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WHOLE No
468.

ANNUAL MEETING OF ONTARIO BEE-KEEPERS' ASSOCIATION

(Continued from Page 131).

Mr. Darling : I have never made a success of breaking down queen cells. After the cells have been broken down once or twice the bees will swarm and not leave any queen cells behind. The only advantage I found in breaking them was to prevent after swarms.

Mr. Pettit : In connection with breaking down queen cells the point is as to how far advanced they are. If they are only eggs it works alright and retards them for another week or perhaps does away with the swarming entirely. If the queen cells have larvae in them it is risky.

Mr. Dickenson : I do not think we could recommend cutting out queen cells when there are just eggs in those cells. I think we might overlook several cells and our labor will all be for nothing. Whenever I notice an egg in a cell I go to work and hive my colony. I don't allow them to run me. Instead of waiting till the sun is very hot and have fifteen or twenty swarms come out in a day. I have thirty in a day and take a nice cool day for it. I don't see wherein it is necessary to cut the queen cells out if you do that.

Mr. Chisholm : Is it dangerous to

move bees this time of the year?

Mr. Post : I should say it was not.

Mr. Chisholm : I moved fourteen colonies the week before last and after I got home people told me it was dangerous to move this time of the year.

Mr. Holtermanu : Where are you going to winter them?

Mr. Chisholm : They are wintering in cold storage. I moved them for R. J. Green of Belleville. I was in there Saturday and I should say they were from five to eight degrees above freezing, I told him they were too cold, I told him he should keep it to fifteen degrees if possible.

Mr. Holtermann : That is alright.

Mr. Armstrong this is something new to me. I think if this gentleman keeps them in cold storage they will stay there till next summer and he wont have any trouble with cutting out queen cells.

Mr. Holmes : My experience in cold storage has not been a very pleasant one, but jokes aside, if our friend is wintering his bees where it is from five to eight degrees above freezing I would say they are in very good temperature.

Mr. Edmonson : I would like to ask Mr. Hall a question. You say you go through your hives once a week or eight days and if you see a colony preparing to swarm you take the bees out.

Mr. Hall : Take the brood out.

Mr. Edmonson : What do you do

with the brood?

Mr. Hall: Oh, various things. I don't shake off all the bees first; I set them down along side of the new hive and when I go the next week I make it my business to shake them all off.

QUESTION DRAWER.

Conducted by Mr. Morley Pettit.

Question: The prevention of pollen in section boxes when working on the contraction system and narrow strips of foundation in the brood chamber when hiving swarms?

Mr. Pettit: In hiving swarms on starters we use one worker comb. This one empty worker comb catches the pollen and prevents it going up into the sections. We also find a queen excluder is a help.

Mr. Sibbald: I would not agree with having one empty comb. I think that would start all down below and keep them there. That is not what we want.

Mr. Pettit: I know by experience we do not have that trouble that Mr. Sibbald has mentioned.

Mr. Sibbald: You get your bottoms filled with comb.

Mr. Pettit: They are working in the sections at the same time.

Mr. Sibbald: Slowly and not so fully.

Mr. Pettit: I think this question is a question of locality and those who have not had trouble with pollen in sections do not need to consider it. In some localities the bees do not pollen enough and in others we do not know what to do with it. Unfortunately that is the case in our district.

Mr. Vincent: By putting in one frame of drawn comb when using starters I would like to ask if there will not be more drone comb built?

Mr. Pettit: Yes, that is the objection to the system, but I have

not been able to keep the pollen off in any other way.

Mr. Gemmel: If you limit the number of starters in the brood chamber it will not be so bad—say five starters and one empty comb—the more empty frames you have in the brood chamber the more drone comb you have.

Question: When rendering wax what is the best method of cleaning it of propolis which I find melts and combines with the wax?

Mr. Pettit: The only method I know of is to keep it out of the wax before it goes into the wax extractor.

Mr. Brown: I would like to know how you do that?

Mr. Pettit: We do not find propolis on the combs themselves enough to do any harm except what is stuck on the edges of the top bars and around the frames and when you are scraping frames do not scrape that in with the wax, scrape it outside.

Mr. Post: Will wax and propolis mix?

The President: No.

Mr. Hall: Both in propolis and also in bee pollen if you have two vessels or anything that will keep warm, make it hot and pour it into your vessels and pour some boiling water to fill up. Shut it down with a cloth and leave it to settle and your propolis and pollen will be found at the bottom every time.

Mr. Holtermann: I rather agree with the idea that there is nothing in propolis proper that will melt, it is simply the wax that is in it and I would object, as far as color goes, more to the pollen getting in than the propolis.

Mr. Hall: If you give it time to cool the propolis will be next to your wax and below that the pollen, and the pollen you can wash off with your

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hands. The secret is to keep it hot so that it can settle.

Mr. Holtermann: I always look with gratitude towards all that Mr. Hall and men of like experience have taught me but I think a quicker way to get rid of propolis and pollen is to strain the wax when it is hot and if there is any left it settles.

Mr. Hall: We strain it to catch any chips, bees wings or such like that may be in it but not for pollen or propolis.

Mr. Holtermann: You think the pollen really does not melt.

Mr. Hall: It does not and if you give it time to settle it will be in the bottom.

Question: Has any one had any experience in using this sample (produced) for foundation?

Mr. Pettit: This, as far as I can make out, is pure paraffine. I am not a foundation manufacturer and I would like to hear from those who have had any experience in using this for making foundations. So far as I am concerned I hope none of them have. If they had I would not like to patronize them.

Mr. Brown: This sample has been sent to me, recommended strongly as being used in Europe to a great extent for making foundation for bees. I would like to know whether any of the gentlemen present have had any experience with it.

The President: From the nature of that it would be impossible to make foundation out of it but it might be adulterated with some other wax by means of which foundation could be made, but it certainly never would answer.

Mr. Lowey: I think I have had a little experience with foundation adulterated slightly with that. I don't want any more. I lost both in pocket and in conscience. I hived

swarms on it and I put it in the sections. I didn't understand what was the matter till I used up several pounds. I defy any man to adulterate wax with anything and have it workable, even if he is disposed to. I hope no bee-keeper is. I believe there is no substitute for wax that can be worked by the bees at the proper temperature.

