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...The Canadian Bee Journal

PUBLISHED MONTHLY.

NEW SERIES
VOL. VII, No. 10.

BRANTFORD, ONT., APRIL, 1900.

WHOLE No
492.

Annual Meeting

Twentieth Annual
Meeting Bee-Keep-
ers' Assn., Ontario.

HELD AT
TORONTO,
DEC., 1899.

TUESDAY EVENING.

QUESTION BOX.

The question box was opened by Mr. John Newton of Thamesford.

QUESTION—What success, if any, are drone and queen traps at out-apiaries?

Mr. Newton: I have no experience personally on the matter, but I have met with some parties who have used them, and who, when away from home during the day, attended to their bees that had swarmed during the day when they came home in the evening and I have been told that the queen traps worked with very good success.

Mr. Dickinson: I will give you a little of my experience. If you carry business on on a large scale and if seven or eight were to go off at once your drone traps would not amount to anything, with a large apiary the queen catcher would be troublesome, but the queen catcher is a good thing other ways.

Mr. Post: I have had no experience with them.

Mr. McKnight: I have had no experi-

ence, and the fact that very few have had experience seems to me to imply their employment does not commend itself.

Mr. Emeigh: I have had no experience at all. I have no out-apiaries, but if the drone trap would get two or three swarms together that would be just what I would want. I want those big swarms.

Mr. Darling: Mr. Emeigh did you ever get your colonies too strong?

Mr. Emeigh: No.

Mr. Darling: I have had them so strong that they would not work. I have had no success until I destroyed the queen and gave them a sheet of brood. Where they are so strong they are so very apt to ball the queen.

Mr. Emeigh: Possibly strange bees coming back might ball the queen.

Mr. McEvoy: I have not had experience along that line at all. I think Mr. McKnight put the whole thing in a nut-shell, that if they had been of much practical value the bee-keepers' would have been on to them. Let us hear from Mr. Hall.

Mr. Hall: This was the fellow that asked the question. I wanted to learn something.

Mr. Newton: I knew whose question it was, and I knew his object also in running out-apiaries. I find in my own yard I like to have a drone trap once in a while, and I think having

one or two in the yard comes in very handy.

QUESTION—What are the objects of contracting by division board?

Mr. Newton: The writer of this does not say whether it is in the spring or fall or when. We have had a discussion this afternoon on the fall part of it and partly in the spring. I was surmising that he probably meant during the swarming time in connection with comb honey. He also follows with the question: What are the advantages in clipping queens? So I would take it for granted that he was speaking of contracting in connection with the comb honey. I think it is a great advantage the way I work for comb honey. I believe that the swarms are the ones we get the nice comb honey from, and are the ones we get the most from; contracting them by division boards and filling up with dummies we get them into such space that our combs are mostly all worked. The bees are crowded into the sections and we get them nicer and better filled.

Mr. Post: I think it depends a great deal on the time the bees swarm whether you get the most or best comb honey. If you can keep bees from swarming altogether I think you can get far better honey and more of it. If they swarm two weeks before the main honey flow, they will be the poorest swarms you have in the yard, and if it is a little too late it is just about the same.

Mr. Hall: That is something I would give fifty dollars to know. He might get on without swarming; his location is different from mine. I have tried his method, and it is good for many things: it ventilates the bees, it retards swarming, and they work better, but as far as pre-

venting swarming with me I don't know that it prevents ten per cent. of them, I think it must be the location.

As far as the contraction is concerned I want my bees to swarm right in the commencement of the honey season, not one day before. My hive is large enough and they fill it with brood, and not much honey. We get precious small percentage of drone comb, especially if the queen is old.

Mr. McKnight: I asked the question, and I do not think anybody could have any particular trouble in discovering what the meaning of the question is. I have heard a great deal in my thirty years' experience about division boards and contraction. I want to know if the use of division boards has any other purpose than that of conserving heat and confining bees.

Mr. Hall: I know of no other use than those two.

Mr. McKnight: I never use a division board, because I never was yet persuaded that a division board was necessary for either of these purposes unless the division board is perfectly tight.

Mr. Hall: We don't want it that way any more.

Mr. McKnight: Unless it is of that character it cannot conserve heat to any great extent. I asked the other question that grows out of this: What is the object in clipping queens in a home apiary or any other yard where the bee-master himself is present? The only object in the world that I see of clipping queens is to control swarms, and to prevent the queen from flying away. I don't think it prevents the queen from being lost. I never clipped a queen, and therefore, I cannot say anything upon the various methods of performing that surgical operation.

Mr. Hall: The division board—I don't want it for confining heat—I want it during the swarming season if I am taking comb honey. I want it to contract the hive. Sometimes I want to raise five, ten, fifteen or twenty queens from one stock of bees that have swarmed, and to do that I pile a lot of brood combs into the same hives, and a few days after I cut the cells and put one in each comb, and I put a division board to make a hive. If you did not put that in they would build comb on each side, which you don't want them to do, because they generally build drone comb.

Mr. McKnight: Would not the removal of the unnecessary frames answer the same purpose to a great extent?

Mr. Hall: No sir; when we get busy we cannot attend to these little things, and when we go back to those without division boards we find that they have built three or four small combs, the queen begins to lay and sometimes we have no brood to strengthen them up.

Mr. McKnight: I admit its use to confine bees, but I never could admit its use to confine heat.

Mr. Hall: In regard to Mr. McKnight's second question as to the advantages of clipping queens, I venture to say if I did not clip my queens I would have ten times the work. Another reason is to know the age of the queen. I am working in my workshop where I can see the whole yard; I know my queens are all clipped, and when I see a swarm come out I am not in a hurry to drop my tools and run. Sometimes we have five or six out at a time.

Mr. Newton: I know it is a great saving of labor to have the queens clipped.

Mr. Walton: It has a good many

advantages in my experience. You are not in a hurry when the swarm issues, you may be engaged in something else. I use swarm catchers, and when I pick up the queen I put her in a cage and slip her into the swarm catcher.

