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WHOLE NO.
424.

Annual Meeting

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

HELD AT
TORONTO,
DEC., 1899.

Production of Comb Honey.

John Newton, Thamesford Ont.

My apiary is run for comb and extracted honey. I usually select the strongest and "best" colonies for comb. As regards the best, if the records of the hive should say that they built brace or burr combs I do not want that colony for comb, as I believe breeding has a great deal to do with these peculiarities, and comb honey supers with braces across them are not nice to handle. I would say pinch such a queen. When spring work has been done—clipping queens, giving room to crowded queens by uncapping honey at the top of frames so that those cells will be replaced with eggs, levelling up hives, etc., and before the honey season opens I see that my comb supers are scraped and filled with sections $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{3}{8}$; these are filled full of foundation, about 12 square feet to the pound, made from the finest wax that can be procured. Separators are used between sections, and a perforated follower or divider at the sides, which

gives an extra bee space and is of great importance for keeping up the necessary heat day and night on the outside of the outside sections. The divider is just made as one of the separators with cleats nailed on to allow the extra bee space, and filled with $\frac{5}{16}$ inch holes. I use a two part super, thus giving the bees room to store their surplus, and at the same time not giving them so much room they would loth entering as they do at times when a super is given which will cover the whole top of the hive

Now, everything ready when the honey season opens, with hives selected which we desire to run for comb honey, and which should be crowded with bees from side to side, and which on drawing back the quilt we see to be filling up with new honey, we place on one of those half supers close down on the rim of the hive to keep it snug and warm. When swarming commences hive the swarms on the old stand in hives in which has been placed five frames with starters about two inches deep, the rest of the hive being filled with dummies, place the parent hive alongside of the swarm for five days, after removing to new stand, the flying bees will go into the swarm and thus strengthen it up. These give us the best colonies for comb honey production. If the swarm is very large as when one or two go to-

gether, supers are at once taken from the parent hive and placed on the swarm with a perforated metal queen excluder between so that the queen will stay below and make her home there. An average swarm I leave a day or two before putting on supers, this plan catches the pollen below and prevents it being stored in the sections. If I have placed on a perforated metal queen excluder I remove it as soon as the queen has made her home below, as I find the bees do not work so readily in the sections if they have to pass through an excluder. During the honey flow the colonies need close attention to see if they require more room, or supers reversed from end to centre so as to get the end sections as well filled as the centre ones. We work the tiering system, always putting the empty super next to the hive. When supers are finished they are taken from the hive by means of the smoker or bee escape, and carried to the store room. When all honey is taken off, the sections are scraped and graded, then packed in no-drip cases holding one dozen sections; then they are ready for the market.

Mr. W. A. Chrysler: No doubt Mr. Newton knows more about comb honey than I do, but I will endeavor to insert a wedge. I would take your follower out, in regard to perforated followers to retain more heat I think we understood yesterday that a follower has no heat producing qualities.

Mr. Newton: I did not say to cause more heat; It will cause a more even temperature.

Mr. Chrysler: It has something to do with keeping it warm, no doubt, but probably many of us have not sought the real reason for that. In as much as the outside combs of a

brood chamber between the outside combs and the hive contain the coldest air of the hive, and they get the draught from the entrance, there is a current of air that passes up on the two outsides of the hive, and will pass to the sections if those two spaces are not closed, and this perforated divided will, no doubt, if placed properly, conduct that cool air so that those combs will be built out better than they would be, and probably built out as well as in the centre; but I think we can discard those perforated followers and close up those spaces on the two outside frames of the brood chamber, the top of them, and then the necessary air will have to pass through the cluster of bees, more especially at night, as the comb building is carried on all night long, and in the very cold weather the cluster of bees will somewhat contract and cause those draughts to go up on the outsides of the hive, but I think Mr. Newton recommended dummies and five frames. I do not think it pays; I would rather put the whole of the combs in at one time, because they have plenty of space below, and they will build the brood combs down no faster than the queen wants them, and if you have the full sheets of section foundations they will go up there at once, and they will not build down below even so fast as when contracted, especially if you leave them any time before you put on the super. They have an idea that it is pretty warm down there, and they are so close together they will no doubt build quicker than if they had the whole space across. With reference to drone comb being built, as they build the drone comb beneath the queen as she needs it, if they have plenty of room there they will not build drone comb because drone comb is built when they are thinking

of swarming, if they build just ahead of the queen they will have an idea that they are going to be crowded soon and will build more drone comb. As for supers being placed on bees I think there should be very good care taken to have them down very tight so as not to allow any light or air to pass through. Draughts, even though very slight, hinder the building of combs. Try to protect the bees building comb as much as you can. If you take them out into the air and light they will stop; I would even rather have the supers overlap the body of the hive in order to thoroughly keep the draughts and light from them.

Mr. Darling: Lest I forget, with regard to one thing Mr. Chrysler said that drone comb is build when the bees are affected with the swarming fever, I had a little experience about ten years ago. I think it was ten colonies I thought I would take comb honey from; they were new swarms and as some of you know, I used altogether at that time the old Jones' hive. I placed the swarms on from five to seven frames with starters, put in the perforated metal, gave them the sections behind this perforated metal. Three out of seven I think would have been completely ruined for the next season if I had not overhauled them and taken the combs away and given them some other. There was more drone comb built than worker comb. They were new swarms on starters, and not too much room, and they had only the sections to work in; they did not build the drone comb very fast. Of course, I know people say old queens will be the cause of more drone comb than young queens; in this case I cannot say as to the age of the queens.

Mr. Chrysler: What I meant about the drone comb in contracted frames

was that I think you are liable to get as much, if not more.

Mr. Newton: I must say in regard to Mr. Chrysler's remarks that we do not get anywhere near as much drone comb when contracted as if we left an open space.

Mr. Shaver: Do you and Mr. Chrysler use the same sized hive. I have an idea that Mr. Newton's five frames are equal to Mr. Chrysler's hive.

