

# ...The Canadian Bee Journal

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WHOLE No  
444.

## THE SWEETEST LIVES.

The sweetest lives are those to duty  
wed,  
Whose deeds, both great and small,  
are close-knit strands of an unbroken  
thread  
Where love enobles all.  
The world may sound no trumpets ring  
no bells,  
The Book of Life the shining record  
tells.

By love shall chant its own beauti-  
tudes  
After its own life working. A child's  
kiss  
Set on thy sighing lips shall make thee  
glad;  
A poor man served by thee shall make  
thee rich;  
A sick man helped by thee shall make  
thee strong;  
Thou shalt be served thyself by every  
sense of service which thou ren-  
derest.

—MRS. BROWNING.

## Honey Cookies.

1 cupful extracted honey, 1 pint  
cur cream, stir teaspoonful soda,  
flavoring if desired, flour to make a  
stiff dough.

## Soft Honey Cake.

1 cup butter, 2 cups honey 2 eggs,  
1 cup sour milk, 2 teaspoonfuls soda  
1 teaspoonful ginger, 1 teaspoonful  
cinnamon, 4 cups flour. — Chalou  
s.

Annual  
Meeting

BEE-KEEPERS'  
ASSOCIATION  
OF ONTARIO

Mr. Evans: This is one of the most important discoveries I have yet heard of in connection with foul brood because even though we should continue to practice the starvation plan, this would be of great service in disinfecting hives and combs. With regard to combs from hives that die, we are doubtful whether we can use them again, and this system would at least save these and make them so they could safely be used again.

Mr. Hall: May I ask Prof. Harrison, when you speak of capped cells, do you mean capped honey or capped larvæ?

Mr. Harrison: Capped larvæ.

Mr. Darling: I would like to ask Professor Harrison if the bees were disposed of how we would manage with combs that have live brood and larvæ?

Mr. Harrison: In that case I suppose they would suffer the same fate as the foul brood germs.

Mr. Gemmel: This treatment is for combs only of course?

Mr. Harrison: Yes.

Mr. Gemmel: It would certainly

be a grand thing if we could keep combs we are not very sure of and fumigate them by that process and be sure they are all right. Of course it is going to be a still greater advantage if we can destroy the spores in the larvæ.

Mr. Evens : I think it would be of great importance to have some experiments made by shaking the bees out of a hive into a foul broody hive and after the experiment put them back again and see how they work.

Mr. Hall : You can set them aside for three weeks until all the larvæ is hatched out and then you can keep combs and all.

Mr. Smith : Does the experiment you speak of make the combs any ways objectionable to the bees ?

Mr. Harrison : No, the smell soon passes off ; you can place the most delicate silks dyed by delicate aniline dyes in this vapor and they will not be hurt by it.

Mr. Smith : Have you experimented in the event of foul brood larvæ dying in the cells, do the bees remove that sufficiently ?

Mr. Harrison : As a rule I don't think they remove it ; it dries down there in a sort of dry scale ; I have often found it containing foul brood germs.

Mr. Darling : Would this vapor kill all the germs in that dry scale ?

Mr. Harrison : Yes. The scale was not perfectly dry but it hadn't sufficient moisture in it to string.

Mr. Gemmeil : Do you think it is possible to kill the germs in combs that have been drying down for two or three years.

Mr. Harrison : It is better if there is a little moisture present undoubtedly, because I think the gas joins with whatever moisture may be present and you get the disinfecting effect from it

Mr. Darling : Is there any danger of explosion from it ?

Mr. Harrison : No.

Mr. Brown : You would consider those combs perfectly safe to return to the hives ?

Mr. Harrison : Yes. I have made a careful examination and found nothing. You can control it absolutely.

Mr. A. Laing : As I understand, the combs are perfectly cured of foul brood germs when Professor Harrison is through with the experiment. If such be the case, as I understand why can't the bees be put back on those combs for say a period of probably ten days or a couple of weeks, then shake the bees off again when the honey which they would have in their honey sacks, which might have been infected with foul brood, would be stored in the cells, then treat the combs again and putting the bees back on them again.

Mr. Harrison : You would have the same disinfecting effect.

Mr. Laing : You would have the bees clear of it also ?

Mr. Harrison : Yes.

Mr. Laing : I think probably by this second treatment we would accomplish the same object as by the present methods and get an absolutely perfect cure of the disease ; and this certainly would be a much cheaper method than the way we are doing the work at the present time.

Mr. Gemmeil : Why not shake the bees from the combs and put them onto starters and allow them to remain there ?

How long were the combs away from the bees altogether ?

Mr. Harrison : Oh, they might have been away eight or ten hours.

Mr. Hall : In that case, Professor you would kill all the brood ?

Mr. Harrison : These were very

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bad; they were the worst I could get.

I fancy you can stop the growth of the germs in the hive by feeding them some formic acid with sugar syrup. I kept that up for three or four weeks and I could not produce the disease even when I was putting in spores by the million so long as I supplied the formic acid, but directly I took it away the disease appeared at once.

Mr. Hall: We are so busy in our honey season for that, it would cost us too much to do it; by shaking them off onto foundation, that is, onto starters, they are cured so far as they are concerned; then you have to attend to the brood. After that the bees are hatched out and we can shake them off or burn them as we choose.

Where I see the benefit comes in is in being able to save the combs that we don't care to melt up.

Mr. Harrison: Yes.

Mr. Holterman: The question of foul brood is one in which I take an interest and I believe that as far as bee keepers are concerned there is a tendency to despise scientific investigation. We do not perhaps do it in words but we have these investigations and we practically ignore them and go on with our old methods. Now if we are going to advance in our methods in bee-keeping, we can't do that, I believe, any faster than when we try to combine practical knowledge with science, and in this investigation that Dr. Harrison has made you have as a result, as Mr. Hall has said, that we will be able to use combs that have foul brood germs in them, or may have them in them, without risk of contagion. Now as far as saving the brood is concerned, that can be done as before, and then when that brood hatches out, then if there is any

capped honey I should say extract it and then disinfect the combs and we can use them again.

As far as Mr. Laing's statement goes, I see this difficulty. If you return your bees at once to those combs they put the honey into the cells and the second time when you shake the bees from it the chances are they may again take some of the infected honey and you couldn't get rid of the disease.

Mr. Laing: That would apply in the McEvoy method also.

Mr. Holterman: Not to the same extent because there are no full combs in which they can store the honey.