Mr. Morrison: Some years ago I remember Mr. D. A. Jones telling me he had made foundation from wax produced somewhere in the neighborhood of Ottawa and after it was manufactured and put into the hives it melted down. He sent some of it to be examined. The report was "paraffine and bees wax mixed". When he tested it, after he found out what was wrong, it melted several degrees lower than bees wax would. If paraffine mixed with bees wax would do it it is certain paraffine alone would.

Mr. Sparling: This material is cerosene not paraffine.

The President: They are from the same product, petroleum and one is refined to a greater extent than the other.

Mr. Sparling: Professor Shutt said this was a dangerous product because it melted at practically the same temperature as wax.

Mr. Newton: Two years ago I received quite an amount of wax to make into foundation. Some of it was similar to what has been shown here this afternoon. I tried different ways to detect the adulteration and I found they both stood about the same amount of heat within three degrees and yet I couldn't make foundation out of it and I returned it.

The President: Wax is often adulterated with tallow but it is very easily detected by anyone with any experience. Paraffine is not detected

so easily. Even resin has been put in with bees wax with paraffine with the object of hardening it but it will melt no matter how much resin is put in.

Question: What size of hive would you advise for a colony?

Mr. Pettit: The size of hive I have used with a large measure of success is equal to the ten frame Langstroth hive. This is a splendid comb honey hive. It is a good hive for extracting honey but I think from experience for my locality the brood chamber is not quite large enough. I have placed my order for one hundred twelve frame Langstroth hives next year.

Mr. Dickenson: I think that is quite a change from what our Bee Journals and supply men have been recommending. The eight frame Langstroth has been the standard; and when men follow the recommendations of the bee supply men and those who have made a study of what is the best hive and have also read our bee Journals they are at a loss to no what to do when they have got their apiary up to one hundred and fifty colonies or more and two or three hundred boxes of surplus combs that they cannot get more than eight frames into. Mine hold nine; fortunately I am one better than eight. I really do feel for those people who have been recommended to use the eight framed hive when I hear such an able man as Mr. Pettit recommend the twelve frame.

Mr. Pettit: I am always anxious to have advise but I always want to work from my own experience and every year I find myself adopting new ideas and changing my plans. If my queens could not produce more brood than the eight frame hive would hold I would not have them.

As to this two story hive arrangement with the Langstroth depth, I

have tried the two story brood chamber to a limited extent and my experience has been that the lower brood chamber is largely deserted by the queen and bees. The queen goes up into the upper story and in the course of a few weeks when brood hatches out from below it is like a deserted hive.

Mr. Gemmel: That has never troubled me.

Mr. Holtermann: It has me.

Mr. Hall: Mr. Hall is an old fashioned fellow and he has the old fashioned hive and you must not laugh at it if you please. I commenced twenty-seven years ago with what was supposed to be the Quinby frame and instead of being the Quinby frame it is $1\frac{1}{2}$ inches longer and my little hive contains equal to eleven frames Langstroth and if I had any change at all I would want one or two more frames Langstroth added to it but I have got all I want to use for my life time.

Mr. Byer: I think Mr. Pettit is quite within his right in advising any size he wishes provided it is an eight frame Langstroth hive. Personally I want a ten or twelve frame hive only I want it two inches deeper than the Langstroth.

Mr. Holtermann: I believe there is rapid change in the direction of using a larger hive. I believe in five years from now we will find a very great increase in the percentage of large hives used.

Mr. Webster: I believe in the deep hives. I have been at the bee business for over forty years and like plenty of room, plenty of air at the bottom and plenty of coolness at the top. Don't contract the bottom it encourages the bees to swarm every time. Plenty of ventilation at the bottom, coolness at the top and a good brood chamber. Where I live

we do not get the bees if we do not have the size right.

Mr. Pettit: We do not get honey without bees and to have bees we must have the hive to contain the bees.

Mr. Dickenson: Do you run the three stories, twelve frames?

Mr. Pettit: One brood chamber and two supers for extracting.

Mr. Dickenson: It is very necessary every time to do that. That is thirty-six frames. A pretty large hive.

Mr. Pettit: That is the size of hive I have used this last season and have had my largest yields from it.

Mr. McEvoy: Mr. Pettit is on a twelve framed hive and there are a good many going that way just now. I have eight, nine and some twelves but I am going to put the twelves out of business. I can take more honey with the nine than with the twelve and I can get a better profit in the way I manage it and work it.

Mr. Pettit: That comes to the question of management again.

Mr. Holterman: What frame do you use?

Mr. McEvoy: It is not a question of the size of frame but the size of the brood chamber.

Mr. Dickenson: I think it is a very important question; it pertains to the whole industry. You want to get your clover honey away before your basswood comes on, which is a very important thing in this Province in shipping to the British market and we must do that in order to get a large amount of our honey out of our local market. If you have too large a hive I am afraid there will be a difficulty in getting quite as much ripe honey.

Mr. Pettit: That is a very important question but I don't want to keep my clover separate from basswood.

Mr. Dickenson: Until we do that in good seasons we will have just such a glut as we have at the present time. Had the eastern part of our country had as large a flow as we had in the central or western part you would have had a much larger glut than you have at present and until you take into consideration the importance of keeping your clover separate from your linden that will be the case.

Mr. McEvoy: That is one of the most important things to-day because mixed honey will not go well in the British market.

Mr. Holterman: I can't see just exactly where the point comes in there in connection with the large hives. I know it is exceedingly important in the British market that clover honey should be sent there and not basswood, but in a great deal of the management now with the smaller hives fruit bloom comes on and a great many of the bees in these hives swarm in the early part of the clover, when you have got your stock divided up. You have got these two stocks occupying eight framed hives and if you are going to take extracted honey you need a super on each as well. Eight times four is thirty-two frames they then occupy. I believe by having a large hive and keeping your bees contented and not getting the swarming impulse that the four frames with the two supers is more than made up by that line of management. If you are not getting honey enough to utilize two supers on the large hive you will not use them. Mr. Dickenson's point is a good one about not mixing your honey and yet I do not see that there is a very great difference there on account of keeping fine forces together and being able to prevent the swarming with the larger hive.