Mr. Newton: Well, I can tell you this, I have worked with a dozen different hives, and my experience has been the same in every instance, that contracted hives do not produce as much drone comb.

Mr. Sibbald: Comb honey is a part of bee-keeping that I am very fond of. I have given it quite a bit of thought and study, and I think from the paper that Mr. Newton has read that he would be able to produce first-class comb honey. In some things I agree with him, in other things I have a different opinion. He said he used perforated divider on the outside. I would like to ask him why it should be perforated when he wants to retain heat? Why not use an unperforated divider at the outside? Then he uses a half super. Well, I can understand why he would use a half super when he contracts his bees that way up to the centre of the hive, because they would not fill the outside sections so well. I rather think Mr. Chrysler's idea is right in the matter of full hive: and I would rather have swarm starters, not two inches, but half an inch or quarter of an inch, just sufficient to let the bees start, and instead of clustering in the centre they will cluster across the top, and they will start every one of those little starters. You can spread them out

by coaxing them on to these little starters, and when we have them spread all across there we can put the super on; and the bees will take readily to this with full sheets of foundation because they have not much below, and they would rather use that than build new combs, and will spread right up to the very corner of the super in an hour after it is given and they will go to work at once, for where their treasure is their heart will be too. As to the drone comb, I think Mr. Chrysler is right about that, in my experience, and I would just like to ask Mr. Newton if he has ever tried to hive in a large hive, putting in full combs with small starters.

Mr. Newton: Yes, before I made foundation for myself I did not want to spend any more money than I could help, and I used to use the narrow starters, and I never had as good results as with a two inch starter. I would not advise any larger than two inches.

Mr. Sibbald: Why draw the line at two inches?

Mr. Newton: Why draw the line at one-quarter? because that suits you best and two inches suits me best.

Mr. Sibbald: And if you take it down to two inches why not make it three inches?

Mr. Newton: That is where you are going too far; you are giving the queen too much space. The bees will start to build, and she is going to have a chance to let them build a lot of drone comb, but with two inches she fills that. I wish I had brought a few combs that have been built on the five frame process, and I think I could take you to hives in my yard where looking at five frames

I do not think you could find a patch of drone comb with young queens.

Mr. Sibbald: In our yards we have old and young queens, and we cannot govern that, and we have to do the best we can with them.

Mr. Newton: I have tried what Mr. Chrysler and you suggest in regard to using dummies, and hiving them on the full size hive, and to me that has never given as good results as contracting.

Mr. Sibbald: I disagree with you on that point.

Mr. Newton: I discarded my full super and went to work with half supers, and I think they are a great deal better than full supers which cover the top of the hive.

Mr. Sibbald: I find with the work I have to do in the busy season that one super is small enough, and I believe I would rather have a bigger one still if I were going to change again. As to hiving on the old stand and placing the old hive alongside, as Mr. Newton said, I agree with him there. He said he left a swarm two days before putting on the super. I think he is pretty nearly right in this, although it might not be out of the way to put the super on next day.

Mr. Newton: I agree with Mr. Sibbald, because there is so much difference in some hives; some would make their home there in half an hour, and go right straight to work.

Mr. McEivoy: Would there not be some danger of pollen if you did this right off. With two days' system you would not run any risks.

Mr. Sibbald: If they are hived at noon, and you look in at night if there has not been a little foundation you will find perhaps three inches of comb, and the next day you will be

surprised what a lot they have; and the queen does not start to lay right away, as a rule, and there is room for honey and for pollen, and that is why I object to Mr. Newton's plan of two inches of foundation; they draw that out and they get a whole lot more added to that before he puts on his sections; they would have those five or six nearly drawn down to the bottom in two days without a super.

Mr. Newton: That has just put me in mind of one reason why I like that two inch space better than Mr. Sibbald's way; I can get my pollen quicker below than he can catch in his half inch, because there is no place whatever to store his after they start to build.

Mr. Sibbald: I can readily understand where they put their pollen, because if you look in a hive you will find it on the comb near the outside, you contract them so that they have not any outside comb; but if you had ten you would find the pollen off to the outside. I have produced a good deal of comb honey on that plan, and very few sections have been spoiled with pollen—I do not think there has been two dozen in all I ever had. Now, Mr. Newton takes off the supers with a bee-escape.

Mr. Newton: Sometimes; I do not think in the last two years I have used one bee-escape.

Mr. Sibbald: As to packing for market, I believe if every one would take the trouble to pack them up in an attractive shape there would be better prices got for comb honey, and the grocers would not swear so much when they handled them.

Mr. Holmes: One more point; Mr. Newton tells us in reference to the queen excluder he placed it between the hive and the super, and after the queen got well established below he

removed the excluder. We would like to know just what "well established" means as to time.

Mr. Newton: I would say just about what I have said regarding the putting on of the super—it might be half a day, it might be two days; and I do not think if it is taken off the second day they would ever attempt to enter the sections.

Mr. McEvoy: As a fixed rule?

Mr. Newton: We have no fixed rule.

Mr. Hall: When she commences to lay.

Mr. Newton: I was sorry our friend Holmes was not in last night when I brought up the question. I would have liked to ask him why he does not use perforated metal in the extracting season between all supers?

Mr. Holmes: Answering that question just on the moment I would say for this reason: my experience has proved to me that the percentage of trouble in that regard without the use of the queen excluder is very, very small indeed; and, further, I take it that the bees work freer up and down without it, and so long as the queen does not bother us to any great extent we forego the use of them except on the young swarms, and I put in the queen excluder there, and leave it there perhaps a little longer than Mr. Newton does in the production of comb honey.