Mr. McEvoy: Mr. Hall has given the advantages of the division board, and I think Mr. McKnight will have to acknowledge its advantages. Now it is just as necessary to crowd these bees for out door wintering into smaller space. By crowding them up they cover the comb with the honey, and if the honey is warm and if we get Klondike weather it won't affect the honey.

Mr. Dickinson: I use the division boards pretty freely. I never heard any one say they use it to increase the honey crop.

Mr. Hall: Mr. Newton and I use it to increase the comb.

Mr. Dickinson: I used it to increase the extracting. I take a young swarm and put in eight frames with two division boards. I look upon it that the honey goes up above; when the feeding time comes, to prepare for winter, which is the great secret of spring management, I pick out these two division boards—

Mr. McEvoy: How many frames do you use in your hive?

Mr. Dickinson: Ten. We take out these division boards and replace them with combs of honey. In our locality there is a good flow of buckwheat honey, and buckwheat combs are put in the place of division boards, and I look upon it that we get more extracted honey, and more of the clover honey.

Mr. Hall: That would lead on to another thing: I have an apiary nine miles out which usually has a buckwheat flow, we simply hive the bees

as we would for comb honey, on five starters, and as soon as the white honey ceases we take out the dummies and put in sheets of foundation. We just simply divide two and stick in three sheets of foundation for the bees to fill up with buckwheat honey for wintering, and they do it.

Mr. McEvoy: This gentleman has struck a very important point; the more honey that is stored below the less you get above, and if he contracted ten to eight he really went into business.

Mr. Shaver: Then, an eight frame hive is better than a ten.

Mr. Dickinson: I find the eight deficient for wintering.

Mr. Darling: In regard to making bees carry honey upstairs by placing division boards below. I was bothered with one of those queens that seemed determined to go away, and when I say the queen I think we should blame the whole stock of bees. I wanted to get some comb honey, I piled up supers two, three, or four high, and they were not satisfied unless they would go. Finally I cut the queen's head off. They came out again after that and fortunately, or unfortunately, they got a young queen with them while in the air, and got mixed up with the bees that had the young queen; I concluded if they would not do as I wanted them to do I would see if I could compel them. I took one of those Jones' hives and filled up part of it with dummies. I went to the hive that the swarm had come out of, and I took off the three supers and put them on top of those three frames, and put in the swarm. After that time I had all the honey they gathered. It was a virgin queen, and she did not begin laying for about ten days after. When I took the sections off there were three cards of solid brood from top to

bottom, put in as pretty as ever I saw. There was not two pounds of honey in the hive.

QUESTION—Foul brood is now better understood by the bee-keepers' than when the Foul Brood Act was passed. Could it not be better cured and sooner exterminated by appointing a number of sub-inspectors whose duty it would be to inspect every colony in their districts and attend to the curing of any disease found by visiting the apiaries as many times as necessary?

Mr. Newton: I might say I have thought of this question a good many times. It seems a lot of work for our Inspector to pass from one end of this country to the other and do ample justice to every bee-keeper in it. We have talked it over in our Oxford convention. If there was one appointed in connection with our local associations I think the disease could be sooner done away with than it is. I know how it is that our friend McEvoy would visit some place in the west, and then directly he is away to the east. Sometimes he may not get back for weeks and probably months. Well, we do not know whether that man is doing his duty or not. If there was a man in that district to see to it I think the thing could be cured much quicker.

Mr. McKnight: There is one point in connection with this which, perhaps, has been overlooked. In order to carry out the suggestion that has been made the law affecting foul brood would have to be changed. There is nothing in the law now which would clothe a local officer to carry on the local work.

Mr. McEvoy: Sometimes I run up into a yard where a man had not done his duty and is not likely to do his duty, and needs to be looked after closely. Before I go into his yard he

can challenge me to produce my authority, if he has a mind to, and I have to show that I am legally and lawfully appointed by the President's signature, or he can show me the gate and tell me to get. I have no power to go on any man's premises without the legal document. This fall I went to carry out the law in one place, and I was afraid I would be driven out, but fortunately I was not challenged. I was going to enforce the law very rigidly.

QUESTION—Is it advisable to re-queen with virgin or young mated queens in order to diminish or prevent swarming, and with a view also of obtaining a large amount of surplus?

Mr. Newton: I used to think at one time that if we could prevent swarming and keep our stocks from swarming we would always get the largest crop of honey. The last few years I have changed. If the hives seem determined to swarm the sooner they do so the better, and then when the swarming fever is over they are in a position to give us honey. I have seen no advantages in what I have tried of re-queening or running virgin queens in order to prevent swarming, because sometimes the hive is at a point of swarming when we undertake to do that, and putting the young queen in when the swarm fever is on won't prevent it.

Mr. Sibbald: I don't think putting a young queen in will prevent the swarming if they are determined to swarm. That has been my experience.

Mr. Holmes: It seems to me this idea has changed the view of the question somewhat. Are we not supposed to give them the young queen before they get that determination to swarm?

Mr. Newton: The question does not say so.

Mr. Holmes: In reference to the

desirability of having swarms issue in my experience I prefer to have the bees in one hive. I would expect to get better results from that than to have them swarm. I do not want my bees to swarm if I can avoid it. Of course, as to the effects of introducing young queens in the spring to prevent swarming, I am not prepared to speak definitely, but I have experimented on that sufficient to give evidence, and the little experience I have had would be to answer the question in the affirmative, that it will hinder swarming.

Mr. Darling: We try lots of things we don't know how to manage, and perhaps that was the way when I tried this re-queening business some years ago. I found sometimes they would not accept the young queen, and they would simply wait until some of their own hatched. I remember having a first swarm where I tried to introduce a virgin queen, they started a lot of queen cells, and refused to accept the queen I put in, and they came out determined to swarm. There was a good deal in the bee journals pro and con in regard to swarming some years ago, and I thought like a good many others, if I could keep the bees at home, I could get a good deal of honey. It never worked. That which has given the most satisfaction is to let the bees swarm.