Mr. Dickenson: Mr. Holterman

said something about management. That is just where it strikes me as a question of importance. In management I want to take off my grade honey third story and I think Mr. Pettit will agree with me that it is important to have the clover honey separate from the basswood.

Mr. Pettit: Yes.

Mr. Dickenson: In order to get as many pounds of clover honey ripe as early as possible I don't want to have too large a hive; I am afraid my clover honey would be cut down; I would have too many of those combs not capped because I had put too many on for the upper story. I think I would have several thousand pounds less.

Mr. Pettit: We must keep clear the distinction between large brood chamber and large hive.

Mr. Dickenson, It is just as possible to have a large brood chamber with an eight or nine framed hive as with the twelve. As soon as the bees are ready to swarm you artificially swarm them.

The President: You are assuming that your extracting combs are the same depth as your brood combs?

Mr. Dickenson; Exactly.

Mr. Pettit: Mine are the same.

In case we want the large brood chamber, according to my view, if you want to keep the basswood separate from the clover just put on one extracting super; but it means a great deal more work.

Mr. Newton: I agree very much with Mr. Dickenson. I can hardly see what Mr. Pettit is trying to get at at the present moment because I do not think either Mr. Dickenson or myself would put on two extracting supers at once. We generally do not put the second on until the first is at least two-thirds full. As to the twelve frame hive retarding swarming, I do not think it makes a bit of

difference. I have worked sixteen-frame hives and I have seen just as many swarms out of those.

Mr. Holterman: Were they alongside of one another?

Mr. Newton: Yes.

Mr. Holterman: And one swarmed as soon as the other?

Mr. Newton: Yes. At the same time I think there were eight different styles of hives in the same yard. I think when the bees get the swarming impulse they will swarm out of one just as quickly as out of the other, and I would rather lift an eight-frame than a sixteen-frame.

Mr. Darling: I think this is a question largely depending on the size of the colony of bees, the size of the man who manages the bees and the size of the locality. I use a hive and have for years that is somewhat larger than the hive Mr. Hall talks about. I think his has twenty-eight hundred cubic inches; mine has thirty-two. I have seen mine swarm time after time when it wasn't over two-thirds full. They will swarm, other conditions being satisfactory. They will not swarm with the conditions being favorable for their storing honey.

Mr. Pettit: In my opinion where you delay putting on the second super until the first one is nearly full is just where you miss it in retarding swarming. The great point in my experience and in my reading has been to give plenty of room and give it before they have any notion of swarming.

Mr. Webster: You must go according to swarms; there are some medium and some strong. When you get up to a certain point give plenty of room at the top and plenty of air at the bottom. I have kept my bees weeks and weeks without swarming at all. Take the honey from them; do not let them get ahead of you.

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Mr. Pettit: In order to answer any such question we must describe our whole system of bee keeping because it is all involved and every man has his own system. No man should start the white honey flow without his colonies being good and strong, strong enough so that an extra super on top would not chill the brood.

Mr. Newton: Do you put on your three-comb honey supers when you start?

Mr. Pettit: That is different from extracting.

Mr. Newton: I don't think so in that connection.

Mr. Gemmel: As regards the size of hives, I think the locality and management has a great deal to do with what hive is used.

Mr. Lowey: I use a nine-framed Langstroth or a little longer hive. If beginning again I would not have less than ten frames. You can make it as small as you wish but with an eight-framed hive you cannot make it any larger. I put on three at once and in this very poor season with us they filled them. They were filled with bees too.

Mr. Hall: I believe bees are like almost anything else, you can educate them to do certain things. If you use a certain hive from year to year your colonies will not want a larger hive and they will not fill any more with brood; but I have had the large hive, such as I use, on the 24th of May with several of those combs full of brood and the others half full. I have also the Hedden hive but allow me to tell you I never got so many bees in them as in the large frames, eighteen and one-fourth inches inside by ten and one-fourth inches deep. In a normal condition when they swarm there is not three pounds of honey in that hive; it is full of brood and just at the very

corners a little piece of honey. I keep a record slate on every hive I have and I give credit to any extra stock. I start with No. A. A 1, means better than A; A 1 X, means breed from that queen; A 1 XX, means breed from her all you can. Those that do not fill up the hive we naturally call them B. You can never give them too much room in the brood nest before they swarm. When we contract is after swarming, if at all, but never before.

M. Armstrong: Take the whole season through has Mr. Hall two sizes of brood chambers?

Mr. Hall: Yes.

Mr. Armstrong: Which hive gives you the most in dollars and cents in a season?

Mr. Hall: The old standby I have had for twenty-seven years. I have had them give me as much as 228 pounds of section honey coming on the 28th of June. If you can do that from any small hive I would like to see it.

Mr. Armstrong: Was that the average for the hive?

Mr. Hall: No, I am sorry to say. I wish it was.

Mr. Webster: With me the Hedden hive is just what Mr. Hall said it was with him.

Mr. Pettit: I do not use the Langstroth hive. I speak of a ten-framed Langstroth because that is the capacity of my hive.

Mr. Morrison: I think it makes a great difference whether a man is a professional or is simply running it as a side issue.

Q. What is the best method of feeding bees after they are put in winter quarters and what is the best to feed them?

Mr. Pettit: I have had no experience in feeding bees in winter quarters.

Mr. Hall: It does not pay to feed

through the winter. If he has not fed them in September it is better to kill them and save the comb.

Mr. Brown: A gentleman down in the Inland Revenue Department asked me that very question yesterday. The plan he proposed of feeding was to have the hive covered with an oiled quilt and to cut a hole in the center of the quilt and place the syrup in a super on top of the hive so that the bees could come up through the hole in the quilt and take the food out. The hives were not piled up one on top of the other.

The President: I think if time is worth anything he could buy a new swarm of bees in the spring just as cheap as he could fuss with them.

Mr. Timbers: I started to feed a swarm liquid syrup until I set the colony in the cellar; after I put it in the cellar I fed candy on top of the whole winter and that colony came out in the spring just as well as any.

