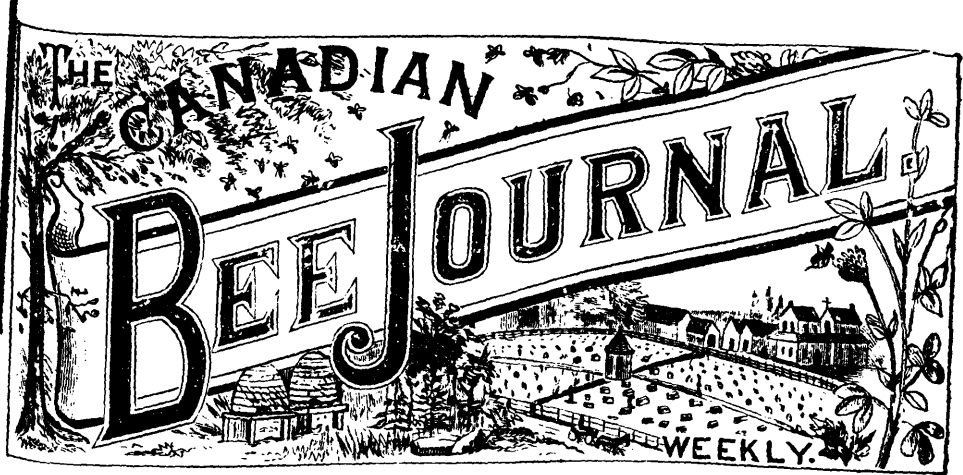


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"THE GREATEST POSSIBLE GOOD TO THE GREATEST POSSIBLE NUMBER."

VOL. I.

BEETON ONTARIO, JANUARY 20, 1886

Nc. 4

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TO CONTRIBUTORS

Communications on any subject of interest to the Bee-keeping fraternity are always welcome, and are solicited.

Beginners will find our Query Department of much value. All questions will be answered by thoroughly practical men. Questions solicited.

When sending in anything intended for the JOURNAL do not mix it up with a business communication. Use different sheets of paper. Both may, however be enclosed in the same envelope.

Reports from subscribers are always welcome. They assist greatly in making the JOURNAL interesting. If any particular system of management has contributed to your success, and you are willing that your neighbors should know it, tell them through the medium of the JOURNAL.

# "FOUL BROOD"

## Its Management and Cure.

BY D. A. JONES. NOW READY.

This little pamphlet is presented to the Bee-Keeping public with the hope that it may be the means of saving infected colonies from death by fire and otherwise. No expense is required to successfully treat the disease, other than the little time required for fasting.

Price, 10 Cents. By Mail, 11 cents.

D. A. JONES & CO., PUBLISHERS,  
Beeton, Ont.

# FEEDERS

Those who require to do feeding will find it to their advantage to have some of our

## CANADIAN BEE FEEDERS

You can feed 1 to 20 pounds of syrup in one night, and there is no danger of robbing. The price is low, and the sale is very active. Our factory is running on them at the present time.

Made up, each .....	\$ 60
"    per 100 .....	45 00
In flat, each .....	47
"    per 100 .....	30 00

We can guarantee that they will give satisfaction.  
D. A. JONES, Beeton, Ont.

J. P. CONNELL, Hillsboro, Hill Co., Texas, can fill orders for **Pure Italian Queens** by return mail. Untested Queens, \$3.00. Tested Queens, \$2.00. Send me your order and send for my circular of Queens, Nuclei and bees by the pound.

FARMERS BUY THE CELEBRATED  
**LARDINE MACHINE OIL,**  
—AS IT—  
**EXCELS ALL OTHERS.**

Manufactured solely by  
McCOLL BROS.,  
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# DADANT'S FOUNDATION

is attested by hundreds of the most practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color evenness and neatness, of any that is made. It is kept for sale by Messrs.

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- C. F. DALE, Mortonville, Ky.,
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### 150 COMPLIMENTARY

and UNSOLICITED TESTIMONIALS from as many bee-keepers in 1883. **We Guarantee every luh of our Foundation equal to sample in every respect.**

CHAS. DADANT & SON,  
HAMILTON Hancock Co., ILL

# MUTH'S HONEY EXTRACTOR

Is second to none in the market. **Square Gears, Honey Jars, Tin Buckets, Langstroth Bee Hives, one-piece Sections, etc., etc.**

Circulars mailed on application. Send ten cents for "Practical Hints to Bee-keepers." Address

CHAS. F. MUTH & SON,  
976 and 978 Central Avenue, Cincinnati, O.  
EVERY

## Farmer, Fancier, and Poultry-Keeper

SHOULD SUBSCRIBE FOR

# "The Poultry Monthly,"

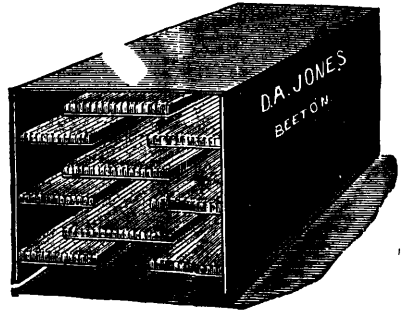
The Best Magazine of its Kind.

Subscription, \$1.25 per annum. Sample copies, 12c.

SPECIAL OFFER.—We will send the "Monthly" for a full year for \$1 to all who mention the "Canadian Bee Journal." Send for price lists of Poultry Supplies.

BONNICK & HORKICKS,  
P. O. Box 215,  
Toronto, Ont.

# WINTER FEEDERS.



These are for feeding in winter, or at any other time when the weather is too cold to admit of feeding liquids

### DIRECTIONS FOR MAKING THE CANDY.

Take pure pulverized, or granulated sugar—the former preferred—and stir it into honey, nicely warmed up, until the honey will not contain further additions. Allow it to stand in the dish until both are thoroughly mixed through each other, then place in feeders and set them on top of the frames, packing all around nicely to allow no heat to escape

Each, made up .....	30
Per 10, " .....	75
Each, in flat .....	20
Per 10 " .....	1 75

We have a full stock on hand ready to go by return express or freight. **D. A. JONES, Beeton**

# Five Per Cent. Discount.

Off all goods which may be ordered now for use next season we will give the above discount. This is to induce early orders and in case you need anything for this season, you could save freight charges and the discount by ordering all TOGETHER. Will be given till further notice.