Mr. Hall: I use queen excluders. The first lot of queen excluders I bought was for eighty stocks of bees; I was so tickled with them that a week after we bought queen excluders for every hive we have, and let me tell you, I don't want any queen excluder except in the time of swarming, and then for not more than three

days, unless I am too busy to take it off; but we never want any hive for extracted honey of two, three or four stories high without the excluder to keep the queen below, because in my case more than fifty per cent. go up. My hive is equal to eleven Langsworth frames, 18 inches long and ten inches deep, and it is not enough for all queens, even without the honey, and, therefore, I don't want to run any risk. I put the queen excluder on. Then, when extracting there is no danger of killing queens, and we can work as quickly as we like; if you do kill a few hundred worker bees you don't do any harm. I always use the queen excluder in the extracting hives between the brood chamber and the supers.

Mr. Holmes: I said that the percentage of trouble in that respect was very, very small. I think I would be safe in saying not five per cent.

Mr. Hall: Your location must differ from mine, but with me fifty per cent of the queens go up.

Mr. Crysler criticised this paper in respect to the perforated followers being placed on the side of the super; he complains of the draught. The only reason for these is to prevent the draught. They need not be perforated for that. I use perforated and plain, and I find that the plain, if placed on the side, is equally as good as the perforated; but experiences are that if you have a colony that fills up your hive from corner to corner the bees are going to fill your sections from corner to corner, and if there is an extra space outside your divider that is filled with bees as well as next to the comb outside of the super will be just as warm as the centre.

Mr. Crysler: Why not prevent it before it goes there?

Mr. Hall: We do prevent it.

Mr. Sibbald: I think the plain would be just as good.

Mr. Hall: My experience is that the one is just as good as the other, but the space behind it is what you want.

The chief object of the half super is to coax the bees up. They will work on 12 more readily than on 28. When we put on the second super we have to have half-honey boards: when they have got nicely to work in one piece we lift this up, and shove this over, and the honey is around where there is no brood, and they will immediately attempt to fill up that cavity in the centre, then we have them full at the corners anyway. We don't want a half super after that, but for convenience sake we use them up to 5, 6, 7, 10, 12, 14, as the case may be.

Mr. Darling: What are your half supers made of.

Mr. Hall: $\frac{1}{4}$, $\frac{1}{2}$, or 1-16 or 1 inch—it makes no difference. My hive is made of inch stuff. I have to use $\frac{1}{4}$ sections because that is the standard size, and unless I used that size I could not get more sections if I ran short. If we ran short we would lose, perhaps, a large percentage of our profit, and so I had to discard the oblong sections which I used to use.

Mr. Darling: Do you put your sections lengthwise or crosswise?

Mr. Hall: Lengthwise; I prefer to have the back end of my hive to run off rain water.

Mr. Sibbald: After you put on the first case you say it does not matter about the half case any more?

Mr. Hall: It is more convenient

and quicker to use full cases, but towards the end of the season we put the half ones on again. With the half super if you think there is going to be any more honey put on 12 instead of 28, and those 12 are more liable to be filled than the 28, but through the main honey harvest they require a little more handling, but we got so much more honey that it pays for the extra handling.

Mr. Darling: When you put one super, do I understand they begin at this end of it?

Mr. Hall: Yes sir.

Mr. Darling: Why not take this super, if you want it filled up, and shove it that way?

Mr. Sibbald: You say they start over the brood nest to build the sections. That is one of the weak points of Mr. Newton's system; he contracts to the centre, and there must be sections out over the outside of the brood nest.

Mr. Hall: Yes, he uses dummies and they can work into those sections.

Mr. Sibbald: They will not take to them as quickly.

Mr. Hall: Certainly not. I will give you my experience hiving with full hives. We use five starters—I generally put in half or three-quarter inch because it is easier for me to handle—we have the five starters for the purpose of getting all worker comb built by our bees. In an out-apiary this year we shook them off into full hives. I have been through them since and I am sorry to say that there is forty per cent. of drone comb—drone comb at one end and worker at the other. With my bees it requires five frames to hold them, and they will swarm out in about ten days after they have been

hived. One reason why I put them on five frames is to get all worker comb. Another reason is it drives the bees up into the supers.

Mr. Shaver: What age queens do you use?

Mr. Hall: I like queens of the previous season, but I do not always get them so. Then as to bee escapes, I have three dozen and three of them and I have not enough.

Mr. McEvoy: I have not enough, and I have that many.

Mr. Hall: I use none for extracted honey. I want bee escapes for comb honey; except one is pretty quick about it when removing the supers you have very likely to have it injured.

Mr. Shaver: What kind of an escape do you use?

Mr. Hall: The Porter proper.

Mr. Brown: How many do you find the best number?

Mr. Hall: One is better than fifty or than three. I put them on in the afternoon and I go around in the morning and take off my supers and take them to the house. I have a honey house for extracting, and for the carpenter work; I keep my honey in the house, and it is over the furnace room. I have a register, but I never need to use it.

Mr. Sibbald: Do you ever find at the latter part of the season they will chew the sections?

Mr. Hall: They will do it if you smoke them. I had a young lady in my east apiary and when I went out there she had sixty pound tins and 18 supers of honey, but she had smoked them pretty well to get on the escape boards, and some of them had bitten the sections. We use bee-escapes not for extracted honey but for comb honey.

Mr. Miller: Mr. Newton in his paper said he left the swarm five days. The colony in that case with my management would swarm in a large percentage of cases and as to the escapes, I use them; I would not think of doing without them. The perforated divisions I have not used sufficiently to say any thing about them. With regard to half supers Mr. Hall gave us very good reasons for their use. My hives being out I use five frame equal to five Langstroth frames, but I have brood under the whole super, I have no use for those half supers. I use the Heddon hive and have brood under my whole super surface.

Mr. Newton: I thought I was using a very low estimate in mentioning five days because I did not know that we had any swarms at that time.

Mr. Hall: I have fifty hives the same as this gentlemen uses, and I have 150 supers on them, and I have the same objection to those supers, I use them because I have that hive and those supers fit them. Then, I very often have a swarm of bees because I don't like to give them another full super of 28 sections. It is the first part of the season and the end of the season where the small supers have the superiority. I have 150 of those very supers, and they are good; I don't use them as the maker intended them to be used. I never take out one uncapped comb and put it into the centre so that it will be finished, and I never turn the super over because my bees fill the bottom better than the top; I never move the wide frames which hold four sections because I have not the time. I fill the thing full of foundation. I guess that it was calculated to be used with little bits, and that reversing was intended on that account.