Mr. Heise: I think the reason for Mr. Darling's non-success was the very fact that he left introducing the young queen until the colony had made preparations for swarming. If he had introduced the queen early enough no doubt it would have had the desired effect.

Mr. Holmes: I would like to emphasize the statement I have made, that at the beginning of the honey season I would rather have one hive

full of bees than to have two hives half full.

Mr. Hall: They are stubborn things, and with me if they want to swarm I have of late years never tried to retard them.

Mr. Darling: Mr. Heise suggested that I was too late. I think that was one difficulty, but just there I have had a little experience which probably would not make it so sure if I were early. I have had colonies swarm, and in the course of three or four weeks the prime swarm swarmed again. That, of course, was the old queen. I have had colonies swarm where the young queen hatched out, become fertilized, went to work, and in six weeks swarmed.

Mr. Hall: Last year we had four cases of that kind.

Mr. Gemmill: Those are exceptions to the general rule.

QUESTION—Is it wise or unwise to allow the bees to clean out the combs after last extracting?

Mr. Newton: I would say yes. Of course, we all have different ways of doing this. We would not like to put away sticky combs into our store-room after we have got through in the fall. Some put them on the hives again. I think, probably, from the tone of this that the man has meant not to change combs for fear of foul brood or something to that effect, but if he is afraid of that put them on the hive again and have them cleaned, and if he is not afraid of that why put them out-doors and let the bees at them.

Mr. McEvoy: How far from the apiary would you put them?

Mr. Newton: I would not care if they were just over there at the other end of the room. (thirty feet, about.)

Mr. Gemmill: What time?

Mr. Newton: I always put mine

out in the morning before the bee fly; space them and have them ready, and in a couple of hours they will be perfectly clear.

Mr. McEvoy: I draw the line at any certain time, because if you live in town or village and just after honey flow you would start the bees in such a cross way that they clean out everything, cats or elephants.

Mr. Dickinson: I have experience in that: we always do it in the evening when the bees are quiet, never in the morning. We carry them away from the yard possibly an hour or two, and after that those fellows know that road just like cattle to a well, no trouble in the world.

The President, Mr. Brown: That has been my experience. I remove them probably eighty feet, or thereabouts, and after they get the road there they will go there, and I don't notice that they do much damage to cats or elephants.

Mr. Newton: As soon as they get started out, as our friend here says, they will make it a business transaction just as much as if they were going off to the field to work.

Mr. Wood: Don't you find if they get it used up before night they are apt to go to robbing?

Mr. Newton: That has never been my case.

Mr. Wood: To take it away through the day I find it starts them robbing, or if they finish it up before night.

Mr. Newton: Don't understand me that I take mine away during the day.

Mr. Wood: But if they have cleaned them up it is all the same as taking them away.

Mr. Newton: If they get through with the empty combs, and they leave

them, then you can take them away safely at night.

Mr. Hall: For my friend's benefit there, we have one apiary in the buckwheat section, and after we have extracted our buckwheat—

Mr. Newton: Here is another question upon what Mr. Hall is going to speak of, and I will just read it, and he can answer it: What is the best way to do with combs having small quantities of honey in them in the fall?

Mr. Hall: I have not much time when I go down, it is about nine miles down; and I go down and pick off every super and pile them up where they are going to stay for the winter, we keep them shut down until we get them all off, and then we simply put a chip or a nail under the top piece and let the bees at them and I tell you there is music, but we never had any trouble; we never had any robbing. I have to finish the job up. Sometimes there may be 150 pounds of honey, but they move it home pretty quick.

Mr. Sibbald: Two years ago I did not get all of my combs cleaned out, as had always been my habit, when I put them on the next spring, and I found that the bees rushed up readily into them and filled them right up and I do not intend to practise that again. I would, however, like to have the combs left with a little sweet in them, the bees will come into them much more quickly in the spring, and if they are put on between the apple bloom and the clover this will be very useful in stimulating the bees, and it will save quite a bit of trouble, and I think it is an advantage to have them in that shape.

Mr. Post: That is all right if honey is coming in, but if there is no honey coming in I will guarantee they will

not go up and put honey in them.

Mr. Shaver: I have followed that practice two or three years and my combs keep better and I never found them granulating.

Mr. McEvoy: Suppose it does, the sieve catches the granulated.

Mr. Newton: If you have some buckwheat honey—

Mr. Shaver: I never have any buckwheat honey.

Mr. Gemmill: I want my combs clean, because very often if left in that way it granulates.

Mr. Newton: We very often get inferior honey in the fall.

Mr. Walton: When the extractor is used to the combs is it any detriment to the combs to leave a small amount or liquid honey in the combs?

Mr. Gemmill: I do not want to put my extracting combs down in the brood chamber, but they will clean it out if it is granulated down there if they get a little water.

Mr. McEvoy: If they are stored in a proper place they will do no harm.

Mr. Shaver: After basswood flow with us we hardly ever have much honey of any account. They put a little patch in, maybe in three or four combs, I extract them out, but never dry them, they are not badly mused, there is always a little honey, and I find the bees go to them next spring more readily.

If you have a friend worth loving,
Love him. Yes, and let him know
That you love him ere life's evening
Tinge his brow with sunset glow.
Why should good words ne'er be said
Of a friend till he is dead?

—Selected,

Bees or Honey,

Which, in Spring Management ?

Paper by D. W. Heise read at the U.S.
B. K. A. Convention at Philadelphia.

If I were allowed to construe the above title according to my own ideas, I would have it read as follows: Should the bee-keeper's spring management be along the line of securing a large force of bees at the "expense of honey," or vice versa? If this, then, is a proper interpretation of the title, I would unhesitatingly answer, BEE, BEES, FIRST, LAST, and all the TIME. It would be just as consistent for the dairyman to expect the production of a large quantity of butter without first securing the cows, and the poultryman eggs without first having the fowls, as that the bee-keeper could expect a large crop of surplus honey without first securing a large force of workers to gather the nectar from the flowers.

