition is exhausted.

Those who have not received the whole of their copies in due course please notify us at once.

Queries and Replies.

QUERIES AND REPLIES.—'W. G.': 1. *Propolis* may be removed from the hands by the use of alcohol, or a little grease may be first rubbed on, after which soap and water will generally remove it. 2. Yes; it is most extensively used by the bees in this country, and often makes the frames difficult to move, the interstices being often filled with it. Mr Abbot recently suggested rubbing the ends of the frames with vaseline as a preventive.

Extracts from Foreign Journals, etc.

INTRODUCING FERTILE QUEENS. BY A HALLAMSHIRE BEEKEEPER.

FOR a long time now I have been trying to drive a simple law into British beekeepers, by means of which *anyone* may safely introduce a fertile queen without any caging. I have met with the greatest opposition by all who profess to be authorities on bees. It is declared to be absurd, and all the abuse possible has been heaped on it, and yet, if every beekeeper in the world was to get up and say I am wrong, I would still affirm its truth; also if I wanted to convince anyone that I knew a little about bees, I would prove it by putting this simple law in motion. Here it is: If bees have no queen and no means of rearing one—that is, they have no eggs, unsealed brood or queen cells—they will accept another, either dropped in at the top or given at the entrance, providing they have been in such a condition forty-eight hours. This law is infallible with bees of any age, at any time of the year, or day, or night, and no matter how long they have been queenless, it will never fail, as long as the queen is simply given as stated, and no caging or doctoring is resorted to. Virgin queens can also be introduced same way, providing they are given at dark. If given in the day time and they have been amongst bees, though they are not mated, they take fright and run out of the hive.

I call this the Hallamshire Law. All my acquaintances are using it, and I know also very many more are doing so, having first tried it out of curiosity. I know it runs direct in the teeth of the teachings of many. It seems something like putting your hand in red hot lead, which can be safely done as long as the lead is red hot. Many old lead workers think because they know just melted lead will burn severely, it must burn much more so, if it gets red hot. Here we see the same standard of reasoning, if old and long queenless bees will not readily accept a new queen by means of caging, they at once think it would be so much worse to try to do so without the cage.

When I wish to introduce a queen and I do not happen to have a stock in the right condition, I simply remove the queen and all the combs containing eggs or brood; the brood combs I distribute amongst other stocks or use them in other ways; if there are not enough combs left I give more.

Sometimes I divide the stock, putting the queen, brood, and half the bees in a fresh hive on another stand, then in forty-eight hours I give the bees the queen. I drop her in at the top and listen for a loud buzzing noise; if I hear it the thing is done; if not, or if she happens to be balled if given at the entrance, I examine the hive for a stray queen. I have found very many stocks to re-queen themselves, particularly in the swarming season, when new mated young queens are about. Another system of direct introduction has been much puffed in this country, in which the queen is given at night (after thirty minutes' fasting) of the same day the old queen is removed and without any brood or eggs remaining. This plan seems identically like what was first published by Mr J. E. Pond, jun. Last season I carried out an elaborate course of experiments, to see what merit there was in it, and how much better it was than my law, as nearly all the boasted successes with the system were quite in accordance with it, *i.e.*, the bees had been broodless and queenless more than forty-eight hours. Well, here is the result. On carefully examining the hives on the third or fourth day, I invariably found queen cells; on the seventh or eighth day I found them sealed. If the queen was heavy with eggs, or in full laying when first given, she would always present the appearance of a non-laying queen, proving conclusively that the bees had not accepted her as the new mother. After the cells were sealed she was generally allowed to destroy the nymphs, and in about eleven days she would begin to lay again. This was the rule, the exceptions were, that the queen cells were well protected right forward. In one I tore down, the nymph was fully matured and marched about in my hand, though the queen I had given was quite safe, but in many cases the queen introduced disappeared about the eighth day.

I had much better success in removing the old queen by lamplight at night, and giving the new queen at the same time, without any preparation whatever, but even in this case, queen cells were stated.