Q. What benefit has the Hill device under the cloth for wintering bees?

Mr. Pettit: That is an arrangement which holds up the cloth over the frames so that there is a space between the cloth and the frames, allowing the bees to pass over from one space to another, going from one side of the cluster to the other, crosswise of the comb. The advantage I see in this device is that it allows the bees to move more freely from one side to the other, as the cluster has to move for stores and for other purposes. If there is no way for them to move over the top they must either stay where they are and starve or go to the bottom of the comb and cross and then up. When it is cold at the bottom they will probably get chilled before they get around. I find the Hill device necessary in outside wintering.

Q. Will bees carry eggs up from

the brood chamber into the extracting super?

Mr. Pettit: I don't know. I know they will move them from one comb to another.

Mr. Gemmel: I agree with Mr. Pettit.

Mr. Switzer: I have had a number of hives this summer and have had perhaps half a dozen or maybe a dozen cells in the extracting combs in the super and how they got there was a puzzle to me. It was drone brood.

Q. If you wished to get a new set of extracting combs would you use starters or full sheets of foundation?

Mr. Pettit: At the present price of wax I rather think I would use starters, but for general purposes combs built on full sheets of foundation are preferable because they can be used any place and when filled with honey can be put in the brood chamber for winter feeding and it is much better to have all the worker comb if you can, but it is rather expensive.

Mr. Gemmel: You would have the foundation wired?

Mr. Pettit: Were you going to put it into the brood chamber, yes.

Mr. Gemmel: Upstairs?

Mr. Pettit: That depends on the management. With the Langstroth length I think it would probably be better. Our comb is shorter than Langstroth's and I find no necessity for wires.

Mr. Hall: I believe there is money saved by using full sheets of foundation with price of wax as it is today.

Use full sheets every time.

Mr. Gemmel: And wire.

Mr. Hall: Oh, yes, because you can have those for extracting honey the first season without hurting your comb and forever after.

Mr. Holterman: I would fully

dorse what Mr. Hall says about that. I think if wax were ten cents a pound more I would use it then.

Mr. Pettit: Don't understand me to say foundation is too expensive to pay. I am not fully satisfied in my own mind because most of my extracting combs are drone combs but I am inclined to think it would be better to work into the worker comb as much as possible.

Mr. Sibbald: It is pretty hard to stand up after a lot here have spoken and say something different. I believe there is a natural secretion of wax by the bee in the summer time and if they have foundation supplied they haven't any use for it and you lose that much. Also I believe it retards swarming a good deal to have them build their own combs in the super. I don't use full sheets at all.

Mr. Gemmel: I would let them build the combs down stairs in the brood chamber after they were hived.

Mr. Webster: I would give almost anything to have full sheets and let them use the wax when they are drawing it out; and then there is this other great nuisance, a lot of drone combs.

Mr. Hall: Allow me to tell you, I go to work with a hive of bees with three supers on and if they haven't any drone combs below I go into the center of the nest and find a large piece with practically no honey in it. They are preparing for the queen to go up and lay or raise some boys. If they have foundation given to them they haven't that privilege.

Mr. Brown: I believe every time in having full sheets of foundation, if for nothing else than having food for the bees if a shortage in stores took place in the fall, which very often does occur. When I am extracting I put aside a few combs of the very best sealed honey I have

and then I have those to give to my bees in the fall. If half of those combs were drone combs I would have a brood nest full of drones the next season.

Q. Do you think bee keepers generally in putting bees into the cellar for winter raise the hive from the bottom board and put small blocks of wood under?

Mr. Pettit: I don't know what bee keepers generally do, but I would most certainly do as this mentions, raise the hive from the bottom board and put in small blocks or in some way give a much larger ventilation at the bottom of the hive than the ordinary ventilation given. I find it more convenient and I think it better to put the blocks at the back.

Mr. Chisholm: I turn my bottom board over and give them a larger opening. I find no difficulty in giving my bees plenty of air in that way.

Mr. Darling: I find my bees winter a good deal better by putting an inch block under each of the corners of the hive and closing the top down tight.

Q. Would it be advisable to move bees early in March and place them on their summer stands?

Mr. Pettit: It all depends on your locality. If where they are to be for the summer has plenty of spring flow that is the place to get them as soon as possible. In my experience the advantages in running out apiaries and having bees spread out is in the spring flow as much as anything else. In the very height of the clover and basswood flow the locality can stand a great many more than it can in the spring.

Q. If one half of sugar syrup is added to honey can it be detected, and if so, how?

Mr. Pettit: I am quite positive it can

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EDITORIAL NOTES.

A very interesting bulletin has recently been issued by the Inland Revenue Dept., Ottawa, on the collection of honey made by that department last season.

Ninety-nine samples were collected in the open market, viz: District of Halifax 15, New Brunswick 10, Quebec 10, Montreal 10, Kingston 10, Toronto 10, Windsor 10, Winnipeg 9, Manitoba 5, British Columbia 10. These were subjected to examination in the laboratory under the supervision of Mr. Thos. McFarland, Chief Analyst and classified as follows:—Genuine 81, Doubtful 5, Adulterated 2, Adulterated with glucose 6, Adulterated with cane sugar 5.

The bulletin explains that the adulteration of honey by means of added water was also taken into account, that the quantity in genuine honey seldom exceeds 20 per cent and the maximum limit is not placed beyond 25 per cent by those chemists who have studied the subject. The percentage of water in this test was obtained by evaporating 10 ccm of a 5 p.c. solution of the sample in Crysolite fibre for 24 hours at a temper-

ature varying from 60° to 70° Centigrade. Eight of the samples were found to contain moisture to the extent of 25 p.c and over, the highest percentage being 32. 6.

The lowest percentage of moisture in any of the samples collected was 14. 0.