Mr. Heise: I conducted a experi-

ment some two years ago. I had a board something after that style (shows), and there was an escape at each of those points, 8 or 9 all facing the one way; I had then a Porter back of that three inches, and then a double escape, making in all 13 escapes. I piled up about five supers, and put the escape board on top. The bees started to rush out of the super at the side, and 90 per cent. came out of that one space.

Mr. Hall: They come out where the sun is.

Mr. Craig: There has been a great deal said about escapes; I don't want to say anything for them or against them only that in our own experience while we have an abundance of escapes we have used a carbolitic cloth instead of either smoke or escapes, a small quantity of carbolitic acid added to a quantity of water, and put on cotton cloth. There is no danger of any taint as the acid is volatile.

Mr. Darling: You spread that carbolized cloth over the super when it is on the hive before you take it off?

Mr. Craig: Yes.

Mr. Brown: How long should it be on before it is taken off?

Mr. Craig: Just a few seconds.

Mr. Hall: I put these things on in the afternoon, I do not like to work in the sun so in the morning I get around with the wheel-barrow and wheel load after load into my room, and I take off my escapes at my convenience. They may be on a day or two before they come off.

Mr. Armstrong: I wish those who do not use queen excluders would say how they rid their supers of bees without the bee escapes.

Mr. Newton: I give them a good blast of smoke, and grab up the super of

sections and give them a right good shaking, and I soon get rid of the bees, I never noticed any cappings bitten in any way. A great many people use different things in their smoker; I think there is nothing to equal planer shavings when we want a right down good smoke for a short while.

Mr. Chrysler: There would be a little danger with some bee-keepers using too much smoke, without a warning, and have the honey tainted. With proper judgement there would not be much danger in that line, unless it might be smoke from certain kinds of fuel.

Mr. Newton: Every bee-keeper will have to use his own judgement.

Mr. Shaver: As soon as the bees go down stop.

Mr. Dickson: In smoking I have used a great many things, and I must admit the shavings are the best.

Mr. Hall: Have you tried cedar bark thoroughly dry?

Mr. Dickson: Yes, and it is too hot.

Mr. Sibbald: With regard to Mr. Armstrong's question I may say I use very little smoke. As soon as the cover is taken off the bees will face you, and I smoke just to let the smoke touch the bees and they will turn around and run the other way, and then you can take the section off. My method of shaking them is as follows: I lay a three corner stick on the ground, and take the super in both hands on the outside with the ends of the sections down and just tap gently until they start to run; and then when you get them running pretty well a few shakes will shake them all off, and in the middle of the season I have taken off 500 sections in about an hour and had them all loaded on my wagon. There is one thing I ought to mention; when the

honey is very warm in the afternoon if you hit too hard you may break the sections. I had one case where there were three or four in the centre broken. I knew what did it, and I now know to avoid it.

Mr. McEvoy: At the close of the season supposing they were a little bi inclined to rob? t

Mr. Sibbald: You do your work so quick, and when you are shaking them they cannot catch on, and when you get them out you take it away.

Mr. Newton: I never turn the point of my smoker down among my sections; I always turn it straight so that the smoke goes above. If it went down it would be apt to taint the cappings of the sections.

Mr. McEvoy: Take an ordinary man, and he drives them down with a great smoking, and those bees are going to have revenge, and they set to work and chip the capping.

Mr. Newton: As regards escapes, I had one case that sickened me of them: it might have been my fault; my escapes got clogged, and I think I had four nice supers which I did not go back to until the next morning, and when I did they were not worth much.

Mr. Brown: That has been my experience with the escape. I have used only one, and my experience has been like that.

Mr. Shaver: I am like Mr. Newton, I have one, and that is one too many.

Mr. Newton: There has been a great deal of discussion on the American side about bee escapes, and I find there are a great many who have discarded them on the ground that they spoiled so many sections. I believe that one reason is they are not put on at the right time, and another is they are apt to get clogged.

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EDITORIAL NOTES.

"Don't take off your winter clothing too soon," is an oft-repeated admonition, and a wise one. Don't remove your winter packing too early is a not less important one in bee-keeping, some young bee-keepers, and indeed some of the older who should know better, are far too anxious to see their colonies out in summer dress, courting "spring dwindling," "chilled brood" and other ailments peculiar to the season.

Notwithstanding the long list of good reports last month, later ones assure us that the winter and early spring has not passed away without some very serious losses in many districts. Dysentery seems to have been more than usually prevalent, and especially among bees wintered outdoors, some attribute this trouble to the quantity of "honey dew" among winter stores. While the cold snap which came just as the fruit bloom opened and the bees began to bestir themselves, played havoc among the weaker colonies.

The question presenting itself to many just now is whether the better prices for honey can be maintained when the new crop comes in. Certainly there is an excellent opportunity for making an effort in this direction if bee-keepers will only be unanimous and talk the matter up and work it through their local associations. The poor price difficulty

originated not with the bee-keepers who depend on bee-keeping for a living, but with those who make it a side line and who retail their little in their local market at whatever price they can get for it.

When talking up price it would be well to keep up quality, this after all has much to do with the free sale of the commodity. Unfortunately many of our bee-keeping friends are not aware how very sensitive honey is and how easily it is affected by its surroundings. Keep cans covered and air tight as possible, not only for the sake of cleanliness but to retain the fine aroma of the honey. Much of the distinct flavor of the basswood is lost by the heating and exposure in liquifying.