D. A. JONES, Beeton, Ont.

# THE CANADIAN BEE JOURNAL.

PUBLISHED BY

**D. A. JONES & CO., BEETON.**

WEEKLY - - \$1.00 PER YEAR

## THE COLONIAL EXHIBIT.

**W**ING to the death of the sister of our respected Secretary-Treasurer—W. Couse, Meadowvale, we are unable to furnish the official minutes of the special meeting of the Ontario Bee-Keepers Association held in Toronto on the 12th, in this week's JOURNAL. We shall have them for next week. In the meantime we may say that the whole matter has been arranged amicably with the Ontario representatives and in a week or two full particulars as to the mode of procedure in the getting up of the display will be published. Committees for the active prosecution of the work were appointed and full particulars will be forthcoming as soon as the plans of the committees are completed.

## QUEEN REARING.

NEW FACTS REGARDING THE BUSINESS.

**T**HE rearing of superior queens has been much neglected in the past, but is now attracting more attention from the fact that this is one of the great factors in the building up of good colonies. Who has not noted the superiority of some colonies over others in wintering, handling, comb-building, brooding, gathering honey etc.; these, and many other qualities are all inherited from the parents, and upon the superiority of the drone and queen depends the value of the colony. Many are under the impression that as good queens can be raised in small nuclei as in large and strong colonies; others imagine that by simply removing a queen from an ordinary colony and allowing it to start queen cells, that the queens so raised are as good as any. Queens raised in that way are usually from old larvæ that have been fed a worker bees, perhaps half the time that elapses between hatching and capping.

It is well known that bees are short-lived while queens live for years; so in proportion to the time that the larva is fed as a worker bee before the bees commence feeding it for a queen, in the same proportion is the age of the queen reduced and her usefulness impaired.

Again there are those who think that queens raised under the swarming impulse in the ordinary way of natural swarming are superior to queens raised by queenless colonies. Nature's methods have been improved on in many ways and we are enabled to secure much better results than by following the trodden paths in regard to queen rearing.

The following plan if properly prosecuted will give these superior queens; when hatched the queens are usually much stronger, are considerably larger and better developed, become fertile and commence laying at least one-third (and more in unfavorable weather) sooner and their progeny will be stronger, will be more vigorous and better honey gatherers. We select the colony from which we wish to breed, and prepare it by taking hatching brood from other colonies in the yard being careful not to take any having uncapped brood, or if they have, to so arrange the time for starting queen cells that any of this brood will be capped over before such time, placing it in the hive where queens are to be raised. Another way of preparing them is to examine the combs and leave the suitable ones in the hives, removing the others and replacing them with combs such as before described. When the colony is made as strong as possible with brood we further strengthen it by adding bees. We spread a cloth or newspaper on the ground in front of the hive having it extend six or eight feet in front of entrance, then take combs from any hives in the yard that may have young bees in them and while going toward the hive to shake them down, we tap the frames gently, causing most of the old bees to leave the comb and return to their own hives; then standing in front of the cloth or paper about six feet from the entrance of the hive commence shaking off the young bees, holding the frame up two or three feet from the cloth to allow the remaining old ones to return; in this way we continue shaking down young bees until we have enough. Leaving them a short time the

old bees all return to their hives, then by taking a turkey or goose feather some of the young bees may be moved along towards the entrance and as soon as these start to run in the rest will follow. In a short time we have the hive so crowded with bees that they have little room and consequently make preparations for swarming. As soon as they begin to build queen cells we lift out the combs on which we wish the queen cells built and with a pair of sharp-pointed scissors, such as may be used for clipping queens' wings, we clip out little strips of comb here and there cutting almost down to the septum. Each clipping should be about the size of a twenty-five cent piece and should be cut on a slant on the lower side of about  $45^{\circ}$ . A sharp knife will answer if scissors are not convenient, or by taking your finger and crushing down the cells in a similar manner. Where eggs are just hatching the same result is obtained and queen cells will be started in nearly all these places. Another way is to cut out strips leaving about an inch of solid comb between the cuts, the openings being one-half or three-quarters of an inch wide so that queen cells may be built on the combs hanging down in the openings. The combs on the underside over the openings should have the cells shortened by cutting from the septum towards the edge on an angle of  $45^{\circ}$  thus facilitating the work of cell-building. Thus an immense number of cells may be constructed. The cuts should always be made where there are eggs just hatching or larvæ only a few hours old. We carefully watch the time of capping these cells and the day before the bees cap them the queen should be removed and placed in a hive at the side of the parent colony, which hive should contain sufficient bees and combs from the other colonies to allow of the bees continuing to lay profusely. If perchance a swarm issues before we remove the queen we re-hive it, retaining the queen and disposing of her as above. We now have an immense colony, with bees enough for from four to six hives, having the swarming fever but without a queen wherewith to swarm. The inmates of the hive use all their energies in nursing the queen cells, giving them more attention and producing superior cells. Weak or ordinary colonies will allow the

first queen that hatches to destroy the others, while this mammoth colony waiting to swarm will not permit the queen to hatch and destroy the other cells, even when the caps of the cells are cut and just ready for the queen to crawl out. They keep them imprisoned in their cells for hours feeding them as they pass their probosces out through the opening. We have known them kept in in this way for more than a day when if not attended to then, the queens were liberated and a swarm issued taking with it all the hatched queens. Sometimes dozens may be found in one swarm. Should such a swarm issue it may be returned to the colony at the same time watching the queens and caging them, but before returning it all the cells that have hatched are pulled off and counted so that if there are fewer queens caught than there are broken cells, we know there are more queens yet to find and these are easily found by taking an empty hive, shaking the bees down in front allowing them to pass in slowly, and by watching, all the queens, may be secured. We now have an immense colony of bees without queen, cells or brood to start them from, and we go back to the hive where we placed the queen and take from it combs that are filled with eggs, but no larvæ, placing them in this queenless colony. The strength of the colony and the swarming fever with which they are imbued induces them to continue all their attention toward queen rearing and again an immense number of queen cells are started. We have had hundreds started in one colony and have exhibited single combs at our exhibitions, having on them from fifty to eighty-five cells. Though this second batch of cells is so numerous each one receives much more attention than single cells do in a hive. If the eggs are all about the same age they will hatch about the same time, and there are few apiaries that require more queens for their own use than would be hatched from this one batch. Another way in which these large colonies may be used is for the production of drones; such raised in these colonies will be more vigorous and the good effect of breeding them in such colonies can scarcely be estimated.

Read at Leeds Bee-Keepers' Convention.

### DEEP AND SHALLOW FRAMES.

DEAR MR. FULFORD AND FRIENDS:—

THANK you for your kind invitation to attend your Convention. As I cannot, however, be present with you personally I send my cordial greetings accompanied by some thoughts on the subject you have suggested to me, viz., "Deep and shallow Frames and their results." As to the relative merits of deep and shallow frames there seems to be a wide diversity of opinion amongst leading bee-keepers. This is, I suppose, quite natural and just what we might expect for two reasons. The first is the fact that a high degree of success is attained by the use of each style of frame; and the second is the varied environment, including a wide range of latitude and climate, in which this success is attained.