Defining the constituents of honey and its possible adulterations Mr. McFarland says—"Nectar of flowers contains from 60 to 90 per cent of water, and both fruit sugar and cane sugar have been found in it. It experiences in the stomach of the bee, certain changes which consists principally in an inversion of the cane-sugar. As is the case with many articles of food in Canada 'the limit of variability' (Sect. 19 Adulteration Act) permissible in honey has not yet been legally determined but it seems to be generally accepted, not only by bee-keepers but by the general public that the feeding of bees in summer time with cane sugar or sugar solution, in order to increase the production, should be regarded as adulteration. This principle is expressly acted on by the Association of Swiss Agricultural Chemists, who have also adopted 16 per cent cane sugar as the maximum limit which genuine honey ought to contain. Other chemists place the limit lower and Konig states that natural honey may contain up to 8 or 10 per cent cane sugar. Experiments are on record which demonstrate that bees fed exclusively on cane sugar syrup produce a honey containing as much as 30 per cent cane sugar. Besides this adulteration effected with the cooperation of the bees, honey may also be falsified by the direct addition of cane sugar or glucose (starch sugar) syrup, the sophisticated honey in the latter case being sometimes

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sold as "Swiss Honey" neither of these varieties is difficult of detection but it is otherwise in cases of an admixture of invert sugar, a substance produced by the action of dilute acids on cane sugar. This sort of adulteration has long been known especially on the continent of Europe, where the product is sold under such names as "Turkish Honey", "Table Honey", and "Prepared Honey." Not unfrequently it is more honestly termed "Sugar Honey" or "Artificial Honey" (Kunst honig) and some of it is said to have come from America, in comb made from paraffine and labelled as "Prime American Honey." Its manufacture has increased greatly during the last ten years. It is prepared with such skill as to baffle the efforts of German chemists to distinguish it from the genuine article, although both the German and Belgian Governments have sought by every means to protect the producers of pure honey. A recent memoir, emanating from the Imperial Health Bureau, acknowledges that the trade in this artificial honey is very considerable and that the addition of invert-sugar to genuine honey cannot be detected.

Whether it is likely that the last mentioned variety of spurious honey is sold in Canada, I am unable to state. I doubt whether invert-sugar is manufactured in Canada and certainly it is not imported under that name. There is however a considerable importation of honey itself which is given in the Trade and Navigation Table as follows:—

Honey in Comb or and Imitations Thereof	Entered for Home Consumption for Fiscal Year Ended June 30th	
	1902 Lbs	1903 Lbs
From Great Britain.....	31,856	6,209
British West Indies.....	18,754	
Austro-Hungary.....	6,571	51,789
China.....	320	
Germany.....	3,559	
United states.....	85,451	62,606
Total.....	146,511	120,604

It would seem quite possible that some of this imported honey, upon which a duty of three cents per lb. has to be paid may be of a spurious character."

These we are sure will be somewhat surprising facts and figures for Canadian Bee-Keepers who are grumbling about the price of honey and the "glutted home market." Looking up the Trade and Navigation report of the Dominion for the four months ending October 30th, 1903. We find there was imported,

From Great Britain.....	1,478 lbs
United States.....	19,292
British West Indies.....	10,150
Other Countries.....	288
Total.....	31,208 lbs

The quantity is not great but it shows very plainly that we are not occupying all of our home market. The import from Great Britain was valued at \$59.00 or 4c per pound, that from the United States \$2,202, nearly 11 1/2c, that from British West Indies at \$353, slightly over 3c per pound.

Duty 3c per pound, less one third preferential on British and Colonial imports.

We do not doubt the ability of the West Indies to supply a cheap and pure honey that may compete with our lower grades for manufacturing purposes but what is this which Great Britain is sending us? It may of course be a foreign product transhipped, we do not know. When laid down at our ports with freight and duty added the price cannot be much lower than our best grades at present.

Thoughts andComments ON CURRENT TOPICS

By a York County Bee Keeper.

STINGLESS BEES

That veteran rover Mr. W. K. Morrison, reports in Dec. 15th issue, "Gleanings," that he has at last found the long-looked-for stingless bees, that are capable of ranking with *Apis mellifica* as a commercial asset.

Mr. Morrison states that he hopes to be able to ship some colonies to New York by May 1st, 1904.

Editor Root says they will certainly get some shipments if possible (from Venezuela,) and report results later.

While numbers will hail with delight the possibility of having stingless bees, yet I very much doubt if the specialist bee-keeper will view the proposition with much favor. Mr. Morrison says that "these bees bear domestication even better than our bees and IGNORANT VENEZUELAN KEEP THEM WITHOUT DIFFICULTY."

That's the point exactly. Have an idea that if these stingless bees could be propagated and acclimatized to the North American Continent, so that they would "rank as a commercial asset" with *apis mellifica*, that their advent would seriously paralyze the beekeeping industry.

I don't wish to pose as a pessimist, but it seems to me that everybody's yard would have colonies of stingless bees, for it is a wellknown fact that hundreds are kept from keeping bees, by fear of stings. However it is extremely doubtful if they will be able to stand the climate of the northern parts of the continent (perhaps the

wish is father to the thought.)

KEEPING MORE BEES

So friend Kirby (in Jan. C. B. J.) thinks there are already too many bees in Ontario for profit. No doubt many other Ontario apiarists think likewise. Really it is a trifle exasperating to have a quantity of No. 1 clover honey on hand without a chance of selling it profitably, and then pick up your bee journal month after month and be confronted with the injunction "Keep More Bees." W. Z. H. has done this self same thing again in January "Review." Friend Hutchinson please take notice for the time being, that future copies of "Review" coming into Ontario have these objectionable words erased.

MELTING UP BROOD COMBS

Funny that none of us took notice of that "rapid" bit of work done by Mr. France in Wisconsin a year or so ago. Mr. Editor if you will guarantee to make a press that will handle 2000 combs in a day I will take one too, 2000 combs in a 10 hour day would mean about three a minute, certainly pretty quick work.

Mr. France is one of our most reliable and conservative of bee-keepers and I am inclined to think there has been some mistake in the report. If not; wish Mr. France would explain the modus operandi so that more of us could go and do likewise.

SHALL WE MAKE OUR OWN HIVES

Quite a discussion on this matter has been going on recently between the editors of "Review," and "Gleanings."

Editor Hutchinson takes the stand that owing to recent sharp advances in hives, that beekeepers can save a lot by making their hives; while Editor Root takes the opposite view.

Mr. Hutchinson instances the fact that he has by actual experiment recently made hives that cost him

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told just 64 cents each, whilst the same hive was quoted in Root's catalogue at \$1.60 or \$1.25 each in lots of 100. He does not pretend to say however that manufacturers could sell much cheaper than they do, owing to many items of expense such as interest on capital etc., termed usually as "overhead expenses." Of course the beekeeper has none of these to take into account. Another factor is that labor is not very important to majority of bee-keepers in winter time, the most of them having very little to do at this time of the year. While some may undoubtedly make their own hives profitably, there are others like myself who are unfortunately bunglers with tools. In this case it is probably better to have hives made by competent workmen and avoid bother and vexation incidental to having ill-fitting fixtures in the apiary.

