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CANADIAN BEE JOURNAL.

PUBLISHED MONTHLY.

NEW SERIES VOL. VI, No. 1. BRANTFORD, ONT., JULY, 1897. WHOLE NO. 389

Last fall we introduced quite a number of pure Carniolan queens with the object of giving them a thorough test in the apiary. A very high opinion had been formed of these bees, previously, as far as gentleness is concerned. They are also good comb builders, and keep the hive comparatively free from propolis. We were not quite so sure about preventing excessive swarming. During the last few years we have learned to prevent this by means of shade ventilation and giving room at the proper time, and perhaps, the most recent design of Mr. S. T. Pettit, the enlargement of the entrance by means of strips ⅜ of an inch at one end and tapered to a point at the other, the length of the side of the hive and there inserted, thick end at the entrance, between the bottom board and the side of the hive, thus enlarging the entrance. So far, we are all well pleased with the Carniolan and expect to have splendid results, if the season permits. Swarming has not been greater than with our other bees, they have built up well, and we are preparing to increase the number of Carniolan hives. Anyone wishing to try them, and at present we certainly feel like recommending them, can be supplied by the Goold, Shapley & Muir Co. Limited. Tested Carniolan $2; Untested $1.25. In lots of three, per cent. off the above prices.

Carniolan Bees.

* * *

Spring bees have been doing fairly well, probably fifteen years since we have had such an abundance of clover blossom. Basswood promises well in this vicinity, there is an abundance of bloom. Owing to the unfavorable spring bees have not built up, and are not as strong as last year.

Honey Crop.

* * *

Bulletin No. 47, Department of Inland Revenue, Ottawa is out. Out of 180 samples only 12 were adulterated, or 6⅔ per cent., a very favorable showing, especially when we consider that some care was taken to send in the names of every suspected party. The Canadian public may well eat honey and feel confident of the purity of the article. There is just one objection we have to find. Where samples are taken from dealers they give the name of the party from whom they purchased. This should be corroborated by communicating with the producer, one party gave the name of Goold, Shapley & Muir, Co., Limited, who did not buy directly from that company at all. Other bee keepers may have been served in the same way.

Honey Analysis.

RICHMEW, June 7 1897.

Messrs. Goold, Shapley & Muir,

DEAR SIRS,—I beg to acknowledge the receipt of shipment of comb foundation. It is the best I ever handled; it is truly perfection. THOS. RAMAGE.

Remember the United States Bee-Keepers' Union Convention in Buffalo, N. Y., August 24th, 25th, 26th, next. Full particulars in the August number of the C. B. J.

Restricting Increase With Natural Swarms.

—G. M. DOOLITTLE.

Napanee, March 14.

Please find enclosed 25c for three months subscription to Canadian Bee Journal, also kindly answer the following question: I have five hives and wish to get as much honey as possible with as little expense for hives as possible. Could I attain this object by placing the first swarm in a new hive and the second where the first came out and so forth throughout the whole season.

Yours truly,
G. H. EVANS.

[In reply to the above, Mr. Doolittle writes the following.]

The following has been sent to me, requesting that I would give my views in the matter, by way of an article in the Canadian Bee Journal: "I have five colonies of bees and wish to secure as much honey as I can with as little expense for hives as possible. Could I obtain this object by hiving the first swarm which issued from any hive, in a new hive, and then hiving the second swarm which came out, where the first one came from, the third where the second came from, and so on, thus increasing only one colony during the season? The restriction of increase as suggested by the correspondent's question is no new thing, for the same idea was advanced to the public years ago by Prof. A. J. Cook, through the different papers of that time and was said to be just the thing for every bee-keeper to use who desired plenty of surplus honey with little or no increase. At the time this plan was made public I had not attained the number of colonies I desired to keep, so was working for increase, rather then no increase; but I made a note of the plan in my "reference book," (the convenience of which book I have frequently spoken of in my articles), and when the time came that I was placed in the position of the questioner, I went to work to test the plan. We were given to understand that, when we came to a point in our bee-keeping work where we wish no more increase, all we had to do was to hive the first swarm of the season in a new hive; the next swarm where the first came from, and so on to the end of the season, with no more work than would be required in hiving the swarms which came, in empty hives; while by so doing we could keep down all increase, do away with all after swarming, and secure a much larger yield of honey from the apiary then was possible where the old plans of increase by natural swarming was allowed. The whole seemed so nice that I was infatuated with it, and as soon as I had secured the number of colonies I wished to keep I went to testing the matter, and will here give the results of that test. The first swarm of the season that year, issued on the 19th day of June, according to the diary kept, and the second on June the 21st. As soon as the swarm was fully clustered it was taken down, carried to the hive which cast the former swarm, put down at the entrance, supposing that the bees would begin to run in with fanning wings, as they always do when they are placed at the entrance of an empty hive. But as the bees did not run in as I expected them to do, I took the smoker and smoked them a little, at the same time stirring those at the enterance with a little stick. At this they began to run in the same as they would have done in an empty hive, when I left them to do a little pressing work, which I had to do. This work kept me away from the bees longer then I intended, and you can imagine my feelings when I returned, to find that whole swarm lying dead in front of the hive and being dragged out by the bees which had possession of the hive when I placed the swarm in front of it. Knowing that crying over "spilt milk" would avail nothing, and upon a little thought having concluded to blame myself for not taking some percaution in this matter, as I had known from former experience that I could not run a swarm of bees in with any colony where I desired without their being killed, I did not turn from the plan in disgust as I at first thought of doing, but made up my mind that by thoroughly smoking the colony that was to receive the swarm, before they were run in, I would be master of the situation. This thing I did with the next operation of the kind; but while the bees from the swarm started immediately into the hive, from hearing the buzzing within which the smoke caused, yet quite a few was killed later on. Being determined not to be beaten by this killing of bees trouble, the next hive was treated in this way: As soon as the swarm had mostly clustered I went to the hive that had last before cast a swarm, opened it, took out the frames and shook the bees from the first frame near the entrance, from the next frame a little farther away, the next still farther, and so on, till I had a string of bees for six or eight feet from the entrance of the hive out, all

travelling toward the hive with fanning wings. Had I shaken the first frame eight feet away from the hives, and all of the rest likewise, the bees would have flown to the hive and I failed to accomplish my object. As soon as the last frame was shaken and placed in the hive, and the hive closed, I got the swarm and shook it down, scattering it as evenly as possible with the bees already running into the hive, and I had no more trouble with bees being killed. And right here I wish to say, that two or more colonies of bees can be united in this way at any time with no danger of bees being killed. Having learned this part in the matter, I now went on with the plan, and as that season proved to be a rather poor one I had no trouble with any further swarming, and at the end found that the colonies treated gave me at least one-third more honey than did those treated in the old way. This, of course elated me, and I concluded that the the extra work of shaking the bees off the frames, was more then made up in the extra yield of honey. So I prepared to serve the whole apiary that way the next season. But this season proved to be an extra good one, or one in which the honey yield was long drawn out, and for this reason eight out of ten of the colonies concluded to swarm again, about two weeks after they had been treated as is suggested by our correspondent, when I began the process over again. A few of the colonies did not wait so long, but nursed the queen cells left when the former swarm issued, instead of destroying them, as they usually did, and with these I had swarming within a week, and in some cases sooner; which taking the whole together, gave me more labor, with very little if any better results, then by the old swarming plan, and the doubling up of the extra colonies which I did not wish, in the spring; using the weaker colonies when thus doubling. Since then I have practiced the plan more or less in my apiary, and have this to say in that matter: In a short and rather poorish honey season, I think there is a gain made in using it over any of the plans where the swarms are to be put in new hives, but in good seasons, and especially those where the honey yield covers a period of from three to five weeks, I can see no gain in it over the usual way of treating swarms.