The fifth edition of the revision of "Langstroth on the Honey Bee," by Charles and C. P. Dadant is just out. This work has had the most world-wide sale of any book on bee culture, having been printed simultaneously in English, French and Russian. The work of Langstroth is a classic, and the world owes to him most of the progress that has been made in bee-culture in the past 50 years, as the invention of the movable frame hive was the first active step towards comprehensive and successful bee culture, Mr. Langstroth was also an observing naturalist, and many of his remarks on the habit of the bee have been original, though they are now so thoroughly known that they seem to have ever been a part of the public knowledge. The revisors of Langstroth are practical bee men, honey producers on a large scale, and all their ideas are stamped with the evidence of practicability. This work well repays the beginner who buys it for information, as well as the specialist who wants to add to his apian library.

Notes & Pickings

By D. W. Helse, Bethesda.

The notices sent out by the executive of the O. B. K. A. in regard to spraying fruit trees while in full bloom, will no doubt produce a good effect. Since they have been posted up in this locality the attention of the public is being drawn to them and while the bee-keepers will no doubt be benefitted by bringing to the knowledge of fruit growers, in a very simple way, that there is a law which prohibits spraying at such times, and while I congratulate the executive in the action which they have taken, yet I think the posters could have been materially improved if the proper time for spraying had been inserted, that is—the time when it would be of most benefit to the fruit growers, whether before or after bloom, or both. I have had a number of enquiries along that line since the notices were posted up. If this had been given, I think perhaps those orchardists who may be somewhat inclined to be unreasonable would be less likely to contravene the act.

The bees have passed through the second winter in my bee-keeping experience in which they have been confined for about four-and-a-half months on their summer stands without a cleansing flight, and in both occasions they came out booming in the spring with the loss of but one colony in each instance (from starvation). In the one thus lost last season, said colony had not less than 46 pounds of honey in the hive on Oct. 15 last, yet when I examined them on April 15 they had consumed the last drop and were starved. And

I wish to say right here that in my past experience 30 pounds of stores, which has often been said to be sufficient for a colony on the summer stand, is in this locality, generally speaking, deficient for the best prosperity of a medium stock. Plenty is my motto, and that is none too much, 40 pounds suits me better than 30.

There is every indication of being a rather wide gap between fruit bloom and clover in this locality. The fruit trees being now in bloom, and the clovers as yet very small, if a long gap should occur then is the time when the apiarist can make money by uncapping the sealed honey that may be in the brood chambers, in the absence of such a small amount should be fed to the colonies daily in order that the larvae may be well nourished and brood rearing go on apace.

The mortality among bees seems again to have been quite large during the past winter, or rather during the past spring, as most of the losses have occurred since the snow left us, and by what I suppose might be properly termed "spring dwindling." Although I learn that quite a large percentage succumbed as a result of having been insufficiently supplied with winter stores. To suffer a loss from the latter cause is a lasting disgrace upon any bee-keeper who will permit it, this "picker" is included among the disgraced ones. Spring dwindling is generally looked upon as being sequel to bad wintering, and I believe poor wintering does contribute largely to a bad case of spring dwindle. But there are at least two other factors that also contribute very largely to it. I refer to the age of the bees in a hive when winter approaches, and condition of the weather for perhaps days and weeks of the following spring. In the former, how can any-

one expect to spring his bees successfully when brood rearing ceased in July of the previous year as was the case a year ago, or at most the forepart of August, consequently before such could receive any assistance from the spring reared bees they would be probably nine months old, and the chances are that when they arrive at that age spring dwindling has so depopulated the colony that it will be of no further use. This factor, perhaps, may and no doubt can be largely controlled by the apiarist who will give to his bees the attention that they justly deserve. But with the other, the apiarist is powerless to control the elements. For instance, take the present season, we had a few perfect days for bees when cat-willow first came into bloom, and the bees worked well indeed. But suddenly the atmospheric condition changed. Temperature merely high enough to entice the bees out, but fierce gales prevailed for ten or twelve days which blew hundreds and thousands of them to eternity. What could the bee-keeper do to prevent that style of "spring dwindling"? Simply stand by and lament over his calamity, eh?

If the Ontario bee-keepers are so fortunate as to secure a reasonable crop of honey the present season there is no reason in the world why better prices should not be obtained than has been the case for some years past. The markets have undoubtedly been completely cleared, and the demand for honey has been strong. So if honey producers will only make an effort to maintain prices there should be no difficulty in securing a living profit for the capital invested as well as compensation for their labor.

Contrary to my convictions, and what I and others have advocated as the proper spring management, I am

this spring adopting J. B. Hall's advice, to not open the hives until fruit bloom. Only having so far examined those stocks which I knew required attention. Whether this is an advantage over my former management, I will report later.

Association Meetings.

HALTON.

The Halton district Bee-Keepers Association meeting was held in the Town Hall, Streetsville, on Tuesday, May 15th. There was a good attendance of members and others. Among those present were Mr. W. Couse, Streetsville, Mr. Geo. Laing, Milton, Mr. H. G. Sibbald, Cooksville, Mr. J. Perie, Duimquin, Mr. A. R. Brunskill, W. F. Switzer, Mr. J. Armstrong, Mr. C. Adamson, Mr. Geo. E. Saunders.

The president, Mr. Geo. Laing, occupied the chair.

After the usual routine business a number of questions were proposed and profitably discussed as follows:

The cause and prevention of spring dwindling.

Spraying of fruit trees.

The wax Press versus the Solar Wax Extractor.

Honey for Paris Exposition.

Regarding the prevention of spring dwindling, most of the members considered that plenty of good stores and young bees in the fall would do much towards this.

The circulars sent out by the O. B. K. A., re spraying of fruit trees was commented upon favorably and all present believed that bee-keepers throughout the country would be materially benefitted by the action.

The wax extractor question called forth a diversity of opinions, but all advocated the production of good clean wax. A good plan proposed by some was to re-melt the wax after taken out of the extractor and strain it through a very thin cotton or cheese cloth into a clean vessel with a little warm water in it to prevent the wax sticking and set it away in a place where it will cool and harden slowly.

Re honey for Paris exhibition, several of the members proposed to send some of this seasons honey if they would be allowed to do so.