Knowing, as we do, that the inventive genius of man has not yet devised any means by which the nectar can be extracted from the blossoms, stored in our hives, and transmuted into honey without the intervention of the busy bee, it follows as a natural consequence that we are still dependent upon the bees to carry out this important work. This, then, being the case, it follows that our prime object in spring management should be the securing of a large working force of the proper age before the main honey harvest opens. If, then, we agree on this point (and I feel confident there can be but one opinion in regard to it), it also follows that this important object in spring management can only be secured at the "expense of honey."

My paper is before an intelligent

body of practical bee-keepers, who are cognizant of the fact that though a hive may be well filled with bees that have come through the winter safely, and though there may be a 10-dollar queen in that hive—yes, and though every other requirement has been successfully met—yet, if there is not a continual supply of honey and larval food, slow progress in brood-rearing must be made in that hive. Not only is it enough to know that there is a sufficiency of food, but we should also know that it is in a proper condition, and in a convenient position.

There are invariably days in early spring-time, and sometimes several in succession, when the bees are unable to gather from the outside: and if at such times there should be considerable brood in the hive (in different stages of development), I would consider even a liberal quantity of sealed honey in the hive as being in a very improper condition for the most profitable advancement in brood-rearing.

Experienced bee-keepers know well the difference in a colony where the supply of liquid honey surrounding the brood has been continuous, and one where famine has at times existed even with sealed honey in the hive. In the former the larvæ will be found a pearly white, and fairly swimming in the food that has been supplied them; while in the latter the brood will be found destitute of food, of a deathly yellow color, and destined to develop into a sickly and short-lived generation, if indeed they even mature, and will be found of very little value as honey-gatherers.

Many experiments have been conducted by men of extensive apicultural knowledge, with the object in view of stimulating the queen to greater activity in egg-production early in the season; and various have

been the methods that have been outlined for the accomplishment of this object. But, so far as my limited observations have directed me, I am forced to the conclusion that any manipulation of the brood-chamber that will cause the bees to move their honey from place to place, will bring greater results in that direction than anything that has come to my notice. And the uncapping of honey, when such exists in the hive, is, to my mind, one of the very best methods that can be adopted for the enforcement of that object.

It is of course clear to the mind of every bee-keeper worthy of the name, that there are a great many requirements that must be met for the greatest possible advancement in brood-rearing, apart from keeping up the food supply. But I have a firm conviction that there are a great number of honey-producers who could so vastly improve on their spring management in this direction, that the difference in results when the main honey harvest arrives would be obviously apparent to even the most skeptical.

I would, then, not only advocate the uncapping of honey that may be in the brood-chamber, but I would go further, and say that any bee-keeper who is alive to his own interest, and that of his bees, should always be in such a position that he could at any time supply his colonies with combs of sealed honey (outside of a division board) after brood-rearing has once commenced, and the sealed honey has been exhausted, or when the bees are prevented from any cause whatever from bringing in a sufficient supply from the fields for the encouragement of the extension of the brood-nest.

Yes, I am persuaded to go still further, and say that in my opinion I would consider it prudence on the

part of the honey-producers if they would so manage as to have the dark and inferior honey (a certain amount of which most localities furnish before the white flow sets in) stored in frames such a size that they could be inserted in the brood chamber early in the spring of the following year (first uncapping them), for the encouragement of brood-rearing. By this management we not only keep an article off the market which will always have a tendency to injure the reputation of good honey, but we utilize it ourselves, and actually trade it off for bees early in the season, the great advantage of which I am sure no one will for a moment question. By this method we are also able to keep a considerable number of partly worn-out workers in the hive, where they are of immense value in keeping up the required temperature during unpropitious weather, when their lives would be endangered by wandering out, and yet brood-rearing goes on apace.

There is one important point that I wish to refer to, and it is this: Any manipulation in the hive that has for its object the moving of honey by the bees will likely carry with it the spreading of brood to some extent—an operation which the novice will always do well to fight shy of, and one which even the expert will only attempt with caution and the exercise of good judgment; but if it is discreetly entered into, and judiciously carried out, it will result in a manifest advantage to the colony, and the ultimate fattening of the purse of the operator.

Bishop Vincent writes of the Post Fountain Pen. The pen is all you promised, I carry four fountain pens and now the post makes the fifth and the fifth is by far the best I have—and all are good.

THE
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Editor, W. J. Craig.

APRIL, 1900.

EDITORIAL NOTES.

March has maintained its reputation right up to the close. Bees are yet in their winter quarters, but reports say that they are not suffering and that there are fewer than usual dead bees on the cellar floors.

"The new Editor of the Canadian Bee Journal is Mr. W. J. Craig, under whose guidance from the issue before us the Journal will by no means lose its hold on the bee-keeping fraternity"—Australian Bee Bulletin. Thank you.

Mr. D. W. Heise writes us of the sudden death of his mother from heart failure on March 3rd, aged 73. Bro. Heise and family have our sincere sympathy in their bereavement. Death is a sad circumstance in the home, even when the full three score years and ten have been reached, which is the lot of the few.

Foul Brood, Pickled Brood, Black Brood, Inspector McEvoy speaks of yet another "Starved Brood," which perhaps is far more prevalent. We

think that we see a wonderful similarity between it and the Black Brood of New York State. Dr. Howard says of the latter: "It might be said speculatively that the disease had its origin in starvation and in some cases several putrefactive bacteria of similar biological character, which when once started and undisturbed becomes as destructive as the old fashioned foul brood."

It is a pity that the relationship between bee-keeper and fruit grower is not better understood, notwithstanding all that has been written and said upon the subject of pollination and cross fertilization. The untimely spraying of trees has been a source of much annoyance and loss to bee-keepers, and we believe that the time has come when something must be done to prevent its annual occurrence. We have a law but it wants to be known and in some cases carried out. We are pleased to learn that the matter has been taken hold of by the executive of the O. B. K. A. as indicated by a letter just received from Secretary Couse, which appears in this issue.