G. M. DOOLITTLE,
Borodina, N. Y.

If the hearts are to be comforted and deeds of mercy performed, it cannot be done to-morrow, but must be done to-day.

How to Use a Honey Extractor,

—W. J. CRAIG.

You probably have one of these machines on hand or at least have seen one, so that it is not necessary for me to describe it. Though there are a great many of them in the supply trade at present, the principle is the same in all, viz. that of throwing out the honey from the comb by centrifugal force. For use in our yard we prefer the four frame reversible; it does its work quickly and well, saving the time and trouble of lifting out and turning the combs necessary in the ordinary extractor.

However the two or four frame ordinary are very good and will extract the honey quite as well. But what you want to know is not about extractors, but "how to use" one. First see that it is in good working order, and that the basket and can are perfectly clean. Place your machine on a solid bench or box just high enough to admit the can or vessel that you intend running your honey off into being set under the tap. Have an "uncapping can" with strainer or a vessel of some sort thus arranged to hold the cappings and drippings. A good sharp honey knife to uncap the combs with, and a dish of warm water to dip it, also to wash the honey from your hands when they get daubed. All this in order in your honey house you go out to your bee yard, taking with you a comb bucket or a super or an other suitable receptacle for carrying in the combs of honey, also empty combs to replace the full one to be taken out. Having your smoker going full blast give the colony to be operated on a few puffs of smoke from the entrance of the hive, this will quiet and prepare them for handling, then open, using your smoke gently, loosen the frames and remove them carefully one by one shaking off in front as many of the adhering bees as possible, the balance brush off gently with a wing or bunch of feathers. When you have made space in the super rather shake and brush the bees into it than in front, they will settle down more quickly. Place your empty combs and carry the full ones into the honey house. When removing the capping don't cut any deeper than necessary by dipping your knife occasionally into the dish of water as above suggested will prevent it getting clogged and tearing the comb. When uncapped place it in the extracting basket and so another until you have the required number. Turn the handle quickly but not

violently, new combs when being extracted for the first time or two require a little care in this way, being more tender are easily broken. When the one side of the combs are extracted lift them out and turn them, (that is if your extractor is not automatic) reverse the motion of the comb baskets by turning the handle in the opposite direction and continue the operation until the combs are emptied. Unless you have your extractor fastened down to the bench or box on which it rests you will find it best not to run off all the honey just as you extract it, having a quantity in the bottom of the can will keep it from shifting.

You should have a very fine wire strainer and strain your honey as it passes from the extractor, it is then warm and so much more easily strained than after standing for a time. A piece of cheese cloth serves the purpose very well. When through extracting and have drained off all the honey, wash out your extractor and leave it in a position to dry. Some are very careless about this, and so their can and baskets get tarnished and rusted, not only injuring the machine but tainting the flavor and effecting the color of the honey at next extracting.

I have gone quite a bit outside of the question in the above answer to our friend not knowing his experience in this line of work, and these are a few of the things in connection that I have found it well to observe.

Brantford.

[The above is in reply to a question asked by a subscriber.—ED.

May Notes From The Central Ontario Apiaries.

C. W. POST.

During the month of May the principal part of the work in the apriary is to force brood rearing to its full capacity.

I use the Langstroth hive 13¼ inches wide inside measure. I winter in nine frames and the first stimulant towards brood rearing is to space the frames a little closer together just enough to admit the tenth frame. This brings the sealed honey quite close together and the bees begin at once to cut through the passages and at the same time stimulates the queen greatly. If a colony is found weak I slip in a division board and space the frames that the bees are on, one fourth of an inch apart. My top bars are one inch square, that gives a space of three eights of an inch between the brood combs, which I think is the nearest right for rapid brood rearing. The hives are then closed and left until the fruit trees are in bloom when I go through them again. This is the most thorough overhauling they get during the season and its the first that the frames are lifted from the hives (unless in a case of queenlessness). I begin at the side of the hive and the first frame lifted out is set in a top storey so robbers cannot get at it. The next frame is taken out and any honey in it is uncapped. As a rule all sealed honey in the hives at this season of the year is in the back ends of the frames and as the honey is uncapped, I end for end each alternate frame; this places the honey between the brood. The first frame taken out is placed in the opposite side of the hive taken from. The queens are clipped at this time and the bees not disturbed again for two weeks, when they will be found packed solid full of brood. Of course some hives at this time will be found short of stores; for those I have frames filled with buckwheat honey that were taken from the brood nest the previous August when the frames were reduced to nine. They are spaced ¼ inch apart in top stories and filled for spring feeding. I know that some argue that bees that are left entirely alone are the first to swarm and that the above manuplations retards swarming. I will say right here that I agree with them in that, I am not working for early swarms, I am working for a hive packed solid with bees and brood, with all the old honey in the hives converted into young bees ready for the harvest when it comes. I have frequently had my neighbours bees swarm in May and I would take a run over and look at them and find that they had swarmed from an 8 frame Langstroth hive and the two outside frames were filled solid with old honey. I claim that with proper manipulating those colonies would have been stronger in bees, less inclined to swarm and of more profit to their owner.

In going over my bees I find those in the double walled hives the strongest and have the most honey. I have them top packed in various ways but my preference is for those packed as follows: place enamel cloth over brood nest, then place a 3 inch rim on the cloth and fill in solid full with old cast off wollen clothing and set a sun cap over this with a sheet iron cover painted red, this converts your hive into a perfect little hot house. I shall add largely to them another year, for heat is the main factor in breeding strong healthy vigorous bees.

Trenton, Ont.

Notes and Pickings.

By D. W. Heise.

(CONTINUED)

Very often just a few bees from a queenless colony in the yard will fly and dodge around your head all day long, and make a great fuss simply because they are a bit out of humor, and their master has been tinkering with their mothers, or handling them. The more you can kill or knock down these little rascals the less you will be bothered with them. (J. W. Young, in A. B. J.). Not only from queenless colonies, Mr. Young; I nearly always find a few of those little rascals in and about the apiary, who seem to think they were specially created to torment and tantalize the apiarist with their unpleasant buzz. Their chances for long life are always poor if I can possibly down them.

F. L. Thompson says, in Review 13: In patching combs, Gravenhurst advises the use of a tin cylinder to cut out the defective portions. With the same cylinder pieces are cut from other combs or sheabes of foundation, which are thus an exact fit. "This is a good and valuable idea. Let us try it."

[Doolittle some time ago wrote an article for C. B. J. recommending empty tin cans of different sizes. This is cheaper and answers equally as well.—Ed.].

A case was recently reported of a colony absconding in the fall, which had been so abundantly fed as to store some in the surplus department. Commenting on this, U. Ludwig says, the reason was, it had no empty cells to cluster on for winter, and cites another case in which a colony thus super-abundantly provided with stores was found dead in the spring. Another correspondent, A. Zapfe, reports a precisely similar case of absconding—F. L. Thompson, in Review. Rats, Mr. Thompson; those may be good authorities. I don't know, but the whole thing sounds fishy to me. If a colony so abundantly fed and has a queen I will guarantee there will be not a little brood reared, and when this hatches there will be a considerable number of empty cells upon which to cluster. If this brooding does not take place under such circumstances, then I opine there is no queen present, and that no doubt is the cause of the colony absconding. And not because the bees got mad, because they saw no way of consuming the stores fast enough to get an empty cell to poke their woolly heads into. Again, we have here in Canada such a practical, up-to date bee-keeper as A. E. Hoshal, who frequently supplies his bees with full cases of sealed honey (not a cell, so to speak, for a bee to saunter into) for winter stores, and I have heard of no evil results. I may be wrong in my views on this matter. It would not be the first time.