Now, in dealing briefly with the subject in hand I shall simply give you my own views for what they are worth founded on such experience as I have had with both styles of frame. Had such experience been more extended the opinions offered would perhaps be of more value. With the deep frames I have had about twenty years experience; with the shallow frames about five years. At present I keep both kinds in my apiary, and have had both side by side for the past five years. The deep frame I have always used since I abandoned the old box hive over twenty years ago; nor do I ever expect to abandon the deep frame. The general conclusion I have come to after the above experience with both frames is that I can make bee-keeping successful with either one or the other. Still all things considered, my preference is for the deep frame. This is not merely because I have used it longer than the other but for other more substantial reasons.

Now, what is a deep frame and what is a shallow frame? Of the former we may fairly take the Jones frame as a sample, which is about 12½ inches deep inside measure, and of the latter we may take the Langstroth which is about 8 inches deep. In my own apiary I use both the Jones and Langstroth hives as well as three other styles of hive with frames respectively 12¾ by 13 inches, 12¾ by 12 inches and 12¾ by 9 inches inside measure. You may think this foolish and inconvenient to have so many sizes of frame in one apiary and so it is perhaps in one sense; yet I do not find much inconvenience as my extractor will take all of the sizes and I have a sufficient number of each size for a free interchange of frames in spring management, building up nuclei, swarming etc. The fact, however, of my having so many styles of hive is owing more to

the force of circumstances—such as buying selling, sharing etc.—than to choice. For experimental and test purposes the variety is useful. But I would not advise any bee-keeper beginning the business to have more than one size of frame unless indeed he is compelled to winter a portion of his stock outside without proper protection, and in that case if he be a shallow-frame man he had better get the deep frames for outside wintering. This brings us to one of the main advantages the deep frames have over the shallow. Unless the bees are in thoroughly comfortable winter quarters at a uniform temperature outside the hive of about 45° Fah the deep frame is, in my opinion, far ahead of the shallow frame for wintering purposes. If the repository is comfortable, with a steady temperature as above it makes but little difference so far as wintering is concerned, what the style of frame is. There is, however, a little difference I have observed, aside from the temperature, in favor of the deep frame for fall and winter, which is this; I have noticed in the fall that the winter stores are never so well capped over in the shallow frame as in the deep frame, whether the stores be natural or artificial. And as well-capped stores are a very essential condition of successful wintering, it therefore follows that the hive which most effectually secures this condition is the best hive for wintering, that is, other conditions being equal. Wherefore, it follows that the deep frame is somewhat better for winter even in a proper temperature which in my opinion for successful wintering ought to be from 45° to 50° Fah., outside the hive. But then if the deep frame has this small advantage even in the proper winter temperature it certainly has a very great advantage over the shallow frame in uncomfortable quarters or a comparatively low temperature. The why and wherefore of this will be obvious enough to the experienced apiarist, but as there may be some inexperienced ones present it may not be amiss to set forth the facts and principles in explanation. We all know it is quite a common occurrence for bees in winter to starve to death in a low temperature with plenty of honey in the hive. We also well know the reason. The stores near the cluster are consumed, and the bees cannot move in a lateral direction to remaining stores as they are too cold and stiff to do so. Now, in the shallow-frame hives the stores are necessarily spread laterally, and are mostly on one or both sides of the bees instead of being above them. In the deep-frame hives the winter stores are mostly at the top of the hive and hence *above* the bees—or at least, ought to be at the top, and will be if the management is correct. And as heat naturally

ascends the bees can of course more readily move upward towards their stores in cold quarters than laterally. The reason that the deep frame is much better for cold winter quarters thus becomes obvious. On the same principle of the natural ascension of heat the other fact may be explained, viz., that the stores are better capped in the deep than the shallow frame, as the winter stores are usually put in during the fall in weather more or less cool, and the heat of the deep hive is more concentrated than that of the shallow hive, which is more diffused and consequently less effective for the curing and capping processes.

With this much as to the relative merits of the two styles of frame for wintering, it is now in order to compare their relative merits for spring and summer purposes. To bring bees successfully through the precarious season of spring the deep frame is undoubtedly the better one, for two reasons. The first is, the brood in the deep-frame hive will be more compact and less distributed than in the shallow-frame, and this is an important point. The second reason is, the heat is better preserved and economized and more concentrated on the brood-nest than in the shallow frame, and this also is an essential point during the cold spring weather. But for summer purposes—for the harvesting of honey—the claims of the two frames are I think about evenly balanced. If there is any difference I should feel disposed to give it to the shallow-frame. Of course those apiarists who contend that comb honey of the first quality cannot be successfully produced in the lower story or brood-chamber of the deep-frame hive will join issue with me in only conceding a trifling advantage to the shallow frame for general harvesting purposes. In reply to this I may say I have produced just as nice section honey in the body of a deep frame hive (the Jones) as I ever produced or saw produced on top of any shallow-frame hive. Still, taking convenience of manipulation into consideration as well as the quantity of ingathering both of comb and extracted honey, the shallow-frame hive is perhaps slightly the better one of the two for all summer purposes.

I would sum up the relative merits of the two frames thus: In warm climates as in the Southern and some of the Central States where there is no trouble with cold in wintering, the shallow frame is no doubt the better one for all seasons of the year. Hence it is not at all surprising that the Langstroth frame is more popular "down south" than any deep frame. On the contrary in more northern localities—in Canada and the Northern States—the deep

frame is without doubt (that is, to my mind) the better one on the whole of the two. There certainly is a great variety of hives and frames used in Canada; and to undertake to say which one is most popular or most used would perhaps be only guess-work. However, judging from the area of my own personal knowledge I should think that the deep frame predominates considerably, as, in my judgment, it *ought to do* in this climate. My advice to all beginners in bee-keeping and to the comparatively inexperienced, is to use the deep frame and continue it until you get so well grounded in the Art of Bee-Culture that you can bring your bees through the Canadian winter and spring with reasonable certainty in any style of hive or frame. Not until then will you be safe in adopting the shallow frame.

Regretting my inability to be present; hoping the Leeds Convention may be highly successful, and profitable to you all; and wishing you all the compliments and congratulations of a New Year I beg to subscribe myself.

Yours fraternally,

ALLEN PRINGLE.

Selby, Lennox Co., Jany. 6th, '86.

P. S.—I beg to add a word for our CANADIAN BEE JOURNAL which ought to and no doubt soon will get the support of every Canadian Bee-Keeper whether he keeps one colony or five hundred.

A. P.

FOR THE CANADIAN BEE JOURNAL.