The following notice regarding the spraying of fruit trees was published in connection with the bulletin issued by the Ontario Department of Apiculture, March, 1899:—Do not spray trees when in full bloom—(1.) It is not the right time to spray. (2.) It may destroy insects that are then fertilizing the blossoms. (3.) It is destructive to the bees. (4.) It is

forbidden by law.

An act for the future protection of bees, passed 1892—(1.) No person in spraying or sprinkling fruit trees, during the period within which trees are in full bloom, shall use or cause to be used any mixture containing Paris green or any other poisonous substance injurious to bees. (2.) Any person contravening the provisions of this Act, shall, on summary conviction thereof before a justice of the peace, be subject to a penalty of not less than \$1 or more than \$5, with or without costs of prosecution, and in case of a fine or a fine and costs being awarded, and of the same not being upon conviction forthwith paid, the justice may commit the offender to the common goal, there to be imprisoned for any term not exceeding thirty days unless the fine and costs are sooner paid.

S. A. Deacon, South Africa, writing in the American Bee Journal on "Propolis for grafting purposes" says: I have done a good deal of grafting the past 30 years and have never yet found anything to come up to propolis, and as long as that is to be had I would never think of using anything else. Propolis is always accumulating with me for it is as carefully collected as wax, and every year there is a demand on the store for grafting purposes. With 70 colonies of bees and a 6 acre orchard, supply and demand are about equal. Of course the propolis can be rendered plastic by warming over the fire be-

fore using. When by keeping the lump against your breast it will remain soft any length of time. There is no better grafting material than propolis and if orchardists were aware of the fact there should be a good demand for it at a price that would make it worth while to collect.

A BEGINNER'S OUTFIT.

Some time ago one of our contributors wrote an article on the above subject suggesting that supply dealers should endeavor to give a list in their catalogues of the supplies required by a beginner in bee-keeping. We are pleased to receive from Mr. Carey A. Fawcett of Memramcok, N. B., just such a circular, who arranges his lists somewhat as follows, giving the items and prices: Outfit No. 1, (for comb honey only.) Outfit No. 2, (for extracted honey only.) Outfit No. 3, (for both comb and extracted honey.) Mr. Fawcett is a pushing business man, is trusted by his customers, and believes that it pays to instruct them in their purchases.

Honey Soap.

Take 1 lb. of best soap cut it up into thin slices and put it into a double saucepan and melt. Add 2 oz of honey and 2 ozs of palm oil, stir it well and boil ten minutes, then pour into moulds. A few drops of oil of cinnamon or oil of cloves may be added to perfume it. A good soap can be made by omitting the oil and using more honey.—British Bee Journal.

Communications.

The Bee-Keepers and Spraying Law.

Editor Canadian Bee Journal.

DEAR SIR—As the season will soon be here for the fruit growers spraying their fruit trees in full bloom and for the bee-keepers to try and prevent them, it is time that something should be done. By spraying the trees in full bloom, we are lead to believe by the best fruit growers, that it is not only useless, but injurious to fruit grower and bee-keeper alike. We are satisfied from what we have seen and heard, that the loss is great in some districts and generally through ignorance on the part of the fruit growers.

I am satisfied that in a case I know of the parties who sprayed were not aware of the damage they were doing to their neighbor bee-keeper, and I believe that since they have learned the damage they caused, they have not sprayed again during full bloom. In the first case I believe the sprayers were not benefitted and the second the bee-keepers lost from fifty to a hundred dollars.

The question is how can we remedy this matter, I think that the Ontario Bee-Association can help considerable by a very small expenditure (perhaps from seven to ten dollars) by getting from one to two thousand notices printed and by mailing ten or more copies to each of the members of the association and fifty to each of the affiliated societies. If these parties are interested who receive the notices they will try and make good use of them by posting them where they can be seen and have them copied in

their local papers. I feel confident that there will be considerable good done for the members of the association by this. President C. W. Post has instructed me to get quotations for printing circulars. I have done so and believe that the members of the association will endorse the action of the executive.

The notices should be out not later than the first week in May and should contain a copy of the act against spraying in full bloom, along with some of the evidence of fruit growers that was taken by the Legislature at the time the act was passed.

As this article may be read by some persons who would like to make some suggestions on the matter I would be pleased to receive any that may be mailed to me and they will be placed before the executive for consideration. I am satisfied that the executive will be willing to act according to the wishes of the members of the association. Hoping there may be something done to prevent our members suffering such loss as I have seen I am yours truly,

W. COUSE.

Streetsville, Ont, March 26th.

STARVED BROOD.

The following letter has been received by Mr. Wm. McEvoy, of Woodburn, Inspector of Apiaries for Ontario, upon the subject of dead brood.

"We had a fine spring in this part of Ontario, which caused a wide spread of brood. When I clipped my queens at that time not a dead larva was to be found, but later on some kind of dead brood appeared in half of my colonies. There would be from one to five, or ten dead larvæ in a colony and some of these often found in capped cells where

opened with a pen knife. I tried the starvation plan; several of them I starved twice as it would still show up. I even destroyed two sets of foundation. I must consider the time, patience and courage, with a dogged determination to look into every cell in 80 colonies, which I did seven times, I made up my mind to do it, to clean them out to die and goodness knows which will be first. Many a score of white combs and super combs we melted, it was enough to break the heart of a fox. I want to be first on your list for next summer. I may buy a set of colonies which will be purchased subject to your inspection."

Mr. McEvoy replies as follows :

You got clear off the track by pursuing the wrong way at the cross roads. When you and I get to work at your apiary we will put every thing to rights just as nice as the flowers of May and do it without the loss of a single comb.