J. E. Pond, in A. B. J. 178, in speaking about close spacing to get bees into the supers, says: Some years ago, while experimenting in another direction, I found that spacing frames in the brood-chamber just bee space apart did cause the bees to work at once in the surplus chamber. To get "just bee space apart," I put a ½ inch dummy in one side of a 10 frame Langstroth hive, and spaced the 10 frames evenly apart in the space left. The frames must, however, hang plum and true, else the best effects will not be obtained. The facts are as above stated; by so spacing the queen used the cells for brood close up to the top-bar; very few braces were built, and the surplus chambers were immediately used.

On page 179, A. B. J., E. B. Weed in dealing with Mr. Hutchinson's critic sm re deep cell foundation, says: On page 148, details regarding the size are given that contradict another of Mr. Hutchinson's surmises But he makes another statement that he does not qualify, viz: He asserts that the comb from these deep cells remains unchanged by the bees. How they do it I cannot say; but I know, and so do many others, that the deep cell walls are so reworked that they cannot be distinguished from natural comb. Perhaps Mr. Hutchinson and the other doubting, "Thomases" had better fall in line on this matter. But no; I kick; seeing is believing, and until I see, no; no sirree, I wont believe."

Since writing the foregoing I have had a sample of the deep cell foundation sent me, and very reluctantly I admit, against my will, that its use may be no detriment to comb honey after all. It is indeed very thin and nice, and if what is claimed for it by its promoters—that the bees will yet thin it down to the thickness of natural comb—is true, then it certainly will be a great boon to comb honey producers, as regards quantity at any rate. But I still adhere to the belief that it cannot improve the quality of natural comb; nevertheless if it is equal I am satisfied, and will suspend further judgment until it has been thoroughly tested.

[It seems impossible to believe without seeing that artificial work can be so

delicate; everyone whom I have met has been converted by seeing.—ED.].

In looking for a suitable frame of brood recently, I opened four hives, and in each one I found a frame with considerable drone brood in worker cells. All four of those queens are young and prolific, and I have come to wonder if queens will deliberately deposit drone eggs in worker cells out of pure cussedness, because all, or nearly all drone comb has been removed from the hive. In my experience I have never had this to occur before, unless an unfertile queen or fertile worker were ruling. Perhaps it is because I have never had so little drone comb in my hives as at present. What do you say, ED?

[The bees are swarming and I will leave this for s.meone else to tackle.—ED.].

My bees came out exceptionally strong this spring—never better; and weather being favorable, and an abundance of spring forage, they made great progress up to the second week in May. At that time the tide commenced to turn. Cold at night, rain and high winds all day; only about one day in three or four that bees could fly with any degree of comfort. The result is that they have gone back; not so good at this date (May 31st) as they were three weeks ago. Why don't you feed and keep up the brood rearing? That's all right where that kind of weather only lasts for a few days; but feeding will not induce the old bees to remain at home during windy weather, but rather encourages flying out; and when the population of the hive is being rapidly depleted by the loss of the older bees, I don't care how much is fed you cannot induce an all-wise mother queen to lay more than her daughter can care for during a prolonged spell of impropitious weather. Mr ED. straighten the crooks out of this, and say where I am wrong.

[I have not sufficient experience in spring feeding to answer this, but I know with plenty of honey in the hive the bees curtail brood roaring very much when compelled to remain in the hive for days at a time.—ED.].

Geo. L. Vinal, in gleanings, 233, says he has proved and knows for a fact that late-reared queens are better than those reared early. 1st, They are larger. 2nd, They don't swarm so much, at least the first season. 3rd, They build up earlier in the spring. 4th, The bees seem more hardy and better workers. 5th, When they swarm it is a big one. 6th, With him they winter better. "We find bee-keepers, and practical ones, too, differ on almost every question and management in connection with the pursuit, and the above is an important one Where, Oh Where shall the novice draw the line between truth and fiction?"

F. Danzenbaker, in *Gleanings* 236, in speaking about the importance of heat for successful honey storing, says: Two colonies may be standing side by side when there is plenty of honey to be had; one may be rushing, and the other doing nothing The one has the heat to cure the honey, the other has not; the thermometer will prove it every time. The ideal colony is doing the best thing possible in staying in, to hatch the bees needed to get the heat up to working pitch, which may be in a week, and they may be rushing too. Yes, Mr. D, and if the temperature is up to blood heat some colonies will never rush as regards honey storing, although the hive may be full of bees from floor to attic. But they will rush at you in magnificent style every time you approach them. I had a few of such the past season.

In speaking of feeding a little syrup regularly in early spring as a stimulent, W. M. Barnum, in A. B. J. 210, says: This must be done with the utmost care. If a robber bee gets even the smallest taste, she will soon raise a disturbance in the apiary that will be apt to try the temper. Indeed, I have known this to end up in the total extermination of a good strong colony, and to give the whole apiary a set-back that a month had hadly cured. "From past experience I am able to say the foregoing caution is well given indeed.

Let her go. Two swarms June 2nd; two more on the 6th. The last two *are not* Presbyterian specks, they are Methodist. I never knew bees to hold queen cells so long during cold cloudy weather, as mine have done this season. On opening one hive the next morning after having swarmed, I found a number of mature cells, queens piping and one actually hatched. Some say this is an indication of a bountiful honey flow. Trust it may be so.

Well did I ever— Our own F. A. Gem. Well now, if I haven't nearly given his name away. Will you kindly draw the pen through that, I mean Faleris Gemmelacce. On page 1115 *C. B. J.*, makes a public announcement, the devil, the editor, and himself are now and always hope to be friends. Oh, when I read again, I find this is a typographicol error, he said the printer's devil. I cheerfully make the correction.

Yes Mr. Editor, I did like footnotes But now I am mad, madder, maddest. When you publish what you intend for a foot-

note, and which in reality is a foot, leg and half a body, not merely to get an opportunity to call me names, such as flat-head, I object most emphatically. You leave your readers to infer that I have not studied the question carefully, and therefore do not know that what causes fish bone, is thickness and quantity of wax and not texture.

Upon my word, the gall of some people is incomprehensible. Just look at the Review, page 121. The idea of any man rejoicing in the fact that he is a heretic in theology and apiculture. Poo woo—

[You refer to an article by Mr. W. F. Clarke, in which he makes this confession. We rejoice that he has made a confession of what may have long been known.—ED]

I admit I have not given the questions much consideration. But say, don't you think when you get a superfluity of wax in foundation, you will have both fish-bone and texture. You also say in that miserable leg note, that you had some of the article in your house, and it was no fish bone. I feel inclined to accept your statement, but I hesitate, because a person who will call names, will do other things. I mean eat honey without fish-bone. You may add this to the next instalment of Notes and Pickings. The note of it is. That a flat head is preferable to an S. A. P. head, and the picking will be at your eyes the next time we meet. I like foot-notes a little bit yet But I'm mad— —

[I believe I will have a good look and see if any swarms have come out. I have no time to answer this.—ED].