Mr. Harrison: I might say that we are always pleased at the Agricultural College to undertake investigations along these or other lines in which you may be interested; for instance, in insect pests or in any line of chemistry. The only thing in which we ask your indulgence is this, that it would be manifestly impossible, with the strength of the staff at the College, to investigate for every person what was troubling him particularly, but when you see a disease or a pest which is bad in your district, which is affecting not only yourself but others in that district, and where you conceive that it is for your own good and for the good of others around you, then we shall always be pleased to act, and not only to give you advice but to make a personal visit and to thoroughly investigate it. It is only by your hearty co-operation in matters of this kind and by supplying us with such material that we can help one another. You help us by sending us this material for study and we can help you probably by means of our facilities, and possibly by greater expert knowledge. Where a person is in a certain line or where he is specializing in it, where he has sour-

ces of information at his disposal which are not at yours in the matter of books, laboratory appliances and so on, then I think probably it would be to your advantage as well as ours to co-operate in this matter; and we shall always be pleased to do it, whatever department it may be in, whether it be etymology, or a question in agriculture or chemistry or bacteriology in connection with diseases, or any other item that may come up. (Applause)

Mr. Frith: You have just carried on the experiment for this year in regard to the foul brood?

Mr. Harrison: No; I have been working at it for five years.

Mr. Couse: I think it wise since the Professor has offered to do certain work for us for our benefit and for the benefit of the Province that we should take some action. The Professor is very anxious to get hold of samples of black brood, if it is possible, and I would move that the President for next year or the executive committee—even if it is necessary to take funds to do it—procure samples of black brood from the State of New York or wherever they can obtain them and send Prof. Harrison samples so that he may experiment with them.

Mr. Evans: I don't think we should do that. If we have not got black brood here in Ontario do not let us import it. We do not know what effect it may have coming through the mails.

I enquired of the inspector a year ago if we had it and he told me we had had it for ten years. If we have had it for ten years we ought to be able to get samples of it in Ontario, without importing it.

Mr. Holmes: While seconding the motion I would like to ask Prof. Harrison if he does not think it would be important, in the event of

that being carried out, that the samples be sent direct to himself, rather than being sent to members of the Committee and inspected in different places and then forwarded to him. Would there not be a danger?

Prof. Harrison: It would be better to send them direct.

Mr. Couse: It is my idea to have them sent direct to the Professor but let the Committee find out where they can be obtained.

Mr. Gemmell: Mr. McEvoy, is it necessary to send to the other side to get samples of black brood?

Mr. McEvoy: No.

The President put the motion which, on a vote having been taken, was declared carried.

The President here called upon Mr. J. B. Hall who, on behalf of the Oxford Bee-Keepers Society, presented an address of welcome to the Association assembled. He dwelt upon the valuable work the Ontario Association had done for bee-keepers and bee-keeping, connecting the name of Mr. R. McKnight, of Owen Sound, as father of the organization.

Mr. J. D. Evans replied suitably on behalf of the Association, thanking Mr. Hall and the Oxford Bee-Keepers for their cordial reception.

#### MANAGEMENT OF OUT APIARIES AND PREVENTING OF SWARMING.

(Paper by Mr. H. G. Sibbald.)

Your committee could not have struck a subject more difficult to write upon, and yet of such live interest to the progressive bee-keeper of the New Century. Mr. Hutchinson called it the most hopeful field to which bee-keepers can turn their attention and says, "Keep more bees," which means "Out Apiaries."

There was a time when extracted honey brought from 15 to 20 cents per pound and comb honey was proportionately high. When the fores-

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were plentiful and filled with basswood, that grand honey tree now almost extinct, and while droughts were frequent, these forests retained moisture and also sheltered and protected our most valuable honey plant, the clover.

Now new and undesirable conditions prevail. Prices of honey have declined. Forests have been cleared away. Droughts are all too common, and our clover is frequently winter killed which makes the production of honey a more uncertain and less desirable occupation. Honey crop failures occur with but too frequent regularity until the apiarist with 80 to 100 colonies, depending on them for a living, finds himself "poor indeed," and must of necessity turn his hand to something else that will combine with bee-keeping and aid him in making a fair living, or at least in helping to keep the wolf from the door. Fruit farming, poultry and other things have been tried with varied success, but almost invariably to the detriment of the honey bee and the loss or sacrifice of the honey crop.

This seems to be an age of specialists, and our thought, time, and attention must be concentrated upon one thing to make the greatest success possible of it. This can only be done and the above noted conditions met by increasing the number of colonies, so as to make provision in the fat years against possible lean ones. But the difficult part is to tell you how to do it, and a saying I've heard comes to me and seems quite appropriate. It is "The more I know, the less I know I know the less," and so I venture to give help to this new hopeful field with fear and trembling. To commence with, our apiaries should be within driving distance and yet three or four miles apart. A suitable yard with buildings adjoining,

and cellar if possible must be found, if with friends who will take a kindly interest and prevent molestation, all the better.

The uncertainty of honey crops and the difficulty of securing competent help at the right time makes it desirable that some system of management be adopted that will not require constant attendance of anyone in the apiary. We must therefore clip all queens to prevent absconding swarms, while we bring all means in our knowledge and power to bear on the prevention of swarming, which is advantageous in any case, whether one yard or more are kept.

The first step toward this end might be to have young queens of a non-swarming strain (if such exist), or at least chosen for their virtue in that direction.

The second step might be to equalize all colonies in fruit bloom, checking the strong and helping the weak so as to have all as nearly as possible in the same condition, so that a yard can be manipulated together, all supered at the same time, extracted the same time, etc.

The cause of swarming, as far as I understand, is the natural instinct of the bee when crowded and a honey flow on; so that it will be seen that the third step would be to anticipate their condition and wants and provide room before they feel that they are crowded. This necessitates having plenty of combs ready; two sets for each hive will be found convenient and almost necessary. The first supers may be put on at the close of the fruit bloom if our bees are reasonably strong, and the second one shortly after the clover flow starts and before the first are nearly full. All hives ought to be blocked up from the bottom board to allow ventilation, either using a wedge or blocks behind. Shade trees will be found

helpful, sun caps also, to keep the hives shaded.