#### APICULTURAL PATENTS.

UNTIL the past two or three years apicultural patents have been discouraged. Let an apicultural inventor attempt to protect the fruits of his labor, and soon a "pack" [were after him in full bay; and in some instances he became so "worried" as to give his inventions to the people, rejoicing that he had been enabled to contribute his mite to the common good. Public opinion had been educated up to that point, that it would almost condemn an article simply because it was patented.

A change is coming—is now here. We are beginning to respect apicultural invention, to recognize it even if it isn't patented, and to allow (?) apicultural inventors to patent their inventions if they wish.

We presume that the reason why patents have been opposed in the manner they have is because of the "humbaggery" that has pervaded them; but it should not be forgotten that "humbaggery" prevails in all business avenues, but business is not only a blessing but a necessity to human life.

and progress. If patents are desirable why should they be blotted from the budding science of apiculture? It is not strange that patent humbugs should be rife in countries where general ignorance prevails as compared with U. S. How seldom we now hear of anyone in this country being swindled by investing in a patent hive. No one would apply for a patent on something in general use; while something not in use, but previously invented, is of no value, because, tested by practice, it *died*. A revival of it could only fail, and needs more of our opposition. Nearly all bee-keepers read one or more of our bee papers, and, as a class, are well posted regarding inventions, patented and unpatented, and cannot be humbugged by inventions of a worthless character. We know that bee-owners, who knew almost nothing of practical honey producing, have invented and patented hives that were inferior to the one patented by our Father Langstroth; (we cannot estimate the value of a patent simply by referring to its date,) but these worthless patents needed no opposition—the intelligence of our bee-keepers laid them on the shelf. We think we do not over-estimate the wisdom of the readers of our bee papers, when we say that they are aware that there is still room for valuable improvements in hives and implements, that the inventors of these implements should patent them if they chose; and whether patented or not, said readers are well fitted to judge of their merits. Bee-keepers outside of this class will not see any of our "warnings." Combinations of old inventions may and often do, form as useful, original and patentable inventions as any other. This was the case with the most valuable claims of Father Langstroth's expired patent. We believe that original and valuable inventions should be protected, and humbugs exposed; but when such ones as J. M. Shuck, T. F. Bingham, James Heddon, G. W. Stanley & Bro., Dr. G. L. Tinker, and others of this stamp, hold patents on what they believe to be valuable improvements, who shall judge? The fact that Mr. A. I. Root presented \$100 to one of these inventors as a token of general appreciation of his improvements (not patented) of the Langstroth hive, points strongly in the direction of modern valuable inventions. Some of these modern inventions seem of little worth while we have *proven* that others are of great value. Others must do as we have done; carefully "try all things" (that appear worthy of trial) "and hold fast to that which is good." Valueless inventions never need "sustaining," it is the valuable ones, that somebody wishes to break down the protecting patents and purloins. We are aware that but few apicultural patentees have

ever enforced their "rights" by law. Some have lacked stamina; not forgetting the money that Father Langstroth was wrongfully forced to spend in the U. S. courts, and which he now needs in his old age. Others have not the means to protect their rights against the very few bee-keepers that are degraded enough to rob them. Let us not only encourage apicultural inventions, but no longer point the finger of scorn at the man who will not *give* us the product of his brains.


W. Z. HUTCHINSON.

Rogersville, Genesee Co., Mich., Jan. 3, '86.

We agree with you in many points in the above article, and are pleased to know that rights of inventors are being more and more respected as they should be. When anyone like Father Langstroth gives us such valuable improvements in connection with our pursuit, as he has done, why should we not recognize it in a substantial manner, but if we have any invention we suppose to be good it is no sign that we are to hold fast to that and never try to improve on it. We can remember when our first reaping machines made their appearance they were thought to have reached perfection, never dreaming that binders would follow in a few years; note the difference in the first and our present sewing machines and again the improvements and facilities in the mode of communication with distant points. So also it has been and will be in the method of taking honey; it is but few years since it was taken in large boxes, now we have the neat and much more conveniently handled section and the rights of those who have spent time and money and devised those improvements *should be* recognized either patented or otherwise.

Read at Leed's Bee-Keepers' Convention.

#### WINTERING BEES.

OUR very kind note of the 7th inst. came duly to hand. I was away to the N. A. B. K. Association at Detroit and did not return for about two weeks.

In my absence a large amount of correspondence had accumulated, that demanded immediate attention. And then too I have been quite unwell since my return. When you read these reasons you will pardon my long delay in answering your very kind note.

Nothing would give me more pleasure than to comply with your cordial invitation to attend your Convention to be held in Brockville on Jan. 8 and 9, 1886. But owing to ill-health and press-



ing duties in other directions it will be quite out of my power to attend your meeting on the present occasion. I must content myself with the hope of visiting you at some future time.

With regard to writing an essay on wintering bees. Well, I will say that I have turned the thing over and over again a good many times since reading your request and I find whenever I start out, my memory tells me that the same thing has been said and printed in substance many times before. So without making an attempt at writing a paper upon the subject of wintering bees, I will simply offer a remark or two that may be useful to some one.

If you succeed fairly well wintering out doors, better continue in that line for a while yet. It has its advantages as well as its disadvantages. In the meantime cellar wintering is being perfected and will in time perhaps be generally practiced in our latitude and very likely much farther south also.

All animals winter well when made *perfectly comfortable*. The honey bee is no exception to this rule. Then I would say make your bees *perfectly comfortable*. To this end they must have plenty of good sealed stores, (yes, pollen too), plenty of fresh pure air and be kept just *warm* enough to make them feel so nice and happy and good that they do not have to crowd up together at all to get warm. And in my humble opinion your bees will come through in fine condition very nearly every time.

Remember perfect comfort means perfect health or at least so far so as animal life in general is capable of enjoying that happy condition.

There should be bees of sufficient quantity in each cellar to generate animal heat to quite or nearly the desired, degree while artificial heat should be made to regulate the temperature to about 50° to 55° and at the same time to carry off the foul air.

Bees should be left in winter quarters until settled weather and until plenty of pasturage to give employment is at hand. Remember if you have a few weak sickly hives that fail to fight away robbers you had better destroy them or unite them which means about the same thing, else some of your best stocks may become confirmed thieves and robbers—bad things to have in an apiary you know.

Winter clamps. I believe, as a rule, in the hands of small bee-keepers, when the "trying time" comes, are a failure, some important feature unobserved by the novice results in disaster.

In fact I am forced to the conclusion that the sooner we discourage the idea of keeping bees in a small way the better for all parties and the country too.

The proof of my position is fully established by the fact that about forty-nine out of every fifty who keep a few bees "just for their own use" tacked on to some other pursuit, lose them all sooner or later in winter.

I am really doubtful if the wintering problem will ever be solved for that class of bee-keepers.