Your colonies ran out of unsealed honey when they had a large quantity, brood on hand to feed and then your bees did not uncap the sealed stores fast enough to keep pace with the amount of brood that required feeding and the result was that considerable brood had to die through not being fed. And for some time after that the brood would suffer in proportion to the length of time that the brood nest was out of unsealed stores, and end in an increase of starved brood, which the bees would never flow to remain in the combs for some time after the honey flow commenced. You never would have found one cell of dead brood in any of your colonies if you had kept them well supplied with unsealed stores. You may say that I am very much mistaken as to the cause in your case. Oh no, my dear friend I am not, I have travelled over every inch of this line for fully twenty

years and from close observing, feeding and watching the results I found the cause why the bees failed to feed all the brood at certain times. On the night of the 28th of May, 1889, we had a killing frost all over the province of Ontario, which was followed by several days of wet weather. That frost coming at the end of one of the warmest and most favorable springs ever known, for bees was a very serious thing, because it caught all colonies full of brood and suddenly shut off the honey flow at the time when every colony had an immense quantity of larvæ on hand to feed. I warned every bee-keeper that I saw at that time that he could look for a wholesale starvation of brood, and a very small crop of honey if he did not go to work and feed his bees so as to give them a chance to feed the larvæ. I kept my brood chambers well supplied with unsealed stores (through uncapping and feeding) until the honey flow commenced and secured one of the largest yields of honey I ever took, and I did not see one cell of dead brood. Late in the summer of 1889 many a bee-keeper became very much alarmed when he found his brood chamber in a rotten state with dead brood. Spraying of combs, starving the bees, and other methods were resorted to to stamp out the dead brood. If these men had went to work right after that great frost of May the 28th and kept the brood chambers well supplied with unsealed honey through uncapping a part of the old sealed stores one time and part another and so on until the honey flow commenced, they would have had the most of the old honey used up, more space filled with brood, increased the bees and secured a much larger yield of honey and not have any dead brood.

The very wet weather that set in

all over the province in the last half of May and first week of June, 1894, was very hard on the constitution of thousands of colonies, because it shut off all honey gathering during that long rainy time and after the bees used up the unsealed honey (a thing they always use first) they did not uncup the old sealed stores fast enough to keep pace with the large quantity of larvæ that required feeding and the result was a lot of starved brood, weak colonies and a small honey crop in many places. During that three weeks of wet weather I kept my colonies well supplied with unsealed honey through uncapping the sealed stores from time to time until they were all used up, and after that I fed the bees until they commenced to gather honey. When the honey season opened the combs in every brood chamber was full of brood and a large quantity of bees hung out on the front of every hive. I then put the supers on and from 90 colonies in that off season (1894) I took over 10,000 lbs of clover honey and left abundance for the bees to winter on. Last season (1899) I kept my colonies supplied with unsealed honey between fruit bloom and clover, and when I finished extracting the balance of my crop in the fall I found that I had taken over 11,000 lbs of clover honey from 100 colonies, and left plenty to to winter the bees.

You say that you tried the starvation plan and it showed up again; that you starved several of them twice. I will stake my life that dead brood (starved brood) would not have shown up again after you put the bees on foundation, if you had fed the bees freely until they began to gather honey. You also say that many a score of white comb you melted, my, oh my, what a loss, these beautiful combs should not have been melted. With different manage-

ment you could have made \$250 or more and saved all the combs and yourself from a world of worry.

WM. McEVROY,

Woodburn, Feb., 19, 1900.

Questions and Answers

[Questions to be answered in these columns should be sent to us not later than the 15th of each month in order to insure their answer appearing in the following issue. We wish to make this department as useful to our readers as possible and a reliable source of information. For the present at least, the replies will be procured from various sources.]

QUESTION—We got scarcely any honey in this district last year. Some of my bees, I am afraid, will be suffering for lack of stores before the weather will permit feeding them outside. They are in the cellar, would it be possible to give them anything there?

BEGINNER.

ANSWER—If those colonies were mine and had no combs of honey to supply them, I would make cakes of sugar candy and place above the frames in the brood chamber and under the quilt, allowing the candy to rest on strips of pine so as to give the bees full access to them. In such cases, whether in the cellar or outside, the tops of the hives should not allow the escape of either heat or moisture. A stitch in time saves nine.

F. A. GEMMILL.

Stratford, Ont., March 26.

The Month's Work

A. E. Hoshal, Beamsville, Ont.

April is the month to leave the bees alone. Make this emphatic, Mr. Editor, I fear many will forget it. There may, however, occur seasons especially in the more northern parts of the province and other like places, when it would be impossible to set out bees which were wintered inside before the first of this month, but apart from this, and accidents which may or have occurred, I cannot conceive of a single legitimate exception to this rule.

The whole object of spring management is to have our colonies as strong in bees as possible, and their brood-chamber full of brood, (not honey) when the honey harvest arrives in June, with the opening of the clover bloom. The conditions necessary in the spring for securing this are, (1) good wintering, (2) abundance of stores, (3) good queens, and (4) warmth. Spring dwindling is in short bad wintering, and should be prevented in September, not cured in April. Likewise the matter of stores should be so attended to in September that there is no doubt as to each colony having abundance when April arrives. Every colony wintered having a poor queen means a more or less weak, worthless one when the honey harvest arrives in June, this fault cannot be remedied during the spring, it belongs to the swarming season. As to the warmth and comfort of our colonies, this work belongs to March and is treated in the article for that month.

In practice accidents and oversights

do occur, so if from such causes a colony is known to be short of stores it should be fed. This is best done by carefully opening the hive on the first warm day, removing two or more of the empty combs and inserting full ones in their stead, placing them next to but not between the combs containing the brood. This operation should be performed with as little disturbance as possible, as colonies so opened up and disturbed in April before the honey flow begins, not unfrequently will destroy their own queens, besides being liable to be attacked by robbers.