There is a man from Loveland, Col., who shows in Gleanings page 319, a magnified view of how a foundation looks when fastened by a pressure machine, only to a section. Now assuming the distance between him and me is 1200 miles. If I were that distance less 15 feet nearer then what I am, there would be an (Aikin) head come with a termendous crash off that ridge pole, for saying that all foundations put in the section by that method is likewise. I use nothing but a pressure machine so arranged so the sheet is turned exactly into the proper position before the pressure is taken off. And no such results as he shows in the cut with me. But I'm only a fleebite in comb honey production.

According to the answers given to the queen clipping question, 1089 C. B. J., the majority who answer do not seem to have any fear of a degeneration of wing power. Of the 14 who answer, I think 9 either pronounce themselves as clippers, or are in favor of the practice. I too am a clipper first, last and all the time, and have found it a great convenience.

Foul Brood.

I wonder how many of the readers of the Progressive Bee-keeper take the American Bee Journal and Gleanings. Then I wonder how many read Mr. Cowan on "Foul Brood," on page 50 of A. B. J., and Mr. Holtermann on the same subject on page 96 of Gleanings, (both for this year), together with the comments of the editor of Gleanings, on both. And the surprise is that the editor of Gleanings apparently agrees with both. Mr. Cowan says if I read him right, that while foul brood bacilli at the temperature of boiling water, are destroyed, the SPORES the real seed which produces foul brood, apparently suffer no damage at that temperature, but will retain the power of germinating into bacilli, or foul brood after they have been subjected to boiling water. Mr. Holtermann has proven, through experiments carried on by the Ontario government, that the low heat required to melt wax is amply sufficient to purify the worst foul brood combs possible to be obtained, so that no spores are capable of germinating from wax thus rendered: and as I said before, the strange part is that Editor Root endorses both statements as correct. It would be interesting to have Brother Root explain how a temperature of 142, (the point at which wax melts) will kill foul brood SPORES in Canada where Mr. Holtermann lives, while a temperature of 212, (the point at which water boils), will not damage such spores, in the least, in England, where Mr. Cowan resides. There is something wrong somewhere, and as my experiments in 1872-3, when I cured my apiary of foul brood so that it has remained cured ever since, proved that boiling water would destroy every vestage of foul brood, and as hundreds of others have proven the same things, I am compelled to believe that Mr. Cowan, with all his high research, must have made a mistake.—Editorial in Progressive Bee-Keeper.

[I do not think there is necessarily anything strange about this, or if there is anything strange, it is that the Editor of the Progressive has not studied the conditions before comparing. Might there not be something which would prevent

the spores from germinating in melted wax. We have there something more than temperature. If the wish of the Ontario Bee-Keepers' Association is carried out and I am appointed to develop bee-keeping in Canada and carry on experimental work, I hope to carry on this experiment on a much more extensive scale. I and those who know of Mr. Cowan would not for a moment dispute the accuracy of his work. Those of us who are practical bee-keepers do not believe that the spores of foul brood will germinate after the wax has been melted, and if we think for a moment we also can see that there need be nothing conflicting about this. ED.]

Close Spacing of Frames.

--J. E. POND.

It is well-proved fact in bee-culture, in bee-culture, in fact so well proved, as to become an axiom, that bees will not seal up brood in cells deeper than 7/16 inch. This has been proved in several ways in the past, and anyone who doubts, can easily prove or disprove it by a trial.

Now if we space bees just bee-space apart, so that the combs cannot be drawn out over ⅞ inch thick, this will leave (with the septum) just the proper depth of comb in which to rear brood. Another fact in bee-culture has been conclusively proved. viz :—that bees will store honey in preference to brood, in cells where they can draw them out more than 7/16 inch deep ; they also will store honey above the brood in every intance. Now from the above proven facts, have we not the logical right to deduce the theory, that by giving space room in the brood chamber, only such, that the bees can draw their cells out to 7/16 inch deep, and by giving a chance for deeper cells in the surplus chambers, that the bees will use the brood chamber only, for brood, and go at once into the surplus chamber to store honey?

We have tested this matter thoroughly, and find the answer, yes, to the above question every time.

If any have doubts, it is but little trouble to test the matter.

We be believe the theory we advance to be a matter of importance to comb-honey raisers, and give it for what it may be worth to them, assuring them at the same time, that in our own apiary, the results are uniform, and back up the theory in every instance.

North Attleboro, Mass , May 10th, 1897.

[Here is an interesting question for discussion. What have our bee-keepers to say about it? ED.]

Distance Apart for Bee-Hives Foundation Fasteners.

BY E. F. BRAINARD.

In the March Canadian Bee Journal the question comes up as to the right distance apart to set bee-hives. To get a large number of colonies on a small piece of ground and yet not have them crowded, or have the bees entering the wrong hive, a good plan is to have them placed in groups of four hives each, two facing east and two west, with backs together. Many of our largest bee-keepers have them placed this way, especially those who practice cut-door wintering; but aside from the advantages gained in wintering, this arrangement of hives has several other advantages. It gives more room for a hive-cart or wheel-barrow, fewer shade boards are required, and while working with one colony the adjacent hives form a table for smoke and other tools, and last, but not least, an easy record can be kept of each colony without any numbers on the hives or stands for it is easy to remember that the N.E. colony in each group of four is No. 1, the S E No. 2, the S. W. No. 3, and the N. W. No 4. The alphabet is used to indicate the number of the groups, commencing at a certain side or end ; in the record book a letter and a figure represents a complete number ; for example. A 3 would be the extreme south-west colony in the yard if you commence to letter them from the south side. For hive stands 3x4 inch scantling are used, cut 3 feet long, four of these pieces for each group ; on these the hives are set with about 6 inches of space between the hives. Each group of hives is about 10 feet apart from center to center.

To fasten full sheets of foundation in sections, leaving but a small space between the edge of the foundation and the sides of the section, using but little wax and yet fasten the foundation strong enough to stand the rough usage they are often subjected to, requires a different machine to any I have yet seen described.

The machine should work upon the hot-iron-melted-wax plan. The front edge of the metal plate that melts the wax should

be the lowest, that the melted wax will run to the front, so that the sheet of foundation will sweep this hot wax that has been melted from the preceding slip ahead of it as the hot plate is withdrawn. The metal plate should slide backward and forward in a groove, or on a small rocking shaft; a spring carries it back away from the section and a foot treadle brings it forward again after an empty section has been put into place. The front point of the plate should come through the section about a half-inch past the center of the section.

The block that supports the section is similar to the Daisy foundation fastener, except that the block is hinged about an inch above the section, so that the foundation is supported while the section is being turned into an upright position. One lamp is all that is required to heat the metal plate, as the plate is a little less than 4 inches square. A piece of an old saw blade makes a very good plate.

A similar machine to the above is used for fastening foundation in brood frames except that it is made long enough to take a brood frame; also a metal plate 17 inches long will require three lamps to heat it.

ST. THOMAS, Ont., March 12, 1897.

Notes for Beginners.

During this month you must not forget to shade and ventilate the hives according to weather and do not crowd your hives too much. This is the month during which many bee-keepers should provide their bees with winter stores. A beginner must avoid "tinkering" with his bees, and what may be a good plan for the advanced bee-keeper may be all wrong for the beginner. Leave at least two full combs in the extracting super of every hive and hold this in reserve until in the Fall of year you find your bees have enough honey for winter. This will save you much work and trouble If you are in a district where there is almost sure to be a good buckwheat flow, the latter may be depended on. Keep your bees together as much as possible, avoid after swarms by putting the new swarm on the old stand, and in light second swarms try and find the young queen or queens and return the remaining bees. See that every colony has a queen and you will lay the foundation to successful bee keeping.