I am fully persuaded that it is a duty we owe to our fellow citizens to make this point clear to their minds—loss of time and money and blighted hopes are bitter ingredients in our history. Life is too short and precious to waste any portion of it in that way. Personal gain should yield to the general good.

S. T. PETTIT.

Belmont, Ont., Dec. 23rd, '85.

FOR THE CANADIAN BEE JOURNAL.

### THE DEVELOPMENT OF OUR HONEY MARKET.

PERHAPS no theme now that our bees are in winter quarters is of greater interest to the producer of honey. I feel my deficiency in dealing with this subject, yet my labour will not be in vain if one new idea or thought is thrown out if old ideas are more prominently brought before us, or more united efforts decided upon before the discussion closes.

Why should we cry our markets are overstocked when all we have to do is to enlarge them. Increase the consumption of an article which will stand upon its own merits when once introduced; therefore our markets have not been fully developed and consumption has not reached its full capacity until every man, woman and child uses this and no other sweet. What are the means to be employed? We can all suggest. Four years in attendance—generally selling honey—at the Toronto Industrial exhibition have given me a few ideas of the difficulties to overcome.

We want to disseminate more knowledge about apiculture, not for the benefit of the bee-keeper, but in periodicals where it will reach the masses that know nothing about it. State the progress apiculture has and is making, what vast quantities of honey are produced and consumed compared with former days, how this progress permits of such a production. Little articles written as reading matter and news of the day, will do a vast amount of good to educate the masses to consume honey. They will be interested, the idea of using honey brought before them again and again, they will realize that if they do not use honey as a staple article they will not be with the fashion—that foolish feeling and idea which sets one half the world blind to everything can be made to work to our benefit and—for once—that of its slaves.

As soon as a new outlet is found for the sale of honey, be it a pork packer, tobacconist or some other business, send an item to the journals of large circulation. "Pork packers (or whoever they may be) are commencing to use honey successfully in their business, &c." If we had the energy of the general manager of some quack medicine who works up such a market by judiciously appearing before the public, bee-keepers would soon find they could not supply the demand and as ours is an article of merit the market would not decrease. Therefore we want to do a liberal amount of advertising, setting forth the merits of this sweet above all others for children, invalids and people in sound health, something we never do except occasionally in a bee journal, the last place it should be put to enlarge the market.

At exhibitions held in larger cities we want a large and prominent exhibit of honey and implements. Start by giving the directors a nice can of honey, they are human and will interest themselves on our behalf as to space and general accommodation. Give other prominent people a sample if they do not buy and after tasting they will generally leave an order and feel under an obligation to speak of the fine display and quality of your honey.

Do not wait until a reporter makes himself known to you, but hunt out those of the leading papers, pave the way to their good graces by a little honey, in that way the exhibit will receive an amount of attention by the public, it otherwise would not. Having in this way secured the co-operation of influential people and the public generally, it will soon become a habit for them to buy.

As to the quantity in package, you regulate it yourself by the package you give them at first, you can come down to a smaller but hardly to advance a larger. Toronto people have been spoiled by too small a package being placed upon the market; 5 years ago we sold the bulk of our honey in five and ten lb. packages; a few in two and a half but the latter was the smallest. Year after year the size has decreased and to-day it is as difficult to sell a two and a half lb., if not one lb. package as five years ago five and ten lb. packages. The sellers are to blame for this not the buyers. At your exhibition you will find so many wise heads ready to condemn the whole display, because it is too large they say, "that cannot be all honey," but you, who listen, know they are a class who condemn with their own ignorance as a basis. Explain to all who will listen about bee-keepers, be courteous and endeavor to create a kindly impression, and you make a step in the right direction. After the ex-

hibitions follow up by establishing a general agency under a man who knows what is wanted or if circumstances permit, sell honey yourself. Visit nice clean groceries, fruit stores and chemists, and there arrange to set up a neat display in his window or on his counter, and leave a stock to sell from. Do not be discouraged by the store-keeper saying, no one asks for honey, tell him it is because they do not see it to buy. Even if the party has but little push, seeing it will bring customers.

Place honey upon the market at the right time. There is no use rushing it off when small fruits, &c., are abundant, and see that the display is kept up. Put your name upon every package. Whether comb or extracted honey every effort should be made to place it upon the market in as uniform and attractive a manner as possible to eye and palate. The sections should be white, clean and well preserved, any inferior ones should be disposed of at your exhibitions by cutting from corner to corner, making four pieces to each attached to the side of a section, these can be sold upon the grounds in large quantities. Observe the utmost cleanliness with your extracted honey, seldom, if ever, extract before one-third capped, then put into large deep tanks, which will give neither taste or color to the honey, in a few days the thin green honey will find its way to the top and can be removed, the remainder, if clover, should be sealed within a week's time, thistle the same, basswood a little longer, and you have an article fit for any man. Keep dark honey from spring or fall separate, never place it upon the retail market, it blocks the way for a more desirable article.

Many more valuable suggestions, will doubtless be thrown out by the discussions; may all have a beneficial effect.

I would suggest that a discussion upon the advisability of placing extracted honey upon the market in a granulated form, then we would secure a uniformity in the appearance of the article. Do our best it will granulate and we would educate the public mind to the fact that if granulated it is above suspicion.

R. F. HOLTERMAN.

Brantford, Ont., Jan. 9, 1886.

FOR THE CANADIAN BEE JOURNAL.

#### ON JUDGING HONEY.

I WAS delighted to see under Mr. Corneil's reply to my query "No. 49" C. B. J., that he "thinks the opinion which has been advanced that honey loses flavor by the escape of its essential oil through long exposure to the air is well founded." I never knew of any one advancing it until I wrote an article upon it in the

*Rural Canadian* and at the North American Bee-Keepers' Convention, I fully expected many would have a gentle laugh at my expense, and they did have, but feeling then as now that the subject is an important one I hope we will hear more about it. My attention was first drawn towards it by practical experience, over one year ago. I saw honey that had been sealed after extracting, of a nice specific gravity. Some of the same honey which had been exposed to the atmosphere until for thickness I never saw its equal. But it had no flavor but sweetness. Reasoning, I decided it was plausible that it was this oil of so volatile a nature which had escaped. I took a sample to the Rochester Convention, thinking I would bring it up, but finally decided to wait another year and test it again as far as I could without analysis. This season I had a similar experience and considered it of so great importance that it was worthy of an article. It may have been spoken of in *Bee Journals*. I know not and care not as long as it will be now. If every bee-keeper would keep his honey from losing this flavor so volatile, he would find it an important factor in increasing the sale of his honey. One week I believe is sufficient time for exposure of extracted clover and thistle honey to the atmosphere and basswood a little longer to suit taste; then seal. It will be seen if this is a fact, the ripening can, or any artifice for thickening honey after it leaves the hive, will fail to give the best results. Mr. Corneil understood my question perfectly, I regret not having put it in a better shape for comprehension. There is so much judging of honey now at fairs that I thought a little light upon how to do it might be of interest.