The party under whose name it is put forward in this country, admitted in the *British Bee Journal* last summer (see June 22, page 267), that the bees showed signs of queenlessness and often started queen cells, which he denied were sealed. I am quite satisfied they are all first sealed before the new queen is allowed to destroy them, therefore, considering such an enormous loss in egg-laying, ten or twelve days, and 25 per cent. loss of queens, I claim that my law 'bosses' them all. If the queen is in laying condition, she is immediately accepted and she goes on laying; if not so, then she is stimulated by the bees, and in two days is in full lay.

Following the clue up, by giving queens at dark, and virgin ones running away at day time but staying at night, by 'Pond's system,' queen cells having started, I thought virgin queens might be accepted in normal stocks as soon as the old queens were removed, and, trying the experiment, I did not find it to be true, but I found if I allowed at least twenty-four hours between removing a

laying queen and dropping in a virgin queen (which of course must always be done at night), I was always successful. I am not sure that the plan will never fail, but still it is of such success, to open up quite a new practice in honey raising; *viz.*, say one works his stocks up to swarming condition with the old laying queen, then he removes her and gives a virgin in her place, or if he does not like the delay in egg-laying, then he can make up a nucleus alongside and as soon as the young queen begins to lay remove the old one and unite the young one. With a young queen of the current year, there is very little inclination to swarm, or rear drones, and there is no idling during a honey glut because they have the swarming fever on.

Now, Mr Jones, I want you to try this law of mine. I give you my solemn word that it will *never NEVER* fail, and if you can persuade the Canadian beekeepers to try it, you will benefit them by many, very many dollars. Also they will be ready to accept a few more things I can give them.

You will find more particulars of the 'law' in the pages of the *British Bee Journal* for 1886. In that for July 15th, page 318, I give eight ways of applying the law. Also the *Journal of Horticulture* for '85, '86 and '87, the oldest bee-paper in the English language.

The first opportunity beekeepers will have of practising the law will be when looking over their stocks for the first time in the spring; some will be weak and have a queen all right, others will be strong yet without a queen. Now, all that is necessary is to offer any stock that is suspected to be queenless, a queen—just drop her on the comb amongst the bees, say one from a weak lot—when if they *are* queenless, the bees will at once commence a peculiar hum, something like the swarming hum. I am not sure that they do it for joy, but to communicate the fact that they have a queen to all their companions, for if a comb is held 12 or 18 inches above the hive, and the queen dropped on, almost at one instant the bees on both sides will be seen to be vibrating their wings, *also those in the hive below*, and proving conclusively to me that bees have a language and that they can hear. If the bees really have a queen, they will at once 'ball' the stranger. So here is a sure test as to whether the bees have a queen or not, and will save a lot of time in examinations, stocks or colonies. It is remarkable how you persist in calling stocks of bees 'colonies,' dubbing every hive stronger than a nucleus such, and for what should be called a colony you have to employ a purely Latin word to describe it. In England, we describe hives of bees as follows: All those which have stood the winter are called 'stocks,' for the simple reason that they were kept for *stock*, not because they are 'stuck' on a stool, as once contended in the *A B J.* The first swarm from a stock is called a 'swarm,' a second swarm, a 'cast,' a third swarm, a 'colt,' a swarm from a swarm is called a 'virgin swarm,' etc., and by these names a beekeeper always refers to his bees. He will tell you how many stocks he has, how many swarms, how many casts, etc., and thus we instantly know his strength; also when he says he

keeps twenty stocks we instantly know this is the number he wintered. At the end of the season he examines his 'stocks'; if too light for wintering he condemns them, then he examines his 'casts,' to see if any will do for stocks. If he still fails to make up his number of stocks he selects them from the swarms, and having done so, he calls *all* he has reserved to stand the winter 'stocks' because they have to produce his future profits. All the others are 'condemned,' either for the sulphur pit or the driver, that is a man who makes a practice of going round 'driving' the bees out of their hives.