All unnatural means to hurry and increase brooding such as stimulative feeding, spreading brood, uncapping honey about the brood nest, etc., at this season of the year should not be thought of, but left wholly to those who practice it, and think they are making a success of it. I doubt if such expedients even in May are a success.

Uniting weak colonies in early spring to make strong ones is a mistake. Colonies made by thus uniting weak ones, will be no stronger by the first of June than these same weak ones individually would have been on this same date if they had not been united. This may seem contrary to logic, but it is a fact. Weak colonies should be allowed to develop upon their own resources, and if by the first week of June they are not strong enough to do remunerative work, they can then be effectively united. This may seem a harsh way of dealing with unfortunate weaklings, when to a certain extent they can be helped by contraction, special feeding, giving of brood from strong colonies, etc., but I doubt if it can be done with profit to the apiarist.

For various reasons there are often those, especially beginners, who wish

to watch the combs and brood as the bees are developing them, where such is the case, there should be a colony or more as required set apart for this purpose, so that the others will not be promiscuously overhauled and disturbed when not necessary and to their hurt, especially during this month and the fore part of May.

Black Brood

The New York
Disease by Dr.
Howard.

Dr. Howard of Fort Worth, Texas Bacteriologist of the division of Entomology, Washington, D. C., issued his report on the above disease in a recent number of *Gleanings in Bee Culture* from which we take the following.

In my investigations of this disease I have carefully examined each specimen separately, and noted the details in my laboratory note-book, from which extracts have been made. I have received specimens from Messrs. Geo. W. York, editor of *American Bee Journal*, Chicago, Ill.; E. R. Root, editor of *Gleanings in Bee Culture*, Medina, Ohio; N. D. West, New York State Bee Inspector, Middleburgh, N. Y.; and P. H. Elwood, Starkville, N. Y. All these men have furnished, not only material, but have been active in getting data for the investigation. Mr. N. D. West has kindly written up the history of the disease as it appears in the apiaries he has visited. Mr. P. H. Elwood has contributed his experience, as well as answered questions relative to certain points of interest. In making a report of the work and of the character of the disease, I have

endeavored to write a complete history of its nature so far as is known, so that those who have not seen it may appreciate the work, and be able, possibly, to recognize it. I have drawn largely upon what these gentlemen have furnished, as well as from notes taken from my experience with the disease transferred by infected food to healthy bees in my own laboratory.

I have made more than one thousand and microscopical examinations, and have given the results of those of the most practical importance, followed by a general summing-up of the facts, and the conclusions based upon them.

A different diagnosis has been made between this disease and those of foul brood and pickled brood, considering most of the diagnostic points worthy of interest.

On account of the character of the dead brood; its beginning with a dark spot on the larva, which increases in size, becomes darker, and finally black, for convenience and brevity the name black brood has been suggested, and this name is used in the text.

In conclusion are given a few remarks upon the recurrence and treatment of this disease from a practical standpoint. * * * * *

Conclusions — My investigations have been carefully conducted; although under disadvantages as to season, etc., they have in a great measure been satisfactory. Many points of vital interest have been made clear, while others of equal importance are necessarily obscure. It is clearly not foul brood. It is clearly not pickled brood. It is clearly something new. It is apparently a disease of the pupa stage. The infection is clearly not in the pollen—not due to a fungus but due to bacteria.

All diseases, in animal and vegetable

life, are due to the results of parasitic invasion—some by their mechanical presence, some by the ferments produced in the body, and in plants by changes in or taking from them their life juices, causing starvation and immature growth.

In any given case of rotten brood, head from, freezing, starvation, or other causes, being allowed to remain in the cells, much of the poison generated, as well as the germs themselves, or their spores, remain adherent to the sides of the cell. These are like the seeds which "fell on stony ground," and will not grow until the proper soil, such as is furnished by rich nitrogenous substances supplied to the brood by the nurse bees is brought in contact with them, when a luxuriant growth obtains. This produces a fermenting, decomposing food unfit for the brood, and sets up a ferment, a decomposition within the bodies of the bees, thus destroying their lives. This might happen to the host with any form of parasitic life, either animal or vegetable.

It might be said, speculatively, that the disease had its origin in starvation, and that in some cases several putrefactive bacteria of similar biological character were responsible for this malady, which, when once started and undisturbed, becomes as destructive as the old-fashioned foul brood. The two germs, **Bacillus milii* and †*Bacillus thoracis*, isolated having similar, or the same, biological characteristics, especially an alkaline medium in common, are both in a measure responsible for this disease, and perhaps the variations, the malignancy, etc., are due to modifications by their combined action. It

is, evidently, not due to a specific germ, *Bacillus milii*, the other, perhaps purely accidental at first, on account of its requiring more oxygen, is now found in the thorax among the respiratory organs.

While it has not been clearly demonstrated by facts, practically, it appears to be true that perfect bees, especially nurse-bees, are injured by the infection.

Differential Diagnosis—Foul brood, pickled brood and black brood. Foul brood, due to *Bacillus alvei*—a specific bacterium.

Pickled brood, due to *Aspergillus pollinis*—a specific fungus.

Black brood, due to *Bacillus milii*, modified, perhaps, by *Bacillus thoracis*, specific bacteria.

Black brood may be introduced into a healthy colony through infected food or infected combs—combs from which the diseased brood has been removed, or in which particles remain. The food for the young larvæ, either from its chemical reaction or from its lack of nitrogenous substances, is not a suitable medium for immediate growth of the germs; but when the chyle-like food is furnished the older larvæ, a chemical change in the food produces a change in the liquids of the bee, which becomes a suitable nutrient medium for their rapid development and dissemination. It would appear that, in some cases, *Bacillus thoracis* was the cause of death, as the spiracles, or openings admitting air to the respiratory apparatus, were closed by the products of decomposition or the result of it. In such cases it is usually nearly matured bees that are choked for want of air. These did not show the discoloration or shapeless mass which always obtains when *Bacillus milii* is found in the abdomen. This latter germ, multiplying rapidly in the rich nutrient medium of the alimentary

**Bacillus milii*, n. s. So named from its resemblance to millet seed.

†*Bacillus thoracis*, n. s. Found in the thorax, and in the air-passages, spiracles, etc.

tract, may destroy younger brood than the former. It is often found in other parts, and is certainly the cause of the dark masses of rotten brood. Both germs are found in the same comb, and often in the same bee, thus insuring a mixed infection.