EXTENSIVE BEEKEEPING

In glancing over report of the National Association, for 1903, one is enabled to see how our cousins across the line do things. California leads in the matter of extensive producers, Arizona being a good second. There are thirty bee-keepers listed who have from 500 to 1580 colonies each, a total of nearly 25,000 colonies, i. e., an average of over eight hundred each.

Aside from these there are just as many extensive apiarists who have not been reported.

Some examples as to individual yields are as follows: Wm. Rohrig, Tempe, Arizona 72,000, extracted; T. F. Arundell, Fillmore, Cal., 64,000 extracted; L. E. Mercer, Ventura, Cal., 100,000 extracted; M. H. Mendelson, Ventura, Cal., 90,000 extracted and 22,000 comb; W. T. Richardson, Moore Park, Cal., 84,000 extracted; W. D. Moffat, Pomona,

Cal., 80,000 extracted; H. H. Hyde, Floresville, Tex., 10,000 extracted and 75,000 comb; N. E. France, Platteville, Wis., 54,000 extracted; W. L. Coggsall, West Groton, N.Y., 56,000 extracted and 1,000 comb; with scores of others running from twenty-five to forty-thousand each.

THE HONEY MARKET

A glance over the market reports of the different journals seems to indicate that the honey market is pretty much the same all over the continent viz. very dull.

Bearing on this subject, Editor York in A. B. J. has the following to say: Certain very good people are urging bee-keepers to keep more bees "That is all right for some, but! we believe what the majority of bee-keepers need first is to develop a better and more remunerative market or demand for the honey their present number of colonies produce." Bro. W. Z. H. kindly take note of foregoing and consider seriously if it is not about correct.

A SEVERE WINTER

More than likely those chaps who winter their bees in the cellar are laughing "up their sleeve" at us fellows who have our bees out doors. From Nov. 27th to date Jan. 22 there has only been one day that the mercury has went above the freezing point. During this time we have had many days of zero weather. Three different times the thermometer has been from 20 to 25 below zero. While the balance of winter will have much to do with wintering results, so far the bees apparently seem to be standing the extreme weather quite well.

Why is it that we often see apiarists further south complaining of bad results if their bees are shut in for five or six weeks, while here is Ontario

ours are often shut in from sixteen to twenty weeks and generally come out in good condition. In looking over some memoranda find that in winter of '01 and '02 bees at home yard were shut in from October 28th to February 25th, all were alive and in good condition on April 1st. The year previous they were without a fly from November 10th to March 25th with only a slight loss, the most of them being in good condition.



 * **SHALL WE ADOPT IMPROVED METHODS OF HONEY PRODUCTION** *
 * By Irving Kenyon, Camillus, N.Y. *
 * Notes from an address given at New York State Convention, Syracuse, N. Y. January 14th. *

Whether we use improved methods in producing our honey depends upon the returns we will get for time and money spent with the bees.

One improvement a great many if not the majority of bee-keepers could make is in securing their supplies in the Fall: November 1st is late enough to order them, and then the bee-keeper will not have them in his shop before December 1st if they have to go far by rail. The bee-keeper can then busy himself during stormy days in winter in putting sections together and filling them with foundation. Also filling and cleaning supers and any and every other work that will save him time next summer during the busy season. This method will allow the bee-keeper to keep more bees if he can find pasturage for them, and he can make a business of bees which I think would be an improvement over having a few bees to be neglected

when the bee-keeper is busy with other work which is often the case.

Those that finally send in their order about May 1st may find there are fifty or a hundred orders ahead of theirs and when after delays their goods are delivered at the railroad stations the bee-keeper is never really sure of them coming through without vexatious delays. I have known of cases where the bee-keeper after making numerous useless trips to the freight house, and worrying, and wondering if their goods were ever coming and when they did come they were in a stew till they got them ready and on the hives. By this time the season was from two-thirds to three quarters over and the result was they had a lot of unfinished sections, had lost part of the honey crop, and just what they sought to avoid, they had their money tied up in supplies to carry over.

We might call it an improved method to have our dish right side up when nature is ready to fill it with honey.

My preference is for the four piece bee-way section, the four piece sections glued are more likely to stay true in shape and not become diamond shaped, the latter condition often breaks the foundation loose; one piece sections are apt to break in folding. The bee-way section can be glassed, protecting them from the air and dust of the stores.

The supers should be as cheap as possible and still retain all the good points of a good super. It should have as few loose parts as possible, it should be made so the honey can be easily gotten out without danger of being injured. It should be so arranged that the bees have no access to the outside of the sections and so the sections will come as close to the brood frames as possible.

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examination of frames as quickly as possible, the frames not stuck together, and so arranged that they can be taken out as well after the bees have been in them five years as when the bees are first hived in them. If we visit an apiary of one hundred colonies and it takes a minute and-a-half longer to get through each hive then it would if the hives were constructed differently, it would take 150 minutes or 2½ hours longer each time than it should.

A warm and uniform temperature in the super is desirable. The prevention of swarming is desirable remove the queen for a time.

Retailers of honey should be told not keep honey in a cold and damp temperature but a dry and warm.

At the close of the address several stated that they did not think that comb honey could be produced with such success if the queen were removed from the brood chamber the brood and surplus combs would become pollen clogged.

ket what they want sounds well to the unthinking individual, but to carry this policy out means to stop all so-called world progress. Better methods are desirable and any way of marketing which can be shown to be to the advantage of the trade and the consumer should be brought forward and the public educated to see the advantage.

At present honey generally is produced in about as unsystematic ways and with about as poor results as butter was twenty or more years ago: here a few pounds and there a few pounds, without uniformity in production or handling and much of it injured; for in its various stages of production and handling its quality can be affected as much as butter. Too much of it leaves the hive when it is really not yet honey, but when it is still in its stages between nectar and honey. Again that grand quality in desirable table honey, aroma, which helps to hold and develop, our market, is practically lost sight of by our bee-keepers; their method of handling and the lack of speaking of it proves this.