Now, the word 'colony' means a community that has not sufficient strength of itself to maintain its own existence, *e.g.*, our own 'colonies' and a queen-rearing nucleus, a number of colonies united may do so, *viz.*, the United States and a lot of queen nuclei united into one good stock. So when I speak of a colony of bees, I mean a few bees by themselves in a separate hive, while one that is capable of yielding a profit I call a 'stock,' the proper English name.—*Canadian Bee Journal*.

HOW CAN WE INCREASE THE DEMAND FOR HONEY AND MAINTAIN PRESENT PRICES?

Read before the New York Bee Association, by L. C. Root.)

THOSE who have carefully read the various bee journals during the past year have observed the unusual interest which has been manifested in regard to the disposition of our products at remunerative prices. I have many times expressed the opinion before this body that far too much thought was being given in the direction of producing large quantities of honey, and too little to the better quality and proper disposition of the same. I have so often expressed my views upon this subject that I shall offer but few suggestions. Enough has been said, and practical plans enough have been offered, to entirely revolutionise the system of marketing. To tell the exact truth, we have had too much talk, followed by far too little action. The great needs at present may be briefly stated as follow:—First, to attain to a higher standard in the production of our honey. This will be reached through the great freedom of discussion which is taking place in all our bee literature. I am a thorough advocate of the "question and answer department" of our papers, where we are enabled to compare the opinions of so many of our best beekeepers, expressed in so concise and explicit a manner. We should remember that anything tending to educate in the direction of raising the quality of our honey to a higher standard is exactly in line with creating and strengthening a better market. Our first aim should be a prime quality, and next complete and perfect finish, so that it shall be attractive and agreeable to handle. All this means proper autumn management and winter work, successful wintering, and proper spring management, so that the stocks shall be populous and in condition to store honey rapidly,

which aids its neat appearance. In short, it means all the year round hard work.

Second, we need to guard and foster most strenuously the fact that our product is a pure and wholesome article of food; in fact the only commercial sweet, furnished entirely from natural sources, that has undergone no process of manufacture. It is as wholly and truly as natural a production as milk, and has ranked with it in all ages past.

Third, We are now come to the point where we need a reformation. We talk much about "developing a home market," "creating a greater demand for our honey," "making proper exhibits at our fairs," etc., but we fail to practice what we advocate. In my opinion, one of the very greatest needs in the direction of solving the problem you have asked me to consider is an entire revolution in our system of marketing. Our wares should be handled in every large and important market by those who are thoroughly informed in every branch of bee culture.

It may be urged that by these exhibitions we will induce many not now in the business to embark in it. I think not. I believe the better way is to come right out square and let them see what we are doing. I have made exhibitions at the Saratoga County fairs for a number of years, and have yet to hear of anyone starting in the business as the result; but I know it has been the means of helping hundreds, I may say thousands of pounds of honey, out of the glutted city markets. I think, perhaps, you will agree with me that for the cause of apiculture exhibitions at fairs are desirable, but will it pay the persons making them for their time and the necessary expenses? We might ask does beekeeping pay? Does any business pay? The answer depends in a great measure on the individuals themselves. It may not pay directly the first year, but if advertising is worth anything it no doubt will, in the long run. If your fair managers offer no premiums, make a good display one or two years without, and I think they will then, rather than lose this attractive feature. There is also a great advantage in being the first one to start anything like this.

Now, friends, if these few ideas that I have here advanced will result in increasing the home consumption of our honey, thereby helping to relieve the city markets, I shall feel repaid for all the labour I have given this paper.—*Canadian Bee Journal*.

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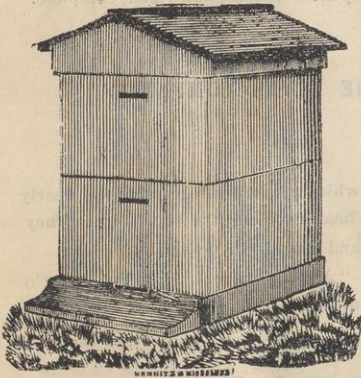
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