R. F. HOLTERMANN.

Canadian Thistles (?)

—BY ERIN-GO-BRAUGH.

I have just finished perusing the Canadian Bee Journal for June. I fear the editor has come to the conclusion that because my name is associated with thistles, that I am a porridge devouring Scotchman. Now any sensible person looking at my autograph would suppose that I was a Spaniard or an Italian. Judging however, from the manner in which it appeared under the above head, in your last issue, I have about made up my mind, that your readers will take me for a Commanche Indian or a Bee Journal editor. At any rate, I have for the present decided, that if it were not for the thistles I could not be sure where to find myself, and will therefore change my signature in the hope that the practical joke played on me by the Combination at Brantford, will not make me appear next as Gemmilachus Cabbachus or something even worse than a Saur Kraut Eating Dutchman.

FOUL BROOD.

Some time in the near future I hope to give your subscribers some information why a few Canadian Apiarists in and around Woodstock and Stratford, myself among the rest, pressed so hard to secure legislation on the above disease. My reason for so doing is because there is evidently considerable misunderstanding regarding the matter, and honor has in some instances been credited to wrong sources, while others entitled to some consideration for their efforts have not received due appreciation for the active part they took in assisting to secure such. Fair play is bonnie play—more anon.

POISONOUS PROPOLIS.

Is there such a thing as a persons hands becoming poisoned through scraping supers, money boards, &c. The reason why I mentioned this, is because I observed in some of the bee periodicals that such poisoning had actually taken place.

Now my epidermis is naturally very tender, in fact to such an extent, that even strong or cheap soap has to be avoided, and it may be that I have been punished unawares from the use of the latter. But to explain. While engaged scraping propolis as stated, the fine particles adhered to my hands, and they had frequently to be cleansed with water and some beautifully perfumed cheap toilet soap, secured at

a departmental store. It was not long before my hands bore evidence of ill usage, from some cause or other, and I am now at a loss to know what was the cause. I never before had any trouble from propolis. Can anyone enlighten me on this point.

KILLING DRONES.

Having had occassion to pass the entrance of a colony at my home apiary, containing one of my stock queens, in which there was considerable drone comb, I observed that the drones were being slaughtered rather profusely. Now this was a gentle hint that I had better apply a remedy, i. e. wished to save them, of course the loss of a few drones would not materially injure such a colony, providing the loss goes no further. There is a possibility however, that under such circumstances, the queen herself is restricted and that the working force will not be as large as it otherwise would be under the stimulus of a little food, supplied between fruit bloom *and the blossoming of white clover.* Having some combs partially filled with candied honey, I at once uncapped them and then swished water over their surface seeing that some entered the vacant cells, and these were hung in the top stories. One would be surprised at the effect such conduct has on a colony, when no nectar is being gathered, and the thorough manner in which the combs are emptied of their contents.

OBSERVING HIVES.

A great amount of interest can be taken in having a one frame observing hive in some convenient spot in the room most frequented by the family, so that one may learn of the interior economy of a bee hive. Such a hive has occupied the domicile of the writer for a year past. Last June a frame of brood with a ripe queen cell attached, was placed in the hive, and an entrance cut in the window sash. The queen hatched, was soon fertilized, then commenced to lay and was clipped as a matter of course. Comb building progressed; the filling of cells with nectar; the sealing of the combs; and pollen pellets brushed from the legs; as well as the depositing of eggs by the queen was often observed. You say that the hive was in the house a whole year? Yes; and did not the little colony die in winter? Why no, it did not, although I had my doubts of it, surviving with only one comb and no place for the bees to cluster, except on either side of a single comb, with nothing but a pane of glass next to them. The room however was warm as fire was constantly going day and night. It is almost needless to add that it proved a great source of interest to children and visitors

[Owing to the success of the highlanders from Toronto, I expect in the next number of the Canadian Bee Journal you will sign yourself a Scotch Canadian.—ED.

Care of Bees in the Spring.

BY A. J. CUNDICK.

Of any time of the year in caring for bees the most important time is now. A bee-keeper may exercise the greatest care in packing his bees in the fall of the year, and bring them safely through till the first of April and then lose some of them. It can be traced to different causes, but I think the greatest cause is from poor queens; and poor queens are found the most where bee-keepers have the same race of bees now that they had ten years ago, without ever introducing new blood into their apiary; for bees will as surely run out as any kind of farm stock will. Therefore, I say that the best way to guard against spring dwindling is to keep only such queens as will keep the hives booming with bees. Now, those who have weak colonies will find valuable remedies for the same in the April issue of C. B. Journal, whose pages are full of valuable information for the bee-keepers, especially the beginner. Equalizing brood between strong and weak colonies as practiced by a great many of our bee-keepers. I think is a great mistake; it is like making one hive do the work of two, by making the strong colony keep those that are unworthy of our attention, and time and labor is lost for nothing but to lengthen the days of an unprolific queen. The wisest plan is to give the weakest colonies a little extra care and nursing by feeding and keeping warm, and by so doing we way have a good colony for the following year.

I will now close my short article by giving a little experiment I had last spring by feeding. I took a hive in equal proportion to the rest of the colonies and fed it less than a pint of syrup every other day for about a month. The result was that it increased so rapidly in bees and honey that they swarmed on the 21st day of May, while the first swarm from the others did not issue till about the middle of June; but unfortunately we did not see the swarm till they were on their way for their future home in the bush. Hoping that others will respond to the requests of the editor in the last issue of C. B Journal, and wishing all the Ontario bee-keepers a prosperous year in the honey industry.

WARWICK, Ont.

The Handling of Bees.

—ALPINE MCGREGOR.

So much depends on the management bees receive in the spring that I have decided to give the plan, which after trying many others, I have settled on, as it involves but little expense and labor. The former is of extreme importance to all bee-keepers in view of the present prices of honey and meagre honey crops, while the latter is of special importance to the writer, who is not blessed with a very large stock of physical strength and whose enthusiasm has so completely evaporated, that he no longer delights to work, even in the enchanted (?) field of apiculture.

Preparation should begin in the fall by giving the bees full combs of honey, which have been filled in supers, until each colony in the "dovetailed" hive weighs not less than 56 lbs. (Not an ounce of sugar should ever be fed except in a season like 1895.)

In placing bees in the cellar, each tier should rest on a separate stand placed on the cellar bottom, which permits of their removal in spring on the instalment plan. The first lot were taken out on March 29th, and the last on April 15th Manitoba weather was the cause of the long delay in removing the last lot. They were fed flour as a substitute for pollen, about two weeks before natural pollen appeared.

Of all the blunders that is made in removing bees from cellar, one of the worst is to wait till "natural pollen appears," or till the "soft maples bloom" as the books say and then when this time arrives, which in this locality is sometimes as late as the last week in April rush them all out some fine morning. What is the result? The bees rush out for a fly and in their excitement never think of marking their hive. The bees from two or three go into one, killing and killing the queen and leaving those adjoining almost empty. There are few apiarists who have not had this experience and many I have reason to believe, practice this plan at the present day.

My hive stands are 8 feet apart and the hives as they are taken from the cellar are placed on every other stand, which leaves them 16 feet apart. I prefer a cool morning and very early, if the day promises well. In this way with the hives from which bees are flying 16 feet apart, there can be no mixing of bees, and each colony has a fly as though it were the only one in the yard. In regard to packing so as to conserve the heat, having tried various methods, such as clamps, double-walled hives, packing with sawdust, etc. I have discarded them all, as necessitating too much labor and expense I have not tried the plan recommended by the editor of the "Review" of packing around each hive by using a rough box—it makes me tired even to think of that.