R. F. HOLTERMAN.

Fisherville, Dec. 18th, '85.

## QUERIES AND REPLIES.

UNDER THIS HEAD will appear each week, Queries and Replies; the former may be propounded by any subscriber, and will be replied to by prominent bee-keepers, throughout Canada and the United States who can answer from experience, as well as by the Editor. This Department will be reserved for the more important questions, others will be answered in another place.

### DO KING BIRDS EAT WORKER BEES.

QUERY No. 53.—Does the King-bird catch worker bees and eat them or does he not? Is his *Kingship* guilty or not guilty?

M. EMIGH, HOLBROOK, ONT.—Yes, guilty.

G. M. DOOLITTLE, BORODINO, N.Y.—I believe him guilty.

H. COUSE, THE GRANGE, ONT.—I believe he is guilty.

S. CORNEIL, LINDSAY, ONT.—I don't know. I never saw one in the vicinity of my bee-yard.

JUDGE ANDREWS, MCKENNY, TEX.—His *Kingship* is thrice guilty, my lord, I have taken him in the *very act*.

DR. C. C. MILLER, MARENGO, ILL.—King birds are scarce here. I don't know that I ever saw one about my hives.

DR. DUNCAN, EMBRO, ONT.—I have shot some of those birds and examined their crop, but only found drones in them.

H. D. CUTTING, CLINTON, MICH.—I have seen the King-bird stand on the platform and eat bees when I knew there were no drones in the hives.

G. W. DEMAREE, CHRISTIANBURG, KY.—The King-bird or Bee martin sometimes eats bees, but I have never known them to prey upon bees except at that time of year in which the loss of a few bees does not amount to much.

PROF. A. J. COOK, LANSING, MICH.—Yes, he *certainly* does. The worker bees have been taken from the bird's stomach. Yet, I believe—it is certainly true here—that the King-bird does no serious harm, and as it does much good, I should not advise that it be condemned.

P. H. ELWOOD, STARKVILLE, N. Y.—I don't know, but think he may occasionally, as do some other birds. We once shot a King-bird from an apple tree in full bloom. He seemed to be catching bees, but on dissecting him we found other insects in abundance, but no bees.

DR. J. C. THOM, STREETSVILLE, ONT.—He does. He may not always eat them, as it is the honey in the honey sack he is after more than the bees. He has been known however to seize queens and drones in mistake, probably, for the workers as he goes on the principle of "Jedboro justice" seizing the first one that comes along honey or no honey.

J. E. POND, JR., FOXBORO, MASS.—I have never known King-birds to eat workers in my apiary, although they exist in considerable quantities in my vicinity; but I have the statement of many others that they do trouble them to considerable extent. I think the weight of evidence is that they do eat worker bees, but I hardly think they do so to sufficient extent to cause any great injury.

S. T. PETTIT, BELMONT, ONT.—Guilty. I know he is guilty, for I have seen him in the *very act*, catching loaded bees as they were nearing their homes. But after all I regard them more

as friends than enemies. I am of opinion that most of King-birds pass their lives without acquiring the habit of killing bees. They breed close to my apiary and I have a good opportunity to watch their habits. I used to shoot them, but don't any more.

ALLEN PRINGLE, SELBY, ONT.—Speaking only for myself I positively and unhesitatingly pronounce the bird "not guilty," and to change my mind, very much stronger evidence must be presented than has ever as yet come before me. On the other hand I have had ocular proof of his innocence. For years I regarded the bird as an enemy about my apiary, and shot him down without compunction as I got opportunity. But finally and fortunately I had an experience with my supposed enemy which quite extinguished the enmity heretofore existing between him and me and at the same time caused me a little pang of compunction when I thought of the powder and shot I had used on him. The experience was this:—One day in August I noticed that a pair of these birds with a brood of young ones just able to fly had invaded the orchard convenient to the apiary. I proceeded with my gun to make a "scatteration." Soon I brought one down with its wing broken, which proved to be a young one. I picked it up, whereupon it set up a terrible squalling. This attracted the old bird which would poise itself in mid-air on wing just over my head and within a few feet of it. I noticed that she would only remain in that position a few seconds and then dart off to an apple tree near by and alight. The bees at this time were passing over the orchard in swarms to and from a field of buckwheat. I soon noticed that just as soon as the old bird would poise herself over my head the passing bees would at once attack her and drive her off to a limb. I was struck with astonishment, and witnessed the scene over and over again, as every time I would make the young bird squall the old one would come close to me and suspend herself on wing, whereupon the passing worker bees would invariably attack her with such fury as to drive her again to her perch on the limb. I noticed the bees would quit her as soon as she would alight. I witnessed this manœuvre repeated so often that there could be no mistake about it. As soon as the old bird would poise itself on wing as many apparently as a dozen bees would instantly and savagely attack her and drive her off to shelter. That the bird really feared those bees, while in that position, and was driven off by them, there was no shadow of doubt in my mind, and subsequent experiences have fully confirmed the conclusion then formed. For me the question stands

settled thus; The King-bird knows drones at sight and will eat them at sight and may possibly very rarely take a queen by mistake, but *never eats living workers*. I think it is Mr. Root who says that bee stings have been found in the King-bird and that this proves he does eat worker bees. If this is a fact it does indeed prove that he eats worker bees or queens, but it does not prove he eats *living* ones.

#### UPWARD VENTILATION IN WINTERING.

QUERY No. 54.—It is claimed by most leading bee-keepers that upward ventilation is essential to successful wintering. Can you explain how it is that oftentimes colonies do come through in good condition without any upward ventilation—in fact when almost hermetically sealed on top?

DR. DUNCAN, EMBRO.—The explanation given on query 55 will explain.

M. EMIGH, HOLBROOK, ONT.—Some of our largest bee-keepers do not want upward ventilation.

S. T. PETTIT, BELMONT, ONT.—I cannot. I have my ideas of the matter but don't think it would help any one to put them on paper.

JUDGE ANDREWS, MCKENNY, TEX.—I believe that upward ventilation, so-called, is hurtful both *summer* and winter, in the South, even.

P. H. ELWOOD, STARKVILLE, N. Y.—Bees do not need upward ventilation. If the surroundings are anywise suitable they winter better without.

G. M. DOOLITTLE, BORODINO, N. Y.—It is not essential when plenty of lower ventilation can be given. I am inclining toward less top ventilation and more bottom.

S. CORNEIL, LINDSAY, ONT.—Because they have good ventilation below or in some other direction. It does not matter so much *how* ventilation is given providing it is ample.