Then our real work commences and we must get a move on to keep pace with our industrious pets. All work must be quickly done and any tinkering or slow methods dropped; wholesale manipulations must take their place. We must study the actions of the bees so as to guess their condition by a glance at the entrance and a peep in the supers. If they are working well at the entrance and storing honey, all is well. More room may be provided, but if they are hanging out, sulking, acting queenless and not working, when other colonies in normal condition are doing well, an examination of the brood chamber is necessary, which may reveal queen cells started, no eggs, probably queenless, etc. It is useless to try to tell you what to do in such cases. Time will not permit, and besides these little details are known to all.

By visiting an out apiary once a week and running over it in this way you will catch nearly every swarm and spend very little time over it.

Unexperienced help can be procured to help in extracting and a splendid crop can soon be harvested if secured by the bees.

#### Fowls' Honey Fruit Cake.

$\frac{1}{2}$  cup butter,  $\frac{3}{4}$  cup honey  $\frac{1}{3}$  cup apple jelly or boiled cider, 2 eggs well beaten, 1 teaspoonful soda, 1 teaspoonful each of cinnamon, cloves, and nutmeg, 1 teacupful each of raisins and dried currants. Warm the butter, honey, and apple jelly slightly, add the beaten eggs, then the soda dissolved in a little warm water; add spices and flour enough to make a stiff batter, then stir in the fruit and bake in a slow oven. Keep in a covered jar several weeks before using.

#### DISTRIBUTION OF FREE SEED.

To the Editor of the C. B. J.

Dear Sir,—By instructions of the Hon. Minister of Agriculture another distribution will be made this season of samples of the most productive sorts of grain to Canadian farmers for the improvement of seed. The stock for distribution is of the very best and has been secured by the Director of Experimental Farms from the record-breaking crops recently had in the Canadian North-west. It will be worth while for farmers generally to renew their seed of oats when varieties which have produced more than 100 bushels per acre can be had. The distribution this spring will consist of samples of oats, spring wheat, barley, field pease, Indian corn and potatoes. Every farmer may apply, but only one sample can be sent to each applicant, hence if an individual receives a sample of oats he cannot also receive one of wheat, barley or potatoes, and applications for more than one sample for one household cannot be entertained. These samples will be sent free of charge through the mail.

Applications should be addressed to the Director of Experimental Farms, Ottawa, and may be sent in any time before the 15th of March after which the lists will be closed so that all the samples asked for may be sent out in good time for sowing. Parties writing should mention the sort or variety they would prefer and should the available stock of the kind asked for be exhausted, some other good sort will be sent in its place.

WM SAUNDERS,  
Director Experimental Farms  
Ottawa, January 15th, 1902.



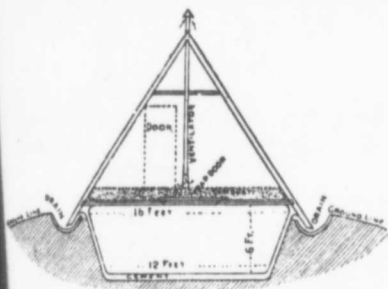
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## THE VENTILATION OF BEE CELLARS

By  
E. R. ROOT,  
in  
"Gleanings"

The following article by Mr. E. R. Root, in "Gleanings", describes the construction of T. F. Bingham's cellar, and also gives the rather adverse views of Mr. Doolittle and Mr. Bingham on the question of ventilation.



The Bingham Cellar

As indicated in the diagram, the cellar is 16 feet square at the top, and 12 feet at the bottom. The sides are sloping (to prevent caving in), and lined with cement. A double floor, packed with sawdust, covers it, and over this is a gable roof. Through this floor there is a trap-door, and along about the center a 16-inch ventilating-flue connects through the top of the cellar to the roof in the super structure. Mr. Bingham's idea seemed to be that the bees need a great deal of ventilation. In the drawing the ventilator is shown to be only about 16 inches in diameter; but as he explains, this was not found to be large enough, and was subsequently replaced by the larger one. Our cellar at the out-yard was

built on the same general plan, with the exception that the sides are less sloping, and are lined with a single thickness of hard brick laid in cement—that is, the sides are lined with a 4 inch wall. In our clay soil we were afraid to trust the cement lining; but to strengthen the wall further, the sides and ends were made slanting, so that the top of the cellar is 8 inches wider and longer than the bottom.

Instead of constructing a plain cheap gable roof we moved a building which was out of use, over this cellar, put in it a double floor packed with sawdust 10 in. thick, this floor serving as a ceiling to the room below. The building had been constructed and bees put into the cellar, before I happened to think that no ventilator had been provided; then remembering that some of the prominent advocates of indoor wintering had said that no ventilation, or but very little, was required, I began to wonder whether any was really needed. I accordingly wrote to Mr. Doolittle (a no-ventilator man), who had used successfully for a number of years a bee-cellar built on the side of a hill, having walls somewhere about 20 inches thick. I explained the construction of our cellar, and asked him if, in his opinion, a ventilator would be needed. This is his reply:

Mr. E. R. Root:—I have made no provision for ventilation of my underground bee-cellar for the past 15

years. It is 24x7, and 7 feet deep, and I winter from 60 to 85 colonies in it each winter with good success. The walls are of stone mason work, 16 inches thick, and the top covered with 4-inch-thick flag-stone, with 3 feet of dry earth over this. But the joints between the flag-stones are so open that a little dirt sometimes sifts through. Then, of course, a little air gets in through the four doors used for the entrance. I suppose you will have an entrance also with doors. If so, the only question would be whether your double floor, packed with sawdust, will give less ventilation than my flag-stones. I confess to not being able to answer that question satisfactorily in my own mind, as dry dirt is quite porous, and the cracks between the flag-stones are large enough to stick your finger through in some places.

On one still, damp, misty time, holding on a week, I went into my cellar, and the air was so impure that the candle would not burn; and, when nicely burning between the entrance doors, it would fade away and soon go out on going into the cellar. It seemed a little hard for me to breathe, but the bees came out all right. This was the only time but that the air had seemed pure. At the time the candle would not burn there was four feet of wet snow all over the whole ground, roof and all. Just what advice to give you I hardly know; but if your cellar were mine I think I would risk it without a ventilator; but I do not feel like advising you to do so. Perhaps my experience as given above may help you a little in deciding what to do. I know nothing personally of clamps.

G. M. DOOLITTLE,

Borodino, N.Y.

On receiving this I sent copies of it to Dr. Miller and Mr. Bingham.