I use the Miller bottom board and it has my unqualified approval. If other conditions are right the colony is wintered perfectly, as it secures a two inch space under the frames and sufficient ventilation with a tightly sealed cover. The last named advantage is apparent in spring when the hive is placed on a summer stand as all that is necessary is to reverse the bottom board and contract the entrance—the cover being hermetically sealed, no heat can escape and it need not be removed till settled warm weather and the hive is crowded with young bees. As a matter of fact, many of my hives were not opened from last September till the middle of May, and they are now in splendid condition. Should it be necessary to loosen and remove the cover for examination, it is better to place a quilt over the frames with two or three thicknesses of paper and a Jones hair cover on top, or what is better, a super half-filled with sawdust held in by a piece of cotton tacked on the bottom. The dovetailed hive cover is a poor affair for preserving the heat, if once loosened.

By following out the simple plan above outlined, my bees came through the winter and spring without the loss of a single colony and there present condition is nearly all that could be desired; although this has been one of the most unfavorable springs I have ever known. A few colonies are somewhat weak, but with a little assistance will be ready for the "honey flow", if said flow should materialize.

Inglewood, May 20th, 1897.

Jacob Has Returned.

Some one said in the last C. B. J. that Jacob had returned from the west, and I believe he has, I have no doubt but what quite a number expected a few lines from me before this, most of you know our main reason for going out to the coast, Mrs. A. not being in very good health for several years we thought we would try California climate, but not receiving the benefit we expected we decided to return again. I am pleased to say that Mrs. A. has been feeling quite well of late, the trip home seemed to do her lots of good, in leaving Southern California we travelled up the Coast to British Columbia, staying

a few days in Seattle, Washington, then over the C. P. R. home taking two weeks to make the trip. There are some things I liked about California, and some I did not. The winters there are very nice, it gets quite warm through the day and you can get about with comfort, then again there is so much fruit, you can pick ripe fruit (of somekinds) off the trees the year round. Just think of peaches $10 per ton, prunes $10 per ton, grapes $5 per ton, and other fruits in proportion. But there are other things I am not in love with, for instance, a sand storm, it will get to blowing sand sometimes and will probably keep it up for 24 hours, you can hardly see across the street for sand, and the air in the house gets so full of dust that you can hardly breath. California is not all like this but a good deal of the southern part is. Again the long continued drouth and the hot beaming sun during the summer, is very trying probably seven months without a drop of rain, and five or six months without a cloud in the sky. This sort of climate seems to agree with lots of people and lots of them say they like it, but Mrs. A. and myself did not care for it. Some other time when the C. B. J. is not crowded for space I may give you a few lines on the products of California, and the difference between bee-keeping in that country and this.

J. ALPAUGH,
Box 324, Galt.

[Yes, we should like to hear something on the above subject.—ED.].

P.S.—You will see a short article in the C. B. J. for May, page 1092, where Frank says he was down to the coast with me in California. His other name is Gemmill, and, like most other young folks' first time away from home, pretty hard to look after. He would persist in running down after the waves as they rolled back off the sand, and picking up little shells. He had just picked up a queer little shell and was looking at it when I noticed a big wave coming and just at his heels. I yelled at him to run, but instead he jumped square up, higher than I ever saw an expert jump on the 24th of May. In a moment the wave had passed under him, and was several yards up the sand. At first I thought he intended to stay up in the air until the wave had passed back again; but when I saw him coming down I thought probably he intended to alight on the water and walk ashore; but instead, he came down into the water and sank to the bottom like a wet elm log. If I had not thought more of Frank than I did of my Sunday clothes, he would have been drowned. Of course I had to wade out up to my neck to get him out; that was how I got wet. And that field where he thought he saw so many cala lilies was nothing but a bare field of sand. I knew at the time it was his imagination, just from being so wet and nearly frightened to death. Now, I don't want you to think that we were both half drunk, and don't know what we are talking about; if you don't believe me, just ask Frank. J. A.

[You are not trying to insinuate you were both more than half drunk?—ED.]

Questions

What is meant by "balling a queen?" What may be the cause?

The only time I have ever seen queens balled, was when introducing. After having her caged for a day or two, I have liberated them and the bees would act very friendly towards her, but upon examination an hour or two after I would find her in a ball of bees, generally about the size of a shelled walnut, every one doing his best to kill her. The only cause I know of, is, that she has not yet the same odor as the bees and she is treated as an enemy.

WILL ELLIS.

The bees form a ball around the queen, they appear to be angry and try to sting her. In fact they will sting the queen to death, if allowed to do so. It may be caused by handling the combs too often during the absence of a honey flow, or very early spring, or when introducing a strange queen, if liberated to soon.

WARRINGTON SCOTT.

In balling a queen the bees form themselves around her in a ball sometimes as large as an apple, and hold her thus till she dies. Of course, this does not always kill her, but generally does I believe.

The balling of a queen, shows that the bees are dissatisfied with her and are anxious to have another.

GEO. B. MCCULLOCH,
Harwood.

The bees cluster around the Queen and form a ball. Caused by strange bees

JOHN PIRIE,
Drumquin, Ont.

(a) Making her a prisoner. Enough bees will gather around her in a compact cluster to form a ball—sometimes as large as an apple. They do not sting her as a rule, but prevent her freedom.

(b) It is usually a strange queen which they ball, or one they think is a stranger. I once removed an old queen from a colony and on attempting to return her on hour later they would not accept her, but "balled" her.

I think much depends on the queen's actions. If she moves about without fear I think she will usually be allowed the freedom of any hive.

EUGENE SECOR.

The queen being enclosed and held tightly in a ball of bees, about the size of an English walnut.

Fear, anger, jealously or discontentment.

R A MORRISON,
Inverary, Ont.

When bees ball their Queen they cluster round her in the form of a ball, thus hindering her movements, if continued long she will be injured, probably killed

It may arise from various causes, such as, hastily opening a hive on a cool day.

The queen becoming infertile and useless, or her entering a strange hive in the swarming season. R. H. SMITH.

If I should, when opening a hive for any purpose, discover a "ball" of bees the size of a hen's egg (more or less) on the bottom board of the hive, or between the frames, struggling like an old time free fight, I would know that the queen was being "balled." The cause is hositility to the queen, but what causes the hositility is not always apparent to the closest observer.

Some prominent apiarists have contended that queens are often, or at least sometimes balled by her own bees to protect her from robber bees, etc. But such is not my experience or belief. I have smoked the balling bees off of a large number of queens, often the queen being the mother of the "ball" of bees and I know they mean murder, and do often sting to death each other in the scramble.

The remedy is to smoke the ball of bees and rescue the queen and cage her for 24 hours before releasing her.

G. W. DEMARCE,
Christianburg, Ky., U. S.

(a) The gathering of more or less in a compact ball around a queen; usually done for the purpose of squeezing her life out.

(b) There are several causes. The queen may be a stranger, and instead of stinging

her as a strange worker would be, she is "balled." She may have been recently introduced to a colony successfully, and some disturbance, by the bee-keeper or otherwise, will often so irritate them that they will "ball" her. DR. A. B. MASON.

(a) When bees do not accept a strange queen, they show their "ill will" towards her by giving her a "good hugging," (not the general way with the human family I trow). In other words she is surrounded by a ball of bees, about the size of a walnut, and kept a prisoner for an indifinite period, or until killed or rescued by the apiarist. Sometimes however, she is finally released by the bees themselves, but such treatment as a rule results in no good to the queen, she being generally clipped in some shape or another.