PROF. A. J. COOK, LANSING, MICH.—I think as many say that upward ventilation is not necessary as there are that assert that it is, and I think they may be as correct, if not more so.

DR. C. C. MILLER, MARENGO, ILL.—Probably they had abundant bottom or side ventilation. With enough of this and not kept too warm I have known bees to winter well without top ventilation.

H. COUSE, THE GRANGE, ONT.—Cannot answer from personal experience but believe when

such does occur, you will find the colonies to have been strong, those not exposed to very low degree of temperature also those that have been crowded into small space, thus forcing a downward ventilation and preventing the moisture from condensing in the hive.

H. D. CUTTING, CLINTON, MICH.—I did not know before that *most* of the leading bee-keepers advocated upward ventilation. For my part I use an enamelled cloth on top of the frames when packed for winter with a chaff cushion on top of it; have had no trouble and have not lost a colony in winter for about ten years until last winter. Can give nothing but theoretical reasons and it will occupy too much space in this department.

ALLEN PRINGLE, SELBY, ONT.—If the temperature of the repository is high enough—say from 45° to 55° Fah.—and the colony is strong, upward ventilation is *not indispensable* to successful wintering; but there must be very free bottom ventilation. The explanation is simply this: The thermal conditions of both hive and repository being all right the moisture and other exhalations are effectually dissipated and expelled without any upper passage.

J. E. POND, JR., FOXBORO, MASS.—Ventilation is necessary to animal life in all cases. It does not follow necessarily though that it need be at the top of a bee hive. If a hive is large and is given a large entrance ventilation is carried on just as well from below as it would be from above. In fact the chief object of upper ventilation so called, is not to produce a current of air (which is ventilation) through the hive and out from the top, but to allow the escape of superfluous moisture without the danger of losing heat. I think the above answer gives the explanation asked for; at least it gives the principle which governs the matter.

G. W. DEMAREE, CHRISTIANBURG—In my locality bees will winter just as well with or without upward ventilation. Bees must have air or perish, and it makes but little difference where it is admitted into the hive so it does not produce a draft of air through the hive. Still I have had bees to survive, yes, do well when there was nothing to hinder a draft from passing through the brood nest. In the winter of 1884 I had a colony of bees that wintered well without anything over the tops of the frames except a flat hive cover which was adjusted on the upper story 10 inches above the tops of the frames and bees. These bees survived in good health a dip of 20 degrees below zero, the coldest weather ever known here.

DR. J. C. THOM, STREETSVILLE, ONT.—Give a

hive plenty of ventilation from the bottom and bees will winter well with top of hive almost hermetically sealed. Even with no other apparent ventilation than that provided by an ordinary entrance, they may and do winter well. The possibility of wood allowing a very large amount of air and its contained moisture to pass through is seldom taken into account in treating of ventilation, it would be a large factor in the wintering of bees in ordinary hives, as there could be no possibility of their being "hermetically" sealed or anything like it. In a state of perfect quiescence a swarm of bees would in this way (by transmission through pores) obtain sufficient air.

## SUNDRY SELECTIONS.

USING OLD FOUNDATION.

JAS. KAY.—What will I do with the foundation I had left over from '84. The bees during the past season did not take to it as they did previous years. Each frame put in was like a foundation board to them. I gave them a frame of brood from the hive to each new swarm, also a frame of empty comb and a frame of foundation. They would not draw the latter out and most of the bees went back to the old hive; when I found that I took an empty hive, set it beside a strong colony took out the frame the queen was on and put it in the empty hive also an empty comb and five frames of foundation and nearly all the old bees, and moved the old hive some distance from them. The new swarm was very strong and they filled the hive behind the division board as well as in front of it. I gave them the full complement of frames and they would not draw out the foundation, not drawing out even enough for the queen to lay in, they dwindled down so much that I had to give them surplus honey from the old hive for winter. I do not think I can trust to using the foundation another season. Kindly suggest what I shall do.

Port Sydney, Jan. 6th, 1886.

We cannot imagine what is wrong with the foundation, we have used foundation four and five years old and many others have done so too, and it has been accepted by the bees. Sometimes mice get on foundation and cause it to smell so that the bees dislike it, or it may have been where coal-oil or something else has caused it to have a bad odor. We would suggest your rinsing it in water about 120°, or hold-

ing it by the fire or even placing it in the sun but not allowing it to become warm enough to melt; the water is preferable if there is a bad odor about it. Old foundation may be made as good as new by subjecting it to a heat just under melting point.

#### WINTER FEEDING.

T. E. HARTMAN.—I have been a reader of the CANADIAN BEE JOURNAL since last September and have found a great many valuable things in it. Your recipe for making candy for feeding bees in winter was worth a good deal to me. When placing my bees in the cellar I found quite a number of them light for want of stores, and as I set all such colonies on the top tier I could very easily give them a supply of this candy. Having no feeders I took coarse muslin and made sacks to hold about 8 lbs., I put the candy in and set them on the frames covering all up warm. At first I tried but one colony to see how it would work. On examination next morning I found the bees had clustered round the sack. They will never starve as long as they have a supply of this candy. The past season has been one of the poorest that I have known since I commenced bee-keeping which is five years ago, the cause was the white clover was about all frozen out and it was an off year for basswood. Only 4 swarms issued from 70 strong colonies and no surplus honey to speak of. Some of the colonies had plenty of stores and some none or very little, and the strongest were the lightest so that I was obliged to feed a barrel of Standard A sugar. There are 82 colonies in the cellar, which are very quiet and are wintering finely. The cellar is kept at 45° above zero. The snow has left us and the weather is mild. Will the editor please tell me how he prevents sugar syrup from crystalizing. It gave me considerable trouble last fall, sometimes a few pounds turning to sugar or becoming granulated.

Freeport, Ill., Dec. 27, 1885.

Your plan of feeding, we have no doubt, will work well if the candy is made just right. We do not use any acids in sugar syrup to prevent granulation, but one teaspoonful of tartaric acid to about fifteen pounds of sugar or twenty-five pounds of syrup is said to be a preventative. If the syrup is fed while warm, and the weather not too cold, the bees will take it all up and store it before it has time to granulate.

## THE CANADIAN BEE JOURNAL.

D. A. JONES.

F. H. MACPHERSON

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BEEETON, ONTARIO, JANUARY 20TH 1886.

The weather has modified a little more with us.

Fifty new subscribers received this past week, and they are yet steadily coming in. Thank you all.

The latest effort in bee-literature is the revision of father Langstroth's work which has been undertaken by good hands—Messrs Chas. Dadant & Son.

Bees serve as active agents in the fertilization of plants, and are not destructive in the smallest degree. They are profitable because they gather and store up that which would be entirely lost without their aid.