I have four-hundred colonies of bees and out of one county alone took some thirty-thousand pounds of honey yet with all our rush, we extract, and, before the honey has lost the warmth of the hive, we strain out any particles of wax and the like and then immediately store the honey in vessels which can be tightly sealed as soon as filled. If anyone asks what about the froth? Let me answer froth on well ripened honey, is only to honey, what the beaten white is to the white of an egg. They are the same and produced in principle in the same way. Next honey contains formic acid, this is a valuable medicine and retards and even destroys the growth of unwholesome germs. In storing

Marketing Honey

An Address Given by R. F. Holtermann, Brantford, at the New York State Bee-Keeper's Convention, Syracuse, N. Y. Jan. 14 and 15 1904.

In marketing a commodity a good article for sale is more than half the battle. An article spoiled in production can with difficulty only get market and which it can never hold. Better know how to get a commodity in proper shape for markets than try to know what to do to bring it more the attention of the buyer, which however are of great importance. Honey must be in the right shape when distributed in the right way. give to the people in each mar-

this should be considered. Honey can never remain in contact with tin without this acid acting on the metal. The percentage of formic acid varies. I have had samples of honey analyzed finding 100 per cent more in some samples than in others.

Inferior goods not only hinder the sale of similar goods but they injure the demand for a good article; one becomes an opponent to the other, one neutralizes the effect of the other and of this phase of the market we can say, "A house divided against itself cannot stand". As far as I know all or almost all of our northern honey has the peculiar characteristic of becoming solid, chrysalizing or as it is commonly called granulating. The more delicately flavored honey such as clover even in expert hands rarely goes through the process of liquifying without perceptible deterioration in its delicate flavor and aroma. This may be disputed by those of less sensitive palate yet remains true and will stand the test. None of us however are likely to deny that when the average retailer with little or no experience in this direction undertakes to liquify honey evil results are almost a foregone conclusion. It may be fairly good but too often the "bloom" has departed. That the change which honey undergoes by overheating is important the polariscope proves, long heated honey not granulating tends also to show that the nature is changed, its color, flavor and aroma as we know may also be lost. Perfectly grained honey is also a safe guard against adulteration. Under the circumstances a system of marketing extracted honey which would overcome the necessity of passing honey through the dangerous stage of liquifying would be an advantage.

In the production of honey we should guard against the mixing in

extracting of inferior and better grades of honey. In almost every case it results in a reduced total return of dollars. Second class honey should be sold as such and kept separate,

To intelligently produce and sell honey we must understand its nature. Honey is more than a sweet. Sole leather and beef steak with our present knowledge of chemistry are alike yet it would be a difficult matter to convince even a hungry man of this. Within the last two years Prof. Shutt of the Dominion Experimental Farm, Ottawa, Canada has discovered that the past methods of analyzing honey have been faulty we may reasonably believe that the stage of perfection has not yet been reached. Honey has in addition to water, saccharine matter and formic acid a volatile oil distilled by the blossom which secretes the nectar. The power of these essential oils can be best understood when we remember that in Eastern countries certain plants yield a honey which if consumed produces death. It is this oil volatile in its nature which partially gives honey its aroma. We detect this agency in the blossom, in the field, when we lean over the hive in manipulation, again as we extract and last but not least we know the delicious and often delicate flavor possessed by honey fresh from the hive. Is it desirable to retain as much as we can of this for table use. Assuredly. Why should we follow blindly the lead of those who have gone before and expose our extracted honey to the atmosphere thus losing what in my estimation is so desirable to deliver to the consumer?

There is still much to learn about the ripening process nectar undergoes in the hive. I see questions which solution require the joint action of careful, expert and original thought

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of the bee-keeper and the chemist having the same qualifications, and the solution of which will be of practical and lasting benefit to the bee-keeper and consumer of honey.

The bee-keeper gets only a small percentage of the nectar the bees gather. The brood is fed, the heat and energy of the bee has through food to be provided for, the brood has to be warmed and the process of ripening through raised temperature and the fanning of atmosphere in and out, all has to be done at the expense of food consumed. We masticate food and change starch to sugar by the addition of certain secretions, in this the food undergoes the first stages towards digestion. The bees by nature are compelled to gather nectar a little at a time, they again transmit it to fresh bees at the threshold of the comb, again as it is moved about from cell to cell in the process of ripening, in all these as in the slow process of mastication the honey is being inverted; thus in honey we have a partially digested or pre-digested food ready for assimilation, no other sweet on earth can boast of this in its favor. The above processes properly carried out are done at great loss in quantity from what is first gathered but it is the machinery power, the coal if you will to produce the energy required to gather, change and seal this food in its stages from nectar to our valuable food—honey. At no stage should this process of ripening, etc. in the hive be stopped by the bee-keeper, to do so must work injury to our market.

Again if we do not know wherein our goods are superior to others which at first glance appear to be the same and are, NOT CHEAPER, but a less price how can we expect to sell them to advantage and do them justice? There is simply no answer to the question. We must understand their points of merit and have

faith in them and possessed with that conviction we can hope to convince OTHERS.

Think of a butcher becoming a dry goods drummer, the hardware man acting in that capacity for a horse dealer, the dairyman pointing out the merits of fruit or the poultry man sent as an expert to find a market for cheese and butter and you have a spectacle of what every Dick Tom and Harry is expected to do for honey. Even our Governments are guilty of such action, it is often done unthinkingly but the consequences are disastrous to our honey market. Bee-keepers should combine in every large city such as the one we are meeting in, Syracuse, and have a wholesale and retail establishment for sale of honey, the retail establishment could have for sale articles of food etc. in which honey has been used as an ingredient, here the highest in the land could be drawn by advertising, exhibitions of bees, their handling at certain hours, observatory hives and displays setting forth the natural history of the bee and so on. Such a store at a comparatively small outlay of cost could be made the talk of the city and reach the most intelligent and desirable class of citizens and honey be made to reach the tables of thousands upon thousands where the article is today a stranger. In other places arrangements could be made to make the sale of honey a strong (not neglected) department in a business already established or the business in certain places might only be run for a portion of the year but always be in charge of a bright, alert expert having confidence in and knowing the goods. These centres could also be made centres of instruction to employees in establishments where the sale of honey would be desirable.

