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THE CANADIAN
BEE JOURNAL

"The Greatest Possible Good to the Greatest Possible Number."

Vol. VIII, No. 7. BEETON, ONT., JULY 1, 1892. WHOLE No. 315

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THE CANADIAN
BEE JOURNAL

"The Greatest Possible Good to the Greatest Possible Number."

Vol. VIII, No. 7. BEETON, ONT., JULY 1, 1892. WHOLE No. 315



*Yours Truly
 G. M. Doolittle*

GENERAL.

Gilbert M. Doolittle

A SHORT SKETCH OF HIM BY A NEIGHBOR.

G M. DOOLITTLE was born April 14, 1846, near his present location in the town of Spafford, Onondaga Co., New York. His parents were natives of

Connecticut, and moved to this state a few years before he was born; hence the thoroughness, energy, and activity of the "Yankee" are largely manifested in the subject of this sketch.

From his early youth Mr. D. has been an ardent admirer of the busy bee, taking great interest in them when kept by his father. Later on, nearly all the bees in this section of country

perished with foul brood, so that from 1856 to 1862 a hive of bees was a rarity. After this the disease seemed to abate, so that in 1868 bees were quite common again.

As 1868 was a splendid honey season, bee-talk was rife in this locality, which again brought to life old ambitions which had been crushed out by the former loss by disease among the bees, so that the spring of 1869 found Mr. D. with two colonies of bees of his own, as the starting point to his present apiary. Wishing to know for himself all the minutiae of this (to him) interesting pursuit, he procured nearly all the bee-books of that day and subscribed for the bee-papers. As his ambition led him toward the practical side of bee-keeping, Quinby's *Mysteries of Bee-Keeping Explained* was his favorite, the pages of which were as familiar to him as a nursery rhyme. His intense desire to learn and investigate the bees in every particular has been such that he has dreamed of them at night, and thought of them in his working hours to an almost absorbing extent, and to-day he is still a student, believing that there are many unexplored regions, and much room for the deepest thought, even on the practical part of this pursuit.

In the first few years of his apicultural study, Elisha Gallup, then living in Iowa, gave him by letter much practical instruction, which, together with Gallup's articles in the different papers of that time, so grew into his life that he went by the name of "Gallup" among bee-keepers about him for several years; and to day he is often heard to say that there never has to his mind been a greater man in the realm of bee-keeping than E. Gallup. Gallup in his private letters laid great stress on good queens, claiming that around the queen centered all that there was in bee-keeping, which has caused the subject of this sketch to study along the line of queen rearing to a much larger extent than any other part of this interesting pursuit, and it is believed by him that much of his success as a honey-producer has come from this, and his ever-anxious care to get the hive filled with brood at such a time that there would be multitudes of field bees at the opening of the honey harvest. In 1870 Mr. D. wrote his first article for publication, at the request of W. G. Church, editor of the *Apiculturist and Home Circle*, published at Mexico, Missouri. Although a poor penman and scholar, he received many encouraging words from Mr. Church regarding his articles, which gave him confidence, so that to-day there are few who write more largely about the "little busy bee" than he. The rest of his bee-keeping life is familiar to all the

readers of the C.B.J. and other bee-papers, for Mr. D. has never done "anything in a corner," but, on the contrary, has given all of his success and reverses, together with the most of his plans and methods, to the public as freely as they would to his family, always realizing that it was largely through the philanthropy of others that he has attained the success which he has achieved

Wired Frames Again.

A REPLY TO MR. HOLTERMANN.

It is to be hoped that the "friendly laugh" that Messrs. Holtermann and Gemmill had, was over a pun on my name, rather than over the idea of any one in this age advocating and using wired frames. There are no "lives" lost, however, for although I have "turned up," I have not yet turned over. Possibly these gentlemen may think it folly to do so, but I am of the opinion that the majority of leading bee-keepers advocate and use wired frames. Of course Mr. Holtermann takes Gleanings. Wonder he does not "laugh" at the editor for bothering his head about batteries with which to imbue foundation in wired frames by electricity. The editor seems to have a "level head" though, and so takes valuable space to consider this plan. Mr. Holtermann is correct when he sees no use in discussing this subject further, not, however, (I would say) because so few approve of wired frames, but because so many do.

G. A. DEADMAN.

Brussels, Ont.

Preservation of Combs for Future Use

IN my opinion the best way to preserve empty or combs partly emptied, when not in use, is as follows: Fill a good hive with them, and put on a top storey, fill it also, and stack them up as high as you may wish, have them closed tightly so that no water or millers can get in, put them in a dry place, and in this manner they will keep as long as you may wish to keep them. I have tried a great many ways, and find this the most simple and easiest, and I think the best. Providing there are no moth eggs in the combs when put away, there will be no trouble with them.

W. E. WELLS.

Phillipston, Ont., June 2nd, '92.

Mr. A. Doolittle, of Severn Bridge, writes us "I have had very bad luck with my bees during the last winter. Have lost my entire stock which consisted of 14 colonies."

FOR THE CANADIAN BEE JOURNAL.

The Production of Extracted Honey.

SECOND PAPER.

IN order to have first-class [extracted honey, well ripened in the hive and to extract only from combs not occupied by