Concerning this matter, Dr. Miller writes:

Dear Ernest:—I've studied over the problem as to your cellar quite a little, but without feeling competent to advise. With the right kind of soil and covering I think there would be no need of special attention to ventilation. But if conditions were not all just right the results might be disastrous. Perhaps the safe thing to do would be to have the shaft put in and closed up just as if no shaft were there. If all went well it could be left thus all winter, and you would practically have no shaft. But if an inspection every two or three weeks would show that the danger line was reached, then you could open up the ventilator. The point is that, with the ventilator you can do either way, and without it you are helpless if it should be needed. The temperature and the number of colonies have something to do in the case.

C. C. MILLER

Marengo, Ill.

Following is the letter from Mr. Bingham:

Mr. Root:—Your esteemed letter is at hand, also Doolittle's. The door on the level of the floor of the cellar, and the difference shown by his candle, would demonstrate that the carbonic laden air found a place where it could be mixed with pure air at the door. My experiment with a three-inch tin conductor opening into the room over the cellar demonstrated that, under such conditions, it would not be safe to enter such a cellar or any other place where a lamp would go out. I was able to see his bees now and then.

If a 16-inch-square flue does reduce the temperature below 32°

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iller (and mine did not as low as that last winter), it would seem needless to endanger oneself, even if the bees were not injured by an air-tight cellar. It may safely be borne in mind that a cellar entered from the top would not have as reasonable opportunity to mix its vitiated air as one with an entrance on a bottom level.

My bees were taken into my cellar yesterday afternoon, Nov. 15. The temperature is about 35 deg., flue and doors above them open. The upper room has two large ventilators, one at each end darkened partially, and located at the point of the gable.

If the temperature should fall below 30 deg. my doors will be closed. At 32 to 40 deg. the light does not seem to cause the bees to fly out. It would be a nice temperature outside. Your cellar being new would need more constant ventilation than older. My ventilating-flue stops in the ceiling-floor. Said floor is supported on 6-inch joists on lower side of said joists, covering a space

about 4 feet square. Thick building paper, two thicknesses, is secured by cleats. This leaves two 4 feet by 6 inch entrances as a supply for the bees, and no light is let in. The top of the flue has a cap over it to keep out dirt, rags, and rain.

The greatest enemy to wintering bees in doors is dampness, either in the air or hives. The reason why my bees under the machine-shop were so quiet was because so dry with sweet good air.

I intended to put in another duplicate flue before my bees went into cellar, but was so busy I did not. I were to build another cellar I would double the size and increase the height of my flue ventilation all would.

It is the upper air in a cellar that needs removal. The steam and dampness are there while the lower

stratum of air remains ready to supply the flue-draft, which is proportionately greater according to its immense elevation. This is not the sub-ventilation idea, you see. The lower stratum is all right if sufficiently mixed with air that goes down the flue from an altitude of 20 or more feet. The flue does not reach below the ceiling, or be away from the center of the cellar. A flue reaching to the bottom of the cellar showed a temperature at its lower end nearly equal to that outside, while the general air of the cellar remained at 40 to 45 deg. a few feet away from the inlet, and the air was stuffy and damp. The large tall flue enables the cellar to be kept dry and cool without admitting light. This is valuable when bees become uneasy from any cause, most noticeable in the spring. Mr. D., I think, has been in the habit of opening his doors at night in spring. The large tall flue from the ceiling would have prevented that. That others have found foul air in cellars, and not reported, shows the value of bee-journals, all of which placed my lantern experience before the bee-keepers at once as soon as received.

T. F. BINGHAM,

Farwell, Mich.

P. S.—Nov. 18.—Clear, 25 deg. at 6 a. m.; air in cellar, doors open, betters it, and the room above 35 deg.; room above cellar, 32 deg.; doors all around open all day the 17th; cellar at 40 deg.; bees hibernating peacefully, as if outdoors; no effort to fly to the open doors.

T. F. B.

It appears from these letters that much depends on special conditions. Taking the advice of Dr. Miller I have had a ventilator put in. But this was made before the receipt of the letter from Mr. Bingham, and is only 6 inches square instead of 16;

and I am now wondering whether I have made it large enough. If I had it to do over I would make it fully 16 inches square as described by Mr. Bingham, and will do so later if the bees become uneasy during winter.

But the special feature of the Bingham cellar is that it is virtually a cistern—that is, the walls of the cellar proper are all under ground, without any part of them projecting to the outside air to get through, thus affecting the outside temperature inside.

Our experience in wintering bees in the machine-shop cellar last winter was most favorable; indeed, I never heard or read of a case where there were so few dead bees as we had on our cellar bottom. As Mr. Bingham points out, it was absolutely dry, and then it received a great amount of ventilation from the larger cellar surrounding the wintering room; and, as I have before stated, the larger cellar contained several carloads of potatoes, and it was necessary to keep the temperature down for these as low as possible. During warm weather the cellar was kept closed to keep out the warm air. In cold weather it was ventilated and that quite often. Perfect ventilation and an entire absence of moisture or dampness, resulted in the phenomenally good wintering of all the bees. This year we have them in that same cellar 250 colonies instead of 40, and about the same number outdoors. These are in addition to 100 colonies in the Bingham cellar in our out-yard.

It is my purpose to make repeated observations to determine the effect of ventilation or no ventilation, and report through these columns.

Honey is used in medicines and is the base of many of the cough cures and salves.

## THE BUFFALO CONVENTION.

of National Bee-Keepers' Association, U. S.

(Continued from page 154.)

### FUMIGATING COMBS WITH BISULPHIDE OF CARBON.

"How soon may combs that have been fumigated with bisulphide of carbon be given to bees without killing the bees?"

Mr. Benton—-I have frequently used bisulphide of carbon and used the combs an hour after that; but if you put a whole colony of bees in, there would be a chance of killing the bees. I don't think there is any danger in a few hours. It evaporates very rapidly.

Mr. Abbott—-I don't think that bisulphide of carbon would affect anything in 3 minutes after if it is not confined. Bisulphide of carbon won't affect anything if it is not confined, and you can pour all the bisulphide you please on a comb in the open air and it will be gone in three minutes, and I don't see how you could kill the bees without it being confined.

Mr. Benton—The odor would be disagreeable; I don't think it would kill them.

Dr. Miller—I would like to ask this question: Does bisulphide of carbon kill the eggs of the bee-moth?

Mr. Benton—I think it does. I have never had them develop in combs that were thoroughly subjected to bisulphide of carbon. I would stack up eight or ten hives and put half a pint of bisulphide in there and let it stand several days; some of those combs that had stood two or three months in hot weather; there were eggs there I know because other combs developed.