Twenty-eight pages was what the types made us say friend Heddon's new book contained, whereas *one hundred and twenty-eight* pages is what they should have said. The figure 1 was broken out after the forms had gone to press.

This and next week we will send out over 5000 sample copies of the JOURNAL, and should we send such to present subscribers they will do us the favor to hand them to some bee-keeping neighbor, who does not take it.

On page 620, about midway down the column, it is said "some other friends also presented him (A. I. Root) with a bouquet of flowers." The bouquet was presented by Mr. Atto Kleinow, of Detroit, and he was the only one concerned in the presentation—not friends as was reported. We make this correction in justice to friend K.

Our valued contemporary the *Poultry Monthly* comes to hand with unflinching regularity. To all who keep fowl, no matter how small the number, this journal must be invaluable and being published at such a low price should be in the hands of every fancier. It is a model of typographical neatness, its illustrations are *par excellence* and the reading matter is ably written. Can anything further be desired?

#### SOMETHING ABOUT FOUNDATION.

In cold weather foundations are very brittle,

and it is totally unfit to ship them. There are many of the younger heads who have not learned this by experience, and this item will answer for a letter explaining the reason why to all these. We can make foundation at any time during the winter, but as it is unsafe to ship we do not generally do so. Of course if anyone must have the foundation go with other goods we will so send it, but its arrival in good shape will be at the purchaser's risk.

An Indiana member of Congress, with a bundle of freshly-opened letters in his hand, yesterday remarked: "If there is anything in the world that my people don't write about I don't know what it is. Now look here, selecting a letter from the package, this is a letter from a woman of my district. She writes: 'Dear Sir—My husband left me seven years ago and I have not heard from him since. Will you please go to the census office, get his present address and send it to me. Now,'" continued the member, "here is another from a citizen of my district who requests me to write to the American Minister at Rome, and get him an Italian queen bee."

#### PRICE LISTS RECEIVED.

G. W. Stanley & Bro., Wyoming, N. Y.—Automatic Honey Extractor, Smoker, &c.

A. I. Root, Medina, O.—40 pages—all kinds of implements, with explicit explanation as to use—counter stores, &c.

P. L. Viallon, Bayou, Goula, La. Specialties—early bees, queens, &c.—and hives and all other implements. Friend V. is a good fellow, and deserves success.

#### KIND WORDS.

GEO. F. ADAMS.—I like the JOURNAL very much, and must say that some single numbers have been worth to me the price of a year's subscription.

Peoria, Ill., Dec. 21, 1885.

SAMUEL CUSHMAN.—The back numbers of the C. B. J. received to-day, and I must say that they contain what I would not have lost for ten times the subscription. Have read in one, Dr. Tinker's article on "Bee Diarrhœa," and was very much interested and taken with it.

Pawtucket, R. I., Dec. 21, 1885.

J. K. DARLING.—I don't see how we got along so long without the JOURNAL.

Almonte, Ont., Dec. 31st, 1885.

L. HIGHBARGER.—Do not stop my JOURNAL

when the year is out, as I wish to have it continued. I wish to get some new subscribers. I am well pleased with it.

Adeline, Agle Co., Ill., Dec. 25, '85.

## HONEY MARKET.

CHICAGO.

Without any material change. White comb honey in one pound frames brings 16 cents; very fancy 17 cents. Dark is slow sale. Extracted honey 6 to 8 cents per pound. Beeswax 25 to 26 for yellow, market steady.

R. A. BURNETT.

Chicago, Nov. 27, 1885

CINCINNATI.

There is a very slow demand from manufacturers for extracted honey, with a large supply in the market, while the demand is very good for clover honey in square glass jars. Prices for all qualities are low and range from 4 to 8 cents a pound on arrival. Supply and demand is fair for choice comb honey in small sections, which bring from 12 to 15 cents per pound on arrival. Good yellow beeswax is in good demand and arrivals are fair. It brings 20 to 22 cents on arrival.

CHAS. F. MUTH.

Cincinnati, O. Nov. 10, 1885.

BOSTON.

Honey is selling very well but prices are very low, and we are often obliged to shade our prices in order to make rates. We quote 1 lb. comb, 14 to 16 cents. 2 lb. comb, 12 to 14 cents. Extracted, 6 to 8 cents.

BLAKE & RIPLEY.

Oct. 21, 1885.

### THE BEEKEEPERS' LIBRARY.

We keep in stock constantly and can send by mail post-paid the following:—

BEEKEEPERS' GUIDE OR MANUAL OF THE APIARY, by Prof. A. J. Cook. Price, in cloth, \$1.25 paper, 1.00

A. B. C. IN BEE CULTURE by A. I. Root. Price, cloth, \$1.25 paper, \$1.00.

QUINBY'S NEW BEEKEEPING, by L. C. Root, Price in cloth, \$1.50.

THE HIVE AND HONEY BEE, by Rev. L. L. Langstroth. Price, in cloth, \$2.00.

HONEY, some reasons why it should be eaten, by Allen Pringle. This is in the shape of a leaflet (4 pages) for free distribution amongst prospective customers. Price, with name and address, per 1000, \$3.25; per 500, \$2.00; per 250, \$1.25; per 100, 80c. With place for name and address left blank, per 1000, \$2.75; per 500, \$1.70; per 250, \$1.00; per 100, 50c.

FOUL BROOD, ITS MANAGEMENT AND CURE, by D. A. Jones. Price, 11c. by mail; 10c. otherwise.

BEEKEEPERS' HANDY BOOK, by Henry Alley. Price, in cloth, \$1.50.

A. B. C. IN CARP CULTURE, by A. I. Root, in paper 50c.

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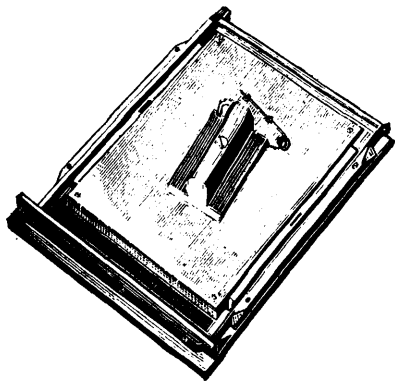
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After 15th May, 25c. less. I would advise the four-frame nucleus as giving the best result.

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Bees by the pound, in lots of five pounds and over, \$1.00 per pound, no queens; if queens are wanted add price of queens.  
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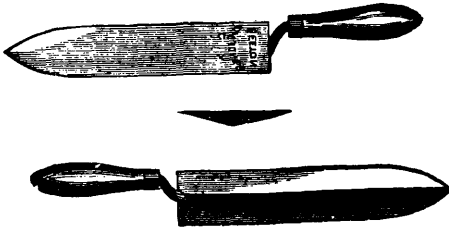
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