(b) The course for such treatment, may be the result of the queens own conduct, whether while being introduced to a strange colony, or among her own bees. Nervous queens are more apt to be balled, than those of a quiet or easy going habit. Avoid disturbing or jarring the hives immediately after the cessation of a honey flow, or very early in spring. before the colony has settled down to moderate brood rearing, and is in a fairly prosperous condition. F. A. GEMMELL,
Stratford, Ont.

The inference I draw from the above query is the actions of the bees and queen "in balling a queen." I think that all practical bee-keepers have been an eye witness to the stampede. It begins by the queen acting shy and frightened, and instead of marching about in her ordinary dignified style gets up a high rate of speed over the combs, presently a few bees will start after her and grab hold of her wings or legs, others will soon join in the fray until she is literally overpowered by her persuers and imprisoned in a ball of bees. about the size of a butternut, they usually fall to the bottom of the hive and remain there in a clinched mass until the queen dies, or until they decide to let up their grip and give her her liberty.

(b) Several reasons can be given: 1st, In opening the hives in early spring, notably in windy weather. 2nd, In introducing queens in unfavorable weather by unreliable methods. 3rd, Young queens returning from their mating flights. The latter cannot be avoided. C. W. POST.

Bees will inverable ball a stranger queen, by so many of them trying to get at her to kill her, so that they sometimes form a ball the size of a hickory nut.

They will sometimes ball their own queen without any apparent reason.
A. D. ALLEN,
Tamworth.

"Mangling" her. A bunch or knot of angry bees, about the size of a hickory nut or walnut nut tightly clustered about her, pulling, biting and apparently trying to sting her.

Anything that will cause her to act unnaturally, as fright caused by pounding hive, or improper handling, presence of another queen if introduced to a colony, etc
A. E. HOSHAL.

On opening a hive at times the queen is found covered by a large number of bees, who cling to her, and to themselves very closely; at times so closely as to smother or seriously injure the queen.

The cause may be a sudden fright or something of the kind, if the queen belongs with the colony. If a new queen just introduced, it is probably antipathy to her; but the cases are frequent and it is almost impossible to give the cause or reason for so doing. J. E. POND.

(a) A number of worker bees forming around the queen in a very compact ball.

(b) Because she is a stranger as a general rule. JAS. ARMSTRONG.

"Balling" is the term used for the peculiar way in which bees surround a queen, whom they want to kill, "whether she be a stranger or born in the land." A queen suddenly released into a queenless colony, or a queen entering a hive not her own in mistake, is likely to be thus treated. Sometimes indeed, when in an excited state they will rush at and ball their own. A short time ago, after hiring a swarm I found the queen balled on the alighting board, not having my smoker in shape just then to disperse the rebels, I lifted the little cluster and dropped it in a dish of water. this had the desired effect, they at once released her in order to make their own escape. I caged her on the frames until the swarm quieted down, and then let her out among them. They received her all right. W. J. CRAIG,
Brantford.

Birds of a feather are the most jealous of each other's plumage; fine feathers often make unfair birds.

Purity of heart is that quick and sensitive delicacy to which the very thought of sin is offensive.

A Manitoba Bee-Keeper.

ARMAND, Man., May 31, 1897.

R. F. Holterman, Esq.,

DEAR SIR.—I have not had much experience in bee-keeping, but as you have twice asked for it, I thought I would tell you what I have done.

In the spring of '95 I bought two hives of bees; the first one I had to bring ten miles over a rough road on a warm night. When half way home the frames, which were not properly secured, broke loose, and the division board whipped the frames for the next five miles. Fortunately I had on an empty top box. The queen was not killed and I had about one quarter of the bees left. I took good care of them and had a fair-sized swarm on June 13. Not knowing any better I allowed four swarms to come from this hive. My No. 2 hive I gave plenty of room and got one large swarm.

July 25, extracted 42 lbs.; Aug. 8, 76 lbs.; Aug. 27, 84 lbs.; Sept., 79. Total, 281 lbs.

In September I fixed the bees for winter by leaving on the frames the regular summer quilt and three thicknesses of woollen cloth, and an average of 37 pounds of honey to each hive. On October 30th I put them into the cellar.

May 2nd, 1896—Took bees out of cellar all alive and well; used on an average 14½ lbs. of honey in each hive; lowest, 8 lbs.; highest, 21 lbs.

May 5th, gathering pollen; May 31st, first drones flying; June 13, first swarm.

I tried queen excluders on some of the strongest swarms, which caused a delay of three days in filling the boxes and gave me swarms from swarms. All went well until Sept. 3rd, when we had 3½ degrees of frost, which meant a loss of 10 lbs. of honey to each hive according to the '95 record.

July 9, first extracting. Honey produced in 1896, 1,029 lbs. My bees have now increased to twenty hives, which I put into the cellar the end of October.

April 24, 1897—Took bees out of cellar this afternoon; all alive and in good order.

I use mostly half-sheets of foundation; have used some whole sheets and like it better; would have all whole sheets when possible.

We are having a long spell of cold weather with considerable frost, so that the bees cannot work.

May 28—Have just lost one hive by starvation.

Yours truly,

JOHN Q SUMNER

CLARENCE, Dec, 14th. 1896.

R. F. Holterman, Esq., Brantford, Ont.

DEAR SIR—Enclosed herewith I send you a report of the Russel County Bee Keepers' Associations Annual meeting held at Rockland, on Dec. 3rd Inst., as condensed for a local paper from which I clipped it, and made some proof corrections. The balance reported by the Treasurer is $16.50, and the sum voted for prizes, $9 00. The resolution re the Adulteration of Honey read as follows:

"That this association protect the interests of Honey Producers by prosecuting any person or persons found manufacturing or offering for sale any adulterated honey in the County of Russel after being warned to desist.

"The Secretary reported having made arrangements with the officers of the Farmers Institute for Mr. Percy H. Selwyn, of the Geological Survey, Ottawa, to give addresses on subjects relating to bee-keeping at their meetings, which was to be held at Rockland the following week."

You may insert the above items if you care to, perhaps on the whole it would be better to. I may say that now the Farmers' Institute Meetings are past and also Mr. Selwyn's addresses, they were very much appreciated by all present, interested in bees, particularly the one in which he discoursed on, "The Preparation of Bees for Winter," which was very instructive.

Yours very truly

G. G Sherriff

Sec'y R. C. B. K. A.

ROCKLAND.

The annual meeting of the Russell County Bee Keepers' Association held here on Thursday last was rather slimly attended considering the efforts made to advertise it. The unsettled state of the weather and roads perhaps being as much the cause as the apathy of the bee-keeping fraternity itself. All the enrolled members were present with the exception of two who were unavoidably detained. Only the necessary business was carried through at this meeting; the customary papers and addressess being held in reserve for the Farmer's Institute meetings to be held on the 11th and 12th. The treasurer's report was adopted without discussion, a balance being reported on the safe side of the accounts. The officers of last year were re elected unanimously, and also two additional directors, being: Pres. Jas. P. Gamble, Cumberland; Vice-Pres., Alex. McLaughlin, Cumberland; Directors, W. J. Brown, and D. Brown, Chard; Duncan

McLaurin, Clarence; Albert Edwards, Rockland; Secy-Treas.. G. G. Shireff. Auditors, D. McLaurin and P. McLaughlin. The association now numbers ten members, five of which are also members of the Provincial Association.