Dr. Mason—I had some extracted combs that I noticed the worms working in, and I piled them up a

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put a teaspoonful of bisulphide of carbon, in a dish on top of the frames and in two or three days when I examined them there wasn't a sign of any worms but dead ones.

Dr. Miller—We have been using sulphur, and now we are told bisulphide of carbon is better, and we want to know how much better. Now in using sulphur, if the combs have in them the larvæ of the bee-moth, I wish Mr. Benton would tell us in a single word what we can use. At any rate, these worms, when they have attained any size—say if they are half an inch or an inch long—you may sulphur them so thoroughly that you will have everything green, and those big fellows will still be alive and happy after they come out again. Now, will the bisulphide kill these chaps?

Dr. Mason—It will kill every one of them, every time. I overlooked a hive this summer that had wormy combs in it, and when I discovered it they were great big fellows, and in an hour's time after using the bisulphide every one of them was dead.

Mr. Barb—I would like to ask Mr. Benton whether he applies that bisulphide above or below.

Mr. Benton—On the top, because it is heavier than the atmosphere. I use an empty super there and set a tin can in there—perhaps half a quart, or teacupful, for quite a stack of combs.

Mr. Hutchinson—Has any one used gasoline for killing moth-larvæ? Pres. Root—We have used it for killing ants. We made holes in the combs and poured gasoline in instead of sulphur. I used sulphide of carbon to kill ants.

Dr. Miller—The statement was made in an obscure (?) journal, (I think it is called Gleanings), the statement was made that it had been used to kill the larvæ of the bee-moth, and in connection with

that the editor stated that he had used it to kill ants.

Dr. Mason—Will the sulphur fumes kill the eggs?

Dr. Miller—No, sir.

Dr. Mason—Well, the bisulphide will, and there is no sense in using sulphur when you can get bisulphide. Now I pile up the hives as high as I can reach, eight or nine. I don't think I poured over two teaspoonfuls in, and it killed every worm.

W. J. Craig, of Ontario—I have been making some experiments with the bisulphide, and have piled the hives up in the same way, but I found that the eggs developed into grubs, inside of a week, while it killed the larger larvæ. At the same time, when I used the drug in an airtight vessel it killed the grubs and destroyed the vitality of the eggs as well, but with piling the hives up I found that only the grubs were destroyed.

Mr. Benton—Of course, it would be better to be absolutely airtight.

Mr. Craig—I am sure that I used two ounces of the liquid to ten supers and I put it top and bottom.

Pres. Root—Then you probably had only a ounce on the top, if you divided the amount. That would hardly be sufficient, would it, Mr. Benton?

Mr. Benton—I think it would be if of good quality.

Pres. Root—We have found a good deal of difference in the quality of the bisulphide. Sometimes we have had it good and sometimes bad.

Mr. Benton—I would like to state that it is highly explosive, and if this were used in a room one should never go into the room with a lighted lamp, or candle, or pipe, or any fire whatever. It is to be handled with great caution.—Condensed from the A. B. J.

THE  
CANADIAN BEE JOURNAL

Devoted to the Interests of Bee-Keepers,  
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(LIMITED)

**BRANTFORD - CANADA**

Editor, W. J. Craig.

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FEBRUARY, 1902.

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**EDITORIAL NOTES.**

Hon. Eugene Secor, Forest City, Iowa, has been re-elected general manager of the National Bee-keepers' Association, U. S.

Mr. G. A. Deadman writes: "I regret very much not being present at the Woodstock Convention. Glad to hear that it was such a success, and that "one of the boys who was there" reports that there was a notable absence of tobacco spitting, etc., so common at large gatherings. I have had the impression for some time that bee-keepers as a rule are not tobacco users nor good customers at "the bar," and am pleased to have this belief confirmed."

What promises to be one of the most extensive bee-keeping enterprises in the Dominion of Canada has recently been started at Bow Park Farm, three miles from Brantford, by the Bow Park Co., Limited, and placed under the able management of Mr. R. F. Holterman, late editor of the C. B. J., who has re-entered bee-keeping circles.

Under Mr. Holterman's supervision a bee-house has been erected with work-shop, extracting room, storing rooms, etc., and with bee cellars having a capacity for wintering over 500 colonies of bees.

Two weeks ago we had the pleasure of visiting the yard in company with Mr. Morley Pettit of Belmont, and examining the arrangement of the cellars which are fitted up with the most perfect system of ventilation we have yet seen. The pure air is received in a cowl which always faces the wind, at the top of a galvanized iron pipe 30 feet from the ground. This atmosphere is tempered and dried by passing through glazed tile underground pipes, and is further tempered in a stove room into which it is discharged, and therefrom distributed to the different compartments. The foul air is taken up by pipes and carried out finally by a large galvanized iron pipe with a suction cowl at the top having its back always to the breeze.

The bees seem to be wintering perfectly, all clustered and still without the least trace of moisture on any of the hives, and remarkably few dead bees on the floors.

Mr. Shuttleworth, the enterprising General Manager, is much interested in the new department, his keen business ability and connection with home and foreign markets gives the Company a decided advantage in handling and disposing of large quantities of honey.

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the Company purposes going in largely for queen breeding, a branch of business in which Mr. Holterman has before been eminently successful; Carniolan and Italian queens will be raised under the most favorable conditions from select stock.

Nothing is done on a small scale at Bow Park. The farm consists of about 1000 acres of rich, alluvial soil, is beautifully situated, and almost surrounded by the Grand River. The farm buildings cover something like seven acres of ground, and are continually being added to as the Company's extensive operations demand. In one of the buildings which we passed through, 100 steers were being fattened. The clerk, Mr. Frank Adams, (who, by the way, was the first to catch the bee fever) informed us, that they have 200 head of cattle, 300 sheep, and 1300 hogs being cared for under the Superintendship of Mr. N. D. Foulds.

Besides the cultivation of roots and vegetables for the livestock on the farm, large quantities of cauliflower, cucumbers, onions, etc., are grown for pickling purposes. Mr. Adams informed us that about 100 acres will be devoted to these this season. This department is ably superintended by Mr. F. W. Austin. We have pleasure in showing, as our antispiece a picture of one of their large fields of cauliflower when under cultivation.

The Company have our best wishes for the success of the new department.