Reports of the condition of the bees at present was much below the average, some have lost heavily in the wintering. Prospects for honey crop is not very good.

Next meeting will be held at Milton on or about the 18th of October.

G. E. SAUNDERS,
Secretary.

YORK.

The York Bee-keepers Association met in the Town Hall, Markham, on Wednesday, May 16th. There was a fair attendance of members and others; letters were read by the President from a number of persons who were unable to be present, expressing their regrets. Mr. J. F. Davison was elected Sec'y-Treas. to supply the place of Mr. Louis Maples, who has removed from the county. A hearty vote of thanks was passed acknowledging Mr. Maples' very efficient services and regretting his removal from the Association, with which he has been connected since its organization. A motion of sympathy and condolence was passed by the Association to the relatives of the late Mrs. G. J. Size, whose sad death occurred last month.

Mrs. Size was a member of the York Association. After the business of the meeting was transacted the programme of questions was discussed and answered somewhat as follows:

Question No. 1.—May we not overdo turning honey into bees in the early spring, in case of a failure in the honey flow?

Ans.—It is generally considered best to increase bees as fast as possible in the spring, particularly where there is no bass-wood and only clover to depend upon for a surplus.

Question No. 2.—Providing increase in numbers is desired, which is most profitable, to buy the increase or allow store colonies to swarm?

Ans.—Buy the bees when they can be profitably bought.

Question No. 3.—How can the Solar Extractor be used, without darkening the honey which passes through it?

Ans.—Leave it in the extractor but a short time, remove before the wax melts.

Question No. 4.—When seven frames are used in an upper story of an 8 frame hive, and those frames when full used below, how many should go in?

Ans.—Put in full number of frames but rather than cut them use seven.

Question No. 5.—Will anyone, having experience with reversible extractors, give their opinion regarding them?

Ans.—A good reversible extractor is all right.

Question No. 6.—What is the best system of fastening foundation in frames, is wiring necessary, if so, what is the best system?

Ans.—(A variety of methods described.) Wiring is generally advisable.

Question No. 7.—Which is the best sized section for the home market?

Ans.—The tall section is considered the best, better filled and best for selling.

Question No. 8.—Has locality anything to do with the size of hive and general system of management in the apiary?

Ans.—Yes, the hive should be suited to the climate. Colder climate requires a larger hive than the milder.

Question No. 9.—Which is the best sized hive for all round use?

Ans.—A hive about 11 or 12 inches deep, the Langstroth in many cases being not deep enough.

Question No. 10.—Where the bee-keeper desires only a prime swarm, what is the best method of preventing seconds, and at the same time securing a surplus from the parent colony?

Ans.—As a rule move the parent stock from the old stand and place the young swarm in its place. If the hive used is small this will not prevent second swarms.

Question No. 11.—Which is the simplest way of requeening an apiary with good queens without purchasing from breeders.

Ans.—Destroy old queens and introduce queen cells from a colony that has a good queen and has proved its qualities as a honey gatherer.

Question No. 12.—How can the flow from early blossoms be utilized to best advantage?

Ans.—If an abundance, allow the bees to store in supers and feed or extract before clover bloom.

Question No. 13.—How can the bee-keeper best manage to prevent the mixing of dark and light honey, both comb and extracted?

Ans.—The only sure way is to extract.

Question No. 14.—Will honey deteriorate if not properly cared for

after it has been removed from the hive, if so where should it be kept?

Ans.—Yes. Honey should be covered with a cloth and kept invariably in a warm dry place.

Mr. J. D. Evans advised bee-keepers not to be too anxious to place their honey on the market and to keep the price up believing that as the loss of bees in many places was large and old honey being pretty well sold out, fair prices would be available. He also thought that bee-keepers' supplies were made of too light material.

The report as to the condition of bees was differed widely. Some bee-keepers' stock were in prime condition, while others had sustained a heavy loss. The acreage of clover growing is not large.

J. F. DAVISON, Sec'y.

Can a Bee Carry It's Own Weight in Honey?

Observations made to test this question showed that bees can carry with ease twice their weight in honey. Several bees were caught as they returned to their hives laden with honey and, after inclosing them in a little box, they were carefully weighed. When the bees had unloaded their honey they were again caught, placed in the same box and weighed a second time. This experiment showed that the bees when laden weighed three times as much as when empty. It was therefore demonstrated that a bee can carry twice its own weight of honey, and can fly very considerable distances with that weight—Tit-Bits.

Paris Exhibition, 1900.

A congress of bee-keepers will be held in Paris from Sept. 10 to 12 next.

The Month's Work

A. E. Hoshal, Beamsville, Ont.

With June comes a decided change in the arrangements of our colonies. During the spring months and up until June before the opening of the clover, the colonies have been worked to their utmost for brood to have them of sufficient strength to gather the harvest, but after the beginning of the honey harvest to continue to push them unduly for brood is misdirecting them in their work, they should now be directed strongly into honey gathering instead. The honey harvest begins about the 10th of June with the opening of the clover bloom and lasts on an average about one month and not all summer as many suppose.

The first work to be done in summer management is to arrange the colonies for gathering. This is simply arranging their hives, so that their brood chambers will be as nearly as possible filled with brood and devoid of honey, with the surplus cases immediately above the brood and as near to it as possible. To do this, the hives should be all gone over just before the clover bloom opens, and any combs found in the brood chambers which do not contain brood remove, and the space which they occupied closed up with fillers (sometimes called "dummies.") If the queens have been normally prolific, the colony wintered well, and been properly managed during the spring, there should be but few combs to be thus removed unless the brood-chambers of their hives are unreasonably large. As soon as the hives are thus arranged, those colon-

ies which have no surplus cases already on them should now be given one each, placing at the same time a slatted queen-excluder between their brood-chamber and the case just given them. This queen-excluder and the fillers will keep the queen out of all surplus cases, and prevent her unduly spreading the brood, which now would be at the expense of honey to any more combs than are already occupied with it. It will also have a tendency to make the queen keep these remaining brood combs filled with brood, and so devoid of honey, thus during the honey flow bringing the brood near to the surplus cases, and also forcing the bees to store their honey in them. It is a decidedly mistaken idea to have the brood-chamber filled with honey now in order that the bees may have sufficient to winter on. Their brood chambers should be solidly filled with brood, and devoid of honey if our colonies are to do their best and most work in the surplus cases.