Give a proper margin to the one who sells your honey. Bee-keepers

as a body are much to blame for having their wholesale and retail price too close together. A retailer should have not less than a margin of twenty per cent.

We as bee-keepers often talk as if the price was our main difficulty in selling and as if the price altogether stood in the way of a larger market. I venture, strongly to assert this is not where more than half our trouble lies. We could raise the price if we only would first improve the general quality, make stronger efforts to put the merits of honey before the public, distribute it more evenly over the country and give the dealer a better margin. Does anyone doubt it, let him or her look at proprietary goods, 'trade marked' goods which stare us in the face on every table today, let them consider how much, of their place on the market is due to real merit and how much to advertising draw their own conclusion and doubt no longer.

Until millions and millions of dollars worth of sugar at present consumed by our people have been replaced by millions of pounds of honey we have no right to say there is no market for honey.

Give honey back the place it once had as a sweetner and our people will have back a greater measure of health. The public must of course be provided with what it wants but our keynote should be to educate them to use what they need and what is best for them. It is in our interest and the interest of the people to advocate for the table either comb honey or honey which has been sealed until granulated. For fancy trade we might put granulated honey into jars like cream cheese and immediately run over the top a thin film of melted parafine, the object being to exclude the air and retain the aroma. When granulated solid as in large

barrels the block can be cut like cheese with a wire and retailed. I know of no better way of marketing and you can in this way give a customer the best value for his money.

Unfortunately for us as bee-keepers Governments do not do us justice, we can join hands with you over the line, a line which we as Canadians hope will not be effaced as long as man's government lasts, and we can feel with you that we have a grievance in common. Governments levy taxes upon the wealth obtained by bee-keeping but unlike in other branches of agriculture they rarely help us to solve our difficulties in production and marketing. The past history is that in nearly every case for political or other expediences sake incompetent parties have been appointed in the rare instances where anything has been done. The government betrays its trust in this and we as bee-keepers are worse off than before. Results in experiments have been given out where the expert bee-keeper can see under the veil and gnash his teeth that his profession should be thus belittled and the novice swallowing in his vergency all that comes from such a source like the blind leading the blind, brought into the ditch. If we want to make the best showing in marketing we must have government aid and have the aid other departments of agriculture are getting, aid which a branch of agriculture having power to produce wealth merits, and not have our governments by their lack of action, or by their action blaze abroad that bee-keeping is not worthy of, or a rewarder of the highest agricultural intelligence and application. But this brings me to my closing remarks.

Bee-keeping is a business, it requires experience, application and intelligent care to succeed in it, the

virgin queen is given to a parent colony immediately after it has cast a swarm, said queen from the cell or otherwise, will go to tearing down the queen-cells left in the hive when the swarm issued therefrom.

Is this right?"

"Yes. That is as I intended."

"I think this a mistake; for, in nineteen cases out of twenty, if the swarm is hived on a new stand the cells will not be torn down, and not once in three times where the old colony is removed to a new stand, the swarm being hived where the old colony stood—at least this has been my experience in a practice of nearly a third of a century."

"I thought it would work, and neighbor Jones told me, when I put this question to him, that he was sure it would. Why will it not?"

"Because the bees do not want those cells torn down, for in them is cradled the choicest thing they have—something that they value more than they did their own dear mother, and that which sent her out from her own home to seek a new one in some strange land; and if they consider those cells better than their own mother, are they now going to sacrifice them for any stranger; one on which they had bestowed no care or wish?"

"I had not thought about the matter in that light."

"No, they will not do it only as they are forced to do so being thrown out of a normal condition by having all of the field-bees drawn off by removal of the hive from its old stand, or by the apiarist cutting off all of these queen-cells. And ever in this latter case they will often kill the virgin queen given, or destroy the cell, preferring to rear a queen from their own sisters in the egg or larval form, which still remain in the hive, rather than to accept a stranger."

"Then why should neighbor Jones tell me that the virgin queen would tear down all the queen-cells in the hive?"

"Probably because he had noticed sometime that the queen-cells were torn down where a parent colony had given up sending out an after-swarm as they very often do where the scarcity of honey follows the casting of the prime swarm. Then if an experience over a score of years of careful watching is of any value, I can only think that your neighbor Jones is mistaken in thinking that it is the queen that does the tearing down of the cells, for it is only when the queen has access to the queen-cells without other bees, or in very small nuclei, that she does the work of tearing open the cells, the workers being the main agents along this tearing line. All know who are at all familiar with the inside work of a colony of bees, that, when the bees wish to protect the queen from the most enraged queen; and when they change their mind they are as ready to secure the destruction of the inmates of the cell as is the enraged queen; so all hands turn to the inmates of the cells are dragged forth and cast out of the hive, even a single mourner. Whenever an introduced queen is accepted by the bees, of course the cells are all torn down, and all after-swarms given up; but the rule is that it does not work that way, but the queen is destroyed; and unless we conclude not to swarm when the queen-cells left when a parent swarm issued emerges from her cell after swarming is the result, just the same as it would have been had we not given the queen or cell, and find we have had our labor for nothing."

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secure the desired end?"

"Outside of stopping after-swarming, there is generally no desired end to be accomplished."

"How is that? Is not the succeeding in having a laying queen in a hive as soon after swarming as may be a desired end?"

"Well, that depends altogether upon the locality and result in the end."

"What do you mean?"

"Just this: With a continuous honey-flow from the time of swarming to the end of the season there might be some gain, provided the advantages were not lost by swarming again."

With such a continued honey-flow the colony having such queen given up it would be far more likely to conclude to swarm again than would the one where the bees had their own queen, and they did not get a laying queen till near the time the brood had all matured which was in the fall when the old queen left. Ask yourself what conditions bring about prime swarming, and you will understand this."

"But I do not know that I could answer such a question fully, did I ask it."

"Yes, you could. If you think a little you know that the conditions bringing about prime swarming are, plenty of brood in all stages, plenty of bees of all ages, and honey coming from the fields. With any of these lacking, prime swarms rarely come."

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"Because, where the honey-flow keeps right up and the bees take their own course, or all after-swarming is prevented by the apiarist cutting all queen cells after the first laying queen has emerged from her cell, the colony is without a laying queen from 18 to 20 days, as a rule,

(Continued next month.)

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