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**FOUL BROOD.**  
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**BACTERIA AND THEIR RELATION TO DISEASES.**  
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When bacteria simply grow and multiply, the growth is said to be vegetative ; but if the conditions become unfavorable to growth from lack of food, or other cause, the bacteria commence forming spores, analogous to the resting spores of fungi or algæ. The spores are round bodies of small size, and in photographs they appear little dots among the rod-like bacteria. The spores have wonderful powers of resistance to those deleterious agents that quickly destroy the vegetative bacteria. The spores are, therefore, more dangerous than the bacteria, and in microscopic examinations the stage of the disease and the gravity of the case are decided upon the number of spores found to be present in the matter examined. The spores get into the honey and the bees transfer them to the larvæ, in which they soon commence growing. There is a period of incubation, however, connected with the spore's attack on the larvæ, and the bees seal many of the cells supposing the inmates to be intact. A spore can only cause disease by starting vegetative growth. Germicide remedies are considered to be efficacious in curing foul brood before extensive spore formation has taken place ; but it is by no means certain that the continual use of germicides is beneficial to the bees. No germicide is capable of arresting the growth of the bacteria in the larvæ, without killing the larvæ, just as no germicide has been found capable of arresting the growth of the tubercle bacilli in animals without killing the animals. The best and safest germi-

cides in foul brood are the bees themselves. If we cultivate the bees more and the bacteria less, spores will not be so abundant in the hive, and the bees will be able to attend to them.

If bees were like silkworms, Pasteur's treatment for the diseased worms would, no doubt, effectually stamp out foul brood from the apiary. But the bees fly around a good deal, and if they have not trouble at home they will borrow or steal it from their neighbors.

It is a remarkable fact that the idea of curing infectious diseases with germicides never entered Pasteur's mind. He never for a moment thought that he could teach nature anything. There is an old woman living near me, who undertakes to cure cancer by dropping some kind of fluid on the sore. She has not only one successful case to boast of but several dozen, and still no intelligent person believes for an instant that she ever cured a case of cancer.

Bees protect their colony from bacteria by carrying away from their combs and the immediate surroundings all particles of organic matter in which bacteria might possibly grow. When work is commenced by the colony pollen is scattered around the interior of the hive in every direction. The pollen deposited in the cells of the combs and mixed with honey is safe from the growth of foul brood bacteria, but the bacteria will grow in some kinds of pollen if not mixed with honey. The bees, if they can reach them, will remove from the hive all grains of pollen dropping outside the cells. If we tie a handful of chaff in a cotton or linen bag, and place it in the hive or in a recess connected with the hive, the bees will cut a hole in the bag and carry out of the hive every particle of the chaff, and then the bag and the cord

we tied it with. If we tie the chaff in a wire gauze bag the bees will plaster it over with propolis and wax endeavoring in that way to protect the colony from some dreaded evil.

When bees are located in a straw hive they try by plastering over the interior to make it a safe habitation, but they very rarely succeed. Pollen grains lodge in the interstices of the straw and supply the bacteria with food, where moisture and temperature favor their growth, so that the bacteria in time get the advantage of the bees and destroy them. Thousands of men have tried to make bee-keeping profitable by multiplying colonies in skeps. The skep and the floor board cost about a shilling, and if swarms could be sold at half a crown and wax at the market price, the honey could be fed to the pigs, and bee-keeping be made a profitable industry. The scheme, however, never succeeded, but always "ganged agly." No large apiary in skeps has ever existed in Ireland. The enemy is too near, and always waiting the opportunity.

Woodhead states that on the authority of Vignal that the bacillus alvei is an inhabitant of the human mouth—that great home of the bacteria where Leuwenhoek first discovered them. It is well, therefore, in working among bees to remember that human saliva can infect, and can start foul brood, and if the conditions are favorable to the bacteria can destroy all the colonies in the apiary. A spark, if it can ignite the fire, is just as effectual as a torch-light.—A. W. SMITH, M. D., Donaghadee, in Irish Bee Journal.

(To be Continued.)

#### Soft Honey Cake.

1 cup butter, 2 cups honey, 2 eggs  
1 cup sour milk, 2 teaspoonfuls soda  
1 teaspoonful ginger, 1 teaspoonful  
cinnamon, 4 cups flour.

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# ADAPTATION TO BUSINESS IS NECESSARY TO SUCCESS

BY A YORK COUNTY BEE KEEPER



About every time I look over the monthly lists of business failures, as recorded by Bradstreet and other commercial agencies, the thought comes to me, "what has been the cause of these misfortunes?"

While no doubt many are led into financial difficulties through the dishonesty of others and various other circumstances over which they have no control, yet from my limited observation I am led to believe that more failures are brought about from lack of adaptation to business, be what it may, than from all other causes combined. I believe many are "gamboling" behind the business counter, at the pulpit and desk, working in a half-hearted way, who would have made a grand success behind the end of the plow handles, while many who are trying to farm would, with a little business training, have made their mark in some of the different mercantile pursuits. Taking it all in all I think one of the most important things for a young man starting out in life to decide, is the question, "what to do and be happy while doing it," as Mr. A. I. Root has so aptly titled his little book on the subject. Andrew Carnegie advises young men who have the chance to become proficient in at least three different branches of technical education. The moral is obvious.—If you find he is not adapted to one thing, engage in another.

To be more specific, let us look for a moment at the different branches of agriculture, something no doubt most of us are familiar with. We

see one man making a specialty of thoroughbred cattle. By judicious selection of breeding stock, proper attention to feeding, stabling, etc., they pay him big interest on capital invested. His neighbor goes into the same business and fails. He will tell you "Cattle don't pay."

The same things might be said about lines of stock, horses, hogs, etc. One man will make a success with poultry; will have the egg basket full when eggs are dear. His neighbor will have hens, but no eggs till spring. He will tell you he has "Ten cent hens," and "Poultry don't pay anyway." When we see these things we are apt to be uncharitable and say that so and so lacks management, is shiftless, lazy or some other uncomplimentary descriptive adjective, but for my part "Lack of adaptation" in the most of these cases will cover a multitude of sins.

The writer was brought up on a farm and from my earliest recollection I never had any liking for the care of certain lines of stock, and to-day if I had the capital, would not think of raising thoroughbred stock (a profitable business with the right man) as a specialty, as I certainly would make a miserable failure of the same. I am acquainted with a family of boys, one of them passionately fond of horses, whose greatest delight is to spend his leisure hours grooming the horses. His brothers hardly look at a horse; and so we might go on and give instance after instance in support of this theory. Of course we have to make allowance for a certain class of people who do not

appear to have gumption enough to succeed at anything.