Any colonies which by the first week in June are found to be too weak to work, should then be united with other weak colonies until one of sufficient strength be obtained to do profitable work: it can then be arranged for gathering the same as the others.

Besides being arranged for gathering as directed, every colony should, if not done sooner, now be given an entrance the full width of the hive in front, and from one-half to one inch deep, and if the hive is not already standing in the shade it should be shaded. If the hive has a flat cover, this can be done by cleating together of thin cheap lumber, two feet wide by three feet long and placing it on top the hive in such a position as to protect it from the direct rays of the sun. No hive should now be any

other color than white. A dark colored hive will absorb an amazing amount of heat from the sun, while one painted white will reflect it.

As soon as any colony has its first surplus case about two-thirds or more filled, it should be given a second by raising the first one up and placing the second or empty one beneath it and on top of the queen excluders, and as soon as this second one is similarly filled, the two now on should be raised up and a third added beneath them and on top of the queen excluder, and this continued for as many more cases as are found necessary, always keeping those nearest filled next to the top, and placing the empty ones underneath them and on top of the queen excluders.

As soon as a case of honey is completed, which is always the top one, if it be comb honey it should be removed from the hive at once, if it is left on longer, it will become travel-stained by the bees, thereby losing that fresh, clean, white appearance so desirable in comb honey. Extracted honey, however, will not be harmed by being left on the hive too long. This honey should never be removed before it is thoroughly ripened by the bees themselves: it cannot be satisfactorily ripened off of the hives as many suppose. It is usually ready to be taken off when three-quarters or more capped, but if left on until wholly capped, there can be no mistake as to its being ripened although it may be before.

It is a mistake to attempt to work weak or off colonies of any kind for comb honey, the results will be anything but satisfactory, such colonies should always be worked with empty comb in their surplus cases for extracted honey. There is also much difference in the working strain of bees, even among good colonies. It

may be found in giving sections for comb honey to certain strong colonies that the result is not satisfactory, in which case if the sections be removed and they be given a case of empty comb for extracting honey instead, they may be found to be among the best workers in the yard.

No colony, especially a young swarm, should ever be allowed to become honey-bound for want of cases to store their honey in. The bee-keeper should watch this carefully during the honey harvest. Bees when once they stop working are like balky horses, very hard to get started again. If, however, they can be induced to swarm they will start to work at once with their old time energy.

Usually about one in every five colonies worked for extracted honey, and nearly all those worked for comb honey swarm. This will begin in June. No unnatural means such as taking away brood, removing queens or queen-cells, dividing the colonies, etc., should be resorted to to prevent this; the bees will not work as well under such conditions. If, however, they be ventilated, shaded their brood-chambers arranged, and cases adjusted as directed, it will have a stimulating effect in inducing them to work, and in proportion as we succeed in doing this, will it have a retarding effect upon their swarming. Whenever the bees are seen clustering over the front of the hive when their is honey to be gathered, it is an indication that some of the arrangements of the colony or its hive are not right, these idlers should be at work. This state of affairs with care can usually be prevented, but it is hard to cure satisfactorily unless the colony swarms. If when all the arrangements about the hive are as nearly perfect as we can get them, and the bees are doing

their utmost at gathering, they do swarm, no misfortune has happened, no set back to their work will occur if they be rightly managed. It should be done as follows:

A hive which we will call "A" has just cast a swarm and is now clustered near by. Arrange a hive for receiving it as follows: Take a hive bottom, on it place a hive body or brood case containing five or six frames of Langstroth capacity and filled not with comb but foundation the remainder of the space in this hive body being occupied with fillers, and on this place a hive cover; this we will call hive "B". Take this hive to where the bees are clustered and run them into it. As soon as the swarm is settled on and into it, remove hive "A" which cast the swarm from its stand placing it on the ground beside the stand and to its left and giving its entrance one-quarter of a turn to the left away from where it was before. Now take hive "B" which contains the swarm, and place it on the stand from which "A" was removed with its entrance in the same position as that of "A" was. Next remove the queen-excluder and surplus cases with bees and honey they contain and place them upon "B." It will now be necessary to watch "B" closely that it does not become honey bound give it extra surplus cases as fast as required, even right away if necessary, for it will fill them in an amazingly short time to those who do not know how fast a swarm under such conditions will work.

The parent colony in hive "A" will do no more work for quite a while, but if left, alone will cast a second swarm in from seven to ten days. This should be prevented as follows: On the third or fourth day after "A" swarms give one-eighth of a turn

to the right bringing its entrance close up alongside the entrance of "B." Here let it remain until the seventh or eighth day after casting its swarm, and on one of these days, generally the seventh, when the bees are out gathering, quietly remove to some other location in the yard where it is to permanently remain. This will prevent the issuing of any second swarms from it.

Both a deep frame, and a double walled hive, the writer considers mistakes in hive construction. The work for this month as described to be done, cannot in a real practical sense be successfully carried out with either of them.

If with the beginning of the honey harvest our colonies are not of sufficient strength to avail themselves of it, nothing can be done to remedy such a defect. Other things being equal, such a bee-keeper will have to be content to receive a honey crop in proportion to the strength of his colonies, if he receives one at all.

To explain these swarming manipulations: 1st A young bee when it takes its first flight marks the location of its hive or home. If any time after this its hive be removed to another part of the yard, it will be found, that the bee on returning after leaving it, will return to the old location in quest of it instead of to the new.