Symptoms and Course—Brood is usually attacked late in the larval life, and dies during pupation, or later when nearly mature and ready to come forth through the chrysalis capping. Even after leaving the cell they are so feeble that they fall from the combs helpless. Most of the brood dies after it is sealed. In this it is much like pickled brood, except that as much or more brood dies in the late larval stage than in the pupa. In foul brood, while brood of all ages dies, yet more dies "at the ages of 6, 7, 8, and 9 days than at any other age" (author's Foul Brood, p. 46), even before the rich chyle-like food mixed with pollen is given, which is such a necessary environment for pickled brood and black brood.

When the larvæ show the first signs of this disease, there appears a brownish spot on the body, about the size of a pinhead. The larvæ may yet receive nourishment for a day or two; but as the fermentation increases the brownish spot enlarges, the larvæ dies, stands out, swollen and sharp at the ends. In this they are like pickled brood, except that the brown spot is not present in pickled brood, but pickled brood sometimes becomes brown after death. Foul brood turns brown only after the action of putrefactive germs have brought about decomposition. No decomposition from putrefactive germs takes place in pickled brood. In black brood the dark and rotten masses, in time, break down and settle to the lower side of the cell, as a watery, syrupy, granular liquid—not the sticky, ropy, balsam or glue like semi-fluid substance of

foul brood. It does not adhere to the cell walls like that of foul brood; has not the characteristic foul odor which attracts carrion-flies, but a sour, rotten apple smell, and not even a house-fly will set her foot upon it. Cappings in foul brood are sunken in the center when broken, sometimes puffed out by internal gases. In black brood the cap is disturbed from without, sometimes uncapped, and cell contents removed by the bees; not so in foul brood. The cap in pickled brood is usually undisturbed. The decayed brood masses do not adhere to the cell walls like either of the others.

During a good honey-flow, of a few weeks' duration, if the colonies are strong, black brood and pickled brood entirely disappear so far as appearances go; and even in foul brood, colonies seem for the time to improve. The most common cause for this apparent improvement is that in black brood and foul brood the old foul combs are filled with honey instead of brood; and eggs are laid in cells hitherto not used for brood, and in new combs when comb-building is going on; or where comb foundation is used, the queen takes advantage of this and deposits her eggs before the cells are drawn out and filled with honey. Again, proportionately, there is less brood-rearing and more comb-building during heavy honey-flow in strong colonies than in weak ones. In weaker colonies these diseases do not disappear, a more brood is reared and less comb built, in proportion to the mature bees, than in strong ones. In pickled brood the infection is in bad pollen; nice new pollen always causes it to disappear. Why these diseases should recur when there is a dearth of honey in the field, would be of interest to many.

In strong colonies, as we have seen, proportionately less brood was reared

During the honey-flow, and now we have fewer bees to keep up the strength of the colonies against the normal death rate. Again, the brood is gradually finding its way back to the centre of the brood-nest, where there are many infected cells which were filled with honey during the rush of the honey-flow. These, with element weather and other unnatural surroundings, are conducive to recurrence. Often new pollen is stored on old infected pollen—in the cell—and when this new pollen is exhausted, and no other to be had, the old pollen must be used; hence a recurrence of pickled brood.

Remedies—The best time to effect a cure is during a honey-flow.

Adopting a modified McEvoy plan: Make your stocks strong by uniting; place them upon comb-foundation starters, and cage the queen. After five days remove the starters and make them into wax, and give full sheets of foundation—keeping the queen caged five days longer. This will give time for all infected mature bees to have disappeared before any brood is reared.

Don't try to save infected mature bees by drugs. They are not worth the trouble; yet salicylated sprups,* during a dearth of honey in a field, would in a measure prevent a recurrence, but would not cure the disease. I would not destroy the germ, but prevent their growth, by placing them in an antiseptic medium.

If a cure is contemplated when little honey is coming in, the above modified McEvoy plan should be observed in every detail, and the bees fed with salicylated syrups until the combs are well filled, so that all food may be considered antiseptic by the time brood-rearing begins.

*Sodium salicylate one ounce, water five gallons, sugar forty pounds. Make syrup without heat. Antiseptics prevent germ growth. Disinfectants destroy the life of germs, by actual contact only.

Great care should be taken to melt all old combs and remove starters into wax at once. Do not use a solar extractor, but remove the material at once to hot water or a steam-extractor. Until further investigations shall reveal the longevity of these germs in open air, I shall recommend a thorough disinfection of the hives, frames, etc., by boiling in linseed oil for half an hour. This would not injure hives or fixtures; besides, the high temperature reached would insure thorough disinfection. Careful, practical, and experimental work, coupled with microscopical investigations in the presence of this disease when at its worst, will, I feel confident, discover some practical plan for its successful eradication.

Literary Notes

"Our Feathered Friends" by Elizabeth and Joseph Grinnell, D. C. Heath & Co., Publishers, Boston, Mass. A neat volume of 144 pages for young people. Our readers will recognize Miss Grinnell as being the author of the article "Under the Apple Trees" which appeared in our January issue. Her book is written in much the same style. It has proved to be very popular with schools in the United States and has been especially recommended by many branches of the Audobon Societies which are seeking to develop public sentiment in behalf of the protection of birds. The book develops accurate habits of observation and the spirit of sympathy with bird life.

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Ira D. Sankey.

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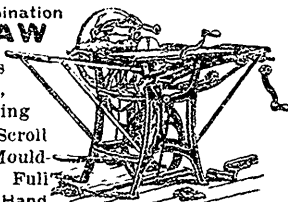
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