These remarks will apply more pertinently to bee-keeping than to any other pursuit, as I firmly believe bee-keepers are "born, not made". For where one man will succeed with bees, one hundred will fail. This may seem a broad statement but I feel sure it will be sustained by nearly all practical bee-keepers. Have we not all seen instances to prove these statements. Just a few years ago in my own vicinity a smart, active young man thought there was money in bees. He had little experience and I don't think he was at all adapted to the business. He invested some five hundred dollars hard earned cash and in less than three years he had lost everything but a mere pittance of his original investment.

Owing to fine crops and prices for the last two years in this section, I fear from what I see that others are going to do the same thing. Just lately a friend of mine said that if he had \$1000 at his disposal he would invest it all in bees. I feel sure he would lose it all for I don't think he has ever seen the inside of a hive.

Some one will say, "Oh, this is some selfish fellow writing this, afraid of competition; afraid of the business being overdone." Not at all. I am not a pessimist. I believe the business is all right; in fact my friends generally regard me as being too enthusiastic in regard to bee-keeping. Be that as it may, I am always ready to help and encourage any one, even in my own locality, provided I think they are adapted to the business.

In conclusion would say that perhaps it might be well for some of us who call ourselves bee-keepers to see if we are really adapted to the work we are engaged in, and to those who have about made up their minds to enter the ranks, be sure you are right

and then go ahead. Above all, don't go into the business expecting to accumulate a large fortune, as I don't believe it is possible to amass a great wealth as is often done in mercantile pursuit.

Personally am glad there is more in this world to enjoy than dollars and cents, but as we are not all constituted alike would quote the old injunction, which is as sound as ever, "Use judgment in all you do."

York County, Ont.

## COMMUNICATIONS.

### The Ontario Bee-Keepers Association.

Editor C. B. J.:

I notice in the published proceedings of the last meeting of the Ontario Bee-Keepers' Association that Mr. Couse has discovered some evidence that I was (as I said I was at the meeting at Niagara Falls) once President of the Association. He says there is no record of the proceedings of the Association's meeting held in 1882-3. I presume that is true. I can furnish him with the reason for this blank in the history of the proceedings of the Association. In that year I was elected Secretary and Mr. R. F. Holterman was elected Secretary. Shortly after my election to the office, he left the province and went to Manitoba where he remained for some time. Mr. Holterman has often proclaimed the fact that he was once Secretary of the Association, but he never acted as such, he never recorded its proceedings—hence the blank.

Mr. Couse expresses a desire to know who were the officers of the Association that year. Three years have elapsed since and my memory does not enable me to



February 1902

ll, don't wish him the desired information. I  
 ng to ac can do so in part, however.  
 I don't President, R. McKnight; R. F.  
 s a great Holterman, (nominally) Secretary;  
 in mer Directors, D. A. Jones; Rev. W. F.  
 Clark, Dr. Thom, S. Cornell Hon.  
 Lewis Walbridge (afterwards Chief  
 Justice of Manitoba) and Mrs. Al-  
 baugh's father (his name has slipped  
 my memory). All the above gen-  
 tlemen, except the last, are past  
 presidents of the Association

If the history of the Association  
 was as well known to the present  
 members as it is to myself and a few  
 others, they would easily understand  
 why it is that the record of its early  
 years is not as full as could be desired.  
 If it understood in those days we had  
 neither an official organ or a money  
 grant from the government. In this  
 connection it may not be out of  
 place for me to give a rapid sketch of  
 the information and early struggles,  
 giving consideration for the value  
 of space in your columns.

It was I think in 1879 the Associa-  
 tion was organized. The year pre-  
 ceding D. A. Jones rolled ten tons of  
 honey into the exhibition at Toronto  
 in which he was awarded a gold  
 medal. This created a furore in the  
 country. The next year he called  
 a bee-keepers convention to meet in  
 City Hall, Toronto, while the ex-  
 hibition was being held. In response  
 to that call bee-keepers and pros-  
 trative bee-keepers gathered in, to  
 see the feet of the Gamiliel of api-  
 culture and learn the mysteries of  
 bee-keeping. That was the most  
 generously attended bee-keepers  
 meeting that ever was held in the  
 province. The hall was crowded  
 with people during the three days of  
 session. The writer had the honor  
 of occupying the chair. That meet-  
 ing resulted in the formation of the  
 Ontario Bee Keepers' Association.  
 When Jones became President, I was

lected Secretary and Treasurer,  
 The President, Secretary and the  
 Rev. W. F. Clark were appointed to  
 formulate a constitution and by-laws  
 for its government. (When the Asso-  
 ciation was incorporated and became  
 the recipient of an annual money  
 grant, it was my privilege to modify  
 its constitution and by-laws to meet  
 the new condition of things. I am  
 pleased to know that it has not been  
 found necessary to materially change  
 these since.) As I said we had no  
 organ at this time. One of our mem-  
 bers edited a weekly paper published  
 in the Town of Welland, with him  
 we arranged for the use of one of its  
 pages to be devoted to bee literature.  
 The conditions were—we were to  
 supply the "copy" and I was assign-  
 ed the duty of editor of the bee de-  
 partment of the Canada Farmer  
 (long ago defunct). By and by D.  
 A. Jones started the Beeton World,  
 to which we transferred our patron-  
 age. Shortly after he started the  
 Canadian Bee Journal—then the only  
 weekly bee journal in America—with  
 the exception of the British Bee  
 Journal the only one in the world.  
 The Journal at once became, and  
 still is the organ of the Association,  
 I remained Sec.-Treasurer till I be-  
 came President, when I resigned the  
 secretaryship, but continued Treas-  
 urer up till 1892 when on my resig-  
 nation of that office the Association  
 very generously presented me with a  
 gold watch,

Pardon me for saying so much of  
 myself, but up till the time I became  
 an "Ishmaelite" (when every man's  
 hand was against me, because of my  
 opposition to the so-called pure  
 honey bill, under which no man has  
 yet been convicted, and under which  
 no man ever will be) I had some-  
 what of a prominent place in the  
 management of the Association.

R. MCKNIGHT,

## Notes by the Way

By G. A. DEADMAN.

### SHIPPING COMB HONEY IN BARRELS FREIGHT RATES ON HONEY, ETC.

Regarding shipping comb honey in barrels, which originally contained sugar, which I touched upon in the last issue of this Journal, I might further say that I was a little doubtful about the success of it when they were headed up in the usual way; the temptation to roll them from place to place when loading or reloading at different points would be greater than if the head was left lower, or simply cross pieces nailed to keep the contents in their places.