The president and secretary were appointed a committee to arrange, if possible with the Township Agricultural Society for the amalgamation of funds to be paid in prizes on honey and apiarian exhibits, at the society's annual exhibition, and an appropriation being voted for that purpose. A strong resolution, moved by W. J. Brown, pledging the association to prosecute anyone selling or manufacturing adulterated honey under the "Adulteration of of Food's Act" was unanimously past. The association's mid-summer meeting was invited by W. J. Brown and the secretary to meet at their homes the secretary's invitation being finally accepted. This meeting takes place in June of each year and partakes more of the nature of a picnic than a meeting. It was decided to hold the next annual meeting in November '97 at Cumberland village. The American Bee Journal will be given for one year as a premium to each member of the local association. Mr. W. J. Brown handed in a paper entitled, "Organization", to be read at the Farmer's Institute meeting, he expecting to be in attendance at the Provincial Convention, in session at Toronto, on the same dates. The meeting then adjourned to meet again in the flowery month of June at Mr. G. G. Shirreff's apiary—to be.

Seventeenth Annual Meeting of the Ontario Bee-Keepers' Association

Held in the Council Chamber of the City Hall at the City of Toronto, December 8th, 9th and 10th, 1896.

(Continued.)

With regard to other work which has been done, apart from that suggested or borne out by Prof. Howard's investigations, Mr. Holterman sent me wax which I infected with foul brood spores and melted the wax, and I gave it a liberal dose of spores which had been grown in the ordinary way. Mr. Holterman took this wax and made comb foundation and re-melted it again and let the bees work on it. He reported to me (I do not know a great deal about it); he said, I think, that he found at present no trace of bacillus alvei in a hive. I have not had an opportunity of looking at it. Next year we hope to continue further experiments which Mr. Holterman may tell you about.

I also tried feeding bees—we had in the laboratory two different colonies—I fed them abundantly on syrup composed of about two parts of ordinary granulated sugar and one of water and in which was mixed up a dose of spores of bacillus alvei. I did not notice that any of the bees were affected by being fed on this mixture. I took some of the bees out once or twice and fed them on it to see whether the germ affected the bees itself or not. Some of them died, but I would not attribute it to that. However, I tried some experiments with ordinary house flies. I took flies and confined them and gave them plenty of air; I also took the same number of flies and confined them in the same way next to the first lot, under exactly the same conditions; to the one I fed syrup, just the ordinary granulated sugar and water containing the germ, and to the other simply sugar and water alone. At the end of three days all the flies that had been fed on sugar and water alone were well, whereas, all the flies that had been fed on sugar and water with the bacillus were all dead. I did not continue this.

I have also at different times examined wax from infected hives, but have had at present no growth coming from that; also I examined the ovaries of the queens and also had no results from that. I found in

germs of bacillus alvei present. I have other experiments going on as to the effect of formic acid; whether the vapor of formic acid will kill it or not, and what percentage might be used. I thought that might be a good stuff for mixing with sugar or anything that is fed them, especially as bees need formic acid; I have also tried the effect of naphthaline.

These experiments close the work which I have done this year. [Prof. Harrison's address was greeted with applause]

Mr. McEvoy—As far as my experience goes in the matter I never heard anything finer than that which Mr. Harrison has done, he has done his work very thoroughly; he has done a great deal to straighten this matter out. It was for a time thought that the bees never stored honey in a diseased cell until the honey itself was ripe. This gentleman has found both the pollen and honey diseased and the reason why is because it was stored in the dead cell; that is where he found it.

Could you explain why that did not break out again after you had put the diseased matter in the wax and the bees went to work?

Prof. Harrison—I have no explanation to offer of that; I did not examine the wax after it was made up into comb foundation; I regret that; I would like to find out whether the germ was alive at that time.

I think in your work, Mr. McEvoy, you entirely take away all diseased matter?

Mr. McEvoy—When the bees rush into these cells where the honey is and fill themselves with honey, of course I work to get that honey away.

Prof. Harrison—I rather think that only in case of the weaker colonies is the disease liable to grow, or rather to spread; I cannot offer no explanation. As you noticed, I have made no suggestion at all in the report on treatment. I can offer no explanation of the fact of spores getting access to the hive from other sources outside.

Mr. McEvoy—The germs of the disease will rise.

Prof. Harrison—They cannot rise of their own free will. The only way is by the atmosphere blowing in different directions. Unless the surface is perfectly dry the germs cannot lift. When we breathe we cannot throw out germs for they are unable to leave a moist surface; that is why special caution is taken with consumptives. If the matter is dry and is blowing about and person takes it into the lungs the disease is started.

Mr. Holtermann—Is not this the case, that with the foul brood disease, first of all there is that exceedingly sticky substance, and the danger is not great and unless the matter is broken off in the finest particles and hardens and dries it is not likely to be given off in the atmosphere?

Prof. Harrison—That is so. Another thing, I have a great many experiments, other than these, going on in the laboratory and I also class work with students, and a lot of this stuff has been lying around; some of the sugar which I have filled has been spilled over the laboratory from time to time, and in fact has been spilled all over the place from carelessness and I may say I have never, during the time this work has been going on, found stray colonies in the different media which I employ; when I say stray colonies I mean spores of the bacillus that have been wafted around in the air which would fall perhaps in some of the different media which I employed, which would be a good place for them to grow in.

Mr. McEvoy—Did you test to see if those would arise and spread in the air?

Prof. Harrison—I have tried nothing on that except the different media I have tried. I think the solution of it is altogether owing to the tenacity with which these things hold together.

I might ask if there are any other lines that the Association would suggest should be followed out.

Mr. McEvoy—I move that a hearty standing vote of thanks be tendered to Prof. Harrison, and also to Mr Holterman for bringing Mr. Harrison to the Association.

Mr. Best—I take great pleasure in seconding the motion.

The President put the motion which was carried with applause.

The President tendered the vote of thanks to Prof. Harrison.

Prof. Harrison—I thank you, gentlemen, for this motion and also for the hearty way in which you have shown your appreciation of what I have done.

Mr. Holterman—As far as my part is concerned, I have been amply rewarded by the result of the work and I would like to say here, touching upon one or two of the remarks of Prof. Harrison, that the object of taking the buckwheat and clover honey was this, that I knew from painful experience that when the bees were working on buckwheat the stings were more painful than when working on clover. When the question was brought forward as to what influence formic acid might have upon the spores of the disease and the development of it, we acted in this way: we took the clover honey and the buckwheat honey directly from the hive, uncapped it, sealed it and sent it to Prof. Harrison. I thought there would be more formic acid generated when the bees were working on buckwheat

than on clover and the investigation of Prof. Harrison shows that is the case.

With regard to the way in which that foundation was made I may say that Mr. McEvoy saw the wax and he said he never saw finer wax, or wax which the bees would be more likely to work out quickly; that was broken in small particles; the object was to have as little heat as possible applied to the wax. It was broken in small particles and dipped and immediately milled and the swarm put upon that foundation. Mr. McEvoy inspected it and so far it is perfectly free from the disease.

Mr. Evans moved, seconded by Mr. Shaver that the order of buseness be suspended and that the Association now take up the business that has been laid over at former stages of the meeting. Carried.

Mr. Pettitt read the report of the Committee on Honey Legislation.

On motion of Mr. Evans, seconded by Mr. Hughes, the report was adopted.

Mr. Holtermann—We would like to know if, in connection with the foul brood experiments, there is any particular line we are not working n at present you would like us to undertake?

(To be continued)

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