(2nd) When a colony swarms the old queen always goes with the swarm, and if the colony after casting the swarm be examined it will be found to contain a number of queen cells the first of which will hatch in from seven to ten days after casting its swarm, when the young queen emerging therefrom will lead off a second swarm. These two principles must be kept in mind throughout the explanation following:

When the colony in hive "A" swarmed, its hive was removed from the stand and its entrance turned away and its swarm was put into hive "B" and placed thereupon. According to principle 1st, it will now be seen, that all the bees which have ever flown from hive "A," when they leave it again and return in quest of it, will go to hive "B" and so unite with the swarm therein thus uniting all the bees left in hive "A" which can fly with the swarm in hive "B".

The entrance of hive "A" is gradually turned back until along side that of "B". The young bees in hive "A", which are constantly maturing into flying bees, are thereby led to make this as the location of their home. On the seventh or eighth day after swarming their hive is removed to a new location in the yard; they will then return to the old location in quest of it, and it being gone they will unite with the swarm in hive "B," which is right beside where it was. This, it will be noticed, removes all the flying bees from hive "A" just before or about the time according to principle 2 that the first young queen emerges from her cell and there being so few or no flying bees left in this hive, she either cannot or will not lead off a swarm, but will destroy the remaining queen cells, and so all further attempts at swarming are abandoned.

When a swarm of bees is first hived, if everything is rightly arranged, they seem to be possessed of an intense desire to do their utmost until their hive is filled. Now, if under these conditions we keep expanding their hive from time to time by the judicious addition of empty surplus cases, so that it does not become filled, they will continue to work with the same intense energy, and I know of no other conditions under

which they can be placed so that we can get as much work from them in a given time. Now by hiving the swarm upon the stand of the parent colony and moving the parent colony away as described, the whole flying force of bees left with the parent colony after swarming is united with the swarm in hive "B" and become part of it, thus placing all our bees old enough to work under those after-swarming conditions in which they will do their very best and most rapid work.

As a convenience in hiving swarms many large bee-keepers clip their queens. To hive a swarm from a colony with such a queen it will be necessary to catch the queen and place her in a small wire cloth cage. As she cannot fly, she will be found immediately in front of the hive on the ground, which should be kept free of grass and weeds so she will not be lost. As soon as the swarm is out remove the old hive from its stand, and arrange a new one in its place for receiving the swarm the same as already described and with the queen-excluders and surplus cases of the parent colony on it. Make it look like the old hive if possible, and lay the caged queen by its entrance. They will soon start into it, and as soon as they do the queen should be liberated and directed so as to go in with them. In a few minutes they will be settled in their new home and ready for work.

Many use for extracting supers full depth cases, that is, cases the same size and depth as the brood chamber, but in the experience of the writer half story extracting supers about five or six inches deep have proved far more satisfactory in convenience of handling, ripening the honey, and getting the most work from the bees.

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—My bees are too black to suit me. I would like to Italianize them. What is the cheapest and best course to pursue. Can I do it before swarming time? I have twenty four colonies.

C. H. W.

Simcoe, Co.

ANSWER—Secure two tested Italian Queens, introduce them into two of your best colonies and induce them to swarm, you will likely secure enough young queens from the two mothers to re-queen the remaining twenty-two. These young queens may mis-mate and if you are particular to have your stock pure and there are no other black bees in your locality, simply repeat the operation late in the season or next season. It may be done before swarming if the two are hurried by feeding and the others kept back by giving plenty of room.

H. C. S.

York Co.

QUESTION—Don't you think bees rather unstable and fickle for a man to depend on solely for a living. If not, how many colonies would a man require to make a living with.

Galt, May 25th. ENQUIRER.

ANSWER—In answer to Enquirer I would say that I have made my living exclusively by producing honey since

1879. Possibly it does not take so much to keep my family as it would to keep some others.

There are three factors in keeping bees for a living: 1st, the pasture. 2nd, bees. 3rd, the man that is born adapted for the calling. Any of the above lacking, failure is sure to follow the venture. The number of colonies do not count much in producing a large crop of marketable honey. The pasture and the man count the most—the first is of more importance. I must say that to the man of the right stamp the pasture good the calling of the apiarist is no more risky than any other calling I know of.

ONTARIO.

Cure for Bee Paralysis.

After many trials with different drugs I found ultimate success with a mixture of sulphurous acid and tincture of podophyllin in the proportion of one of the former to four of the latter. I wanted a purge and an antiseptic for after effects, or in other words, something that would expel the excrement and leave the intestine in a condition afterwards not conducive to the growth of bacilli.

To $\frac{1}{2}$ ounce of this mixture I added one pound of extracted honey heated to 90 degrees Fahr., and then with a mouth spray I daily sprayed combs, bees, brood, etc., as I took frame after frame out of a diseased hive. I applied the remedy in this way, as I found it the easiest to get the bees to take the medicated honey, each cleaned up her neighbor and combs, and thus unintentionally inbibed the dose required. Result: In from 3 to 5 days a clean, healthy hive.—The Australasian Bee-Keeper.

DISAPPOINTMENT.

"Disappointment—His appointment"
Change one letter, then I see
That the thwarting of my purpose
Is God's better choice for me.
His appointment must be blessing,
Though it may come in disguise,
For the end from the beginning
Open to his wisdom lies.

"Disappointment—His appointment"
Whose? The Lord's who loves me
best,
Understands and knows me fully,
Who my faith and love would test;
For like loving earthly parent,
He rejoices when he knows
That his child accepts unquestioned,
All that from his wisdom flows.

"Disappointment—His appointment"
No good thing will be withheld;
From denials oft we gather
Treasures of his love untold;
Well he knows each broken purpose
Leads to fuller deeper trust
And the end of all His dealings
Proves our God is wise and just.

"Disappointment—His appointment"
Lord I take thee then as such,
Like the clay in hands of potter,
Yielding wholly to thy touch.
All my life's plan is Thy moulding.
Nor one single choice be mine;
Let me answer, unrepining:
Father—"Not my will, but thine."

Sept. 11th, 1868. V. T.

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