I think it is generally conceded that cases of comb honey should not be shipped singly, but crated or boxed, and some have gone so far as to suggest that these boxes have rollers or casters to facilitate moving them. The Root people in their catalogue, recommend that the crates have projecting handles and I believe there is nothing better if we could only get the railroad men to place them the right way in the car, but you can never depend on this, and it is for this reason that I would rather take my chances on the barrel when shipping long distances or over more than one line of railroad. As it is now a "conviction" with me, I purpose making my comb honey cases so that they will pack to best advantage in these. I find that by making the cases to hold from 10 to 12 sections ("plain"), and I believe this package to be the best all round size. A barrel will take five tiers or one

hundred and sixteen sections. If you are using the old style bee-wax sections then there will be considerably less. In passing I would say that to me the "plain" or no bee-wax section has many advantages and this saving in casing and crating or barreling is a strong argument in their favor. As to the expense of barreling or crating, I am not sure but that the former is cheaper. The material for crating in ordinary cases costs I should think as much as a barrel, and when it comes to the time taken to nail these together, I am sure that the barrel is preferable. When packing comb honey in a barrel, no matter how carefully you may place it, there will be considerable room that cannot be utilized except for something else, you need not worry over this as it does not cost you anything, but if you can use it for something else so much the better. If you bottle honey in cans is a good place to put it or in glass cans. I would say here that bottled honey is always packed in barrels. Some may object to packing comb honey in barrels because these would weigh more than a case holding the same number of sections. A barrel weighs about twenty pounds just how much a crate with straw on the bottom, as some advise, would weigh, I cannot say, but the difference would not be very great. This would be more than counter-balanced by the saving in freight. This saving in freight brings us to another aspect of this question. I realize that I have only a G. T. R. table to go by, but can reasonably presume that in Ontario at least it will correspond with the C. P. R. and so I will purposely omit the rate of honey by the carload, as when shipped this way, no matter whether comb or extracted, in glasses or tins it is the same rate.

honey in glass, packed in cases.....	1st class
honey in cans, not boxed.....	1st
honey in cans, boxed or crated.....	2nd
honey in kegs or barrels.....	2nd
honey in comb, boxed, owners risk.....	1st

Now you will notice that honey in kegs or barrels is 2nd class and that honey in the comb, boxed, is 1st class. It does not say honey in barrels must be extracted, neither does it say that it must not be in glass. The 1st class rate for comb honey is when boxed. Now if we ship our comb honey in barrels, according to the tariff it should go 2nd class,—honey in glass the same way. The 1st class is when in cases, and when in barrels, no matter what kind, we assume that it is 2nd class. Now it may have been the intention of the compilers of this tariff, when stating honey in barrels, to mean it to be in the same form as molasses, or other liquids, but they do not say so, and I take it as it reads. The agent at this station here took exception to my rendering, but, I did not argue the matter with him, if discussed at my quarters; I am not sure but that some change might be made. Fortunately for me this said station master reinforced his position and I have had no trouble since. I had occasion to ship some honey in bottles, packed in barrels, from Toronto on one occasion and made special enquiry about the rate, and they shipped 2nd class so that I have this for a precedent. This is no more than right, however, when the barrels are headed in the usual way. For greater security (as I supposed) I shipped some honey 2000 miles in a barrel and the head left lower than usual

and was taxed 1st class. I headed them up in the usual way now. To have a better understanding of this subject we should know the rates on bottles separately. It is too long to give the whole of it so will only refer to that which concerns us as shippers of honey. Fruit jars, etc., in crates, boxes or barrels are 3rd class. Now note this honey in tins is 2nd class, but if you take this honey out of the tin and put it in glass and pack in the same box the glass came in, they charge you 1st class. There is something manifestly wrong about this. By taking the honey out of the tin and putting it into the bottles and making the one box weigh as much as the two and thereby saving room and handling in the car, instead of better than a 2nd class rate we are charged 1st class. This is unjust. They may tell you that there is more risk with honey in glass but this is not so. It is shipped at "owner's risk" anyway, and the leaking is more apt to occur with tins than any other way and should a bottle break the packing and case prevent the honey from running. You will notice the glass in barrels comes at 3rd class and it is a rule I believe that we can pack what we like or as many articles as we wish in one container so long as we pay the highest rate for all, that any one article or particular article is rated at—glass for example is 3rd class, honey 2nd class, so we ship honey and glass as honey, because honey is a higher rate than glass. Another example, you can put honey and apples in the same barrel, but it



PAGE

**Page Woven Wire Fence**

Owing to the variations of the Canadian climate, considerable allowance must be made in all fences for contraction and expansion, which makes an ordinary wire fence unserviceable, as when it expands it becomes so loose as to prove of little value. Note this makes it elastic and self-regulating. The Page Wire Fence is made of "Page" wire, which is twice as strong as ordinary wire. Prices are particularly low this season. 50,000 miles of Page fences now in use. We also make Gates, Ornamental Fences and Poultry Netting. The Page Wire Fence Co., Limited, Walkerville, Ont. 2

the continuous coil:

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would be wrong to ship as apples because the honey rate is higher than that of apples, but it would be right to ship as honey for the same reason that you are paying as much and more than for either sent separately. We have known or have heard of honey having been sent along with a carload of apples or with a carload of live stock, but this is all wrong and an injustice to those who believe in dealing honestly with corporations as with individuals. In shipping comb honey in barrels I would not label it as such nor have any directions as to how to load in a car. Bill it as honey in barrels and say no more. The same also with bottled honey. It is better to let well alone, and for this reason I would take the tariff as it reads and not ask for any investigation, or say anything that may give rise to a change, that may include honey in glass or comb honey as 1st class no matter how packed. The difference between 1st and 2nd class is considerable when shipping long distances. If any who bottle honey find a barrel too large, then use a keg which goes same rate, or make up an assorted barrel of bottles and tins including comb honey and get the advantage of a 2nd class rate.

HAVE YOU RECEIVED A COPY OF OUR NEW CATALOGUE OF BEE KEEPERS' SUPPLIES? There are Several New Things in it. A card will bring it.

WRITE TO-DAY

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To be fair to everyone no Selected Tests are offered, thus everybody has the same chance.

The above queens are bred from a careful selection of Italians and Carnolians. Pure Italian or Carnolian Queens same price. Price of full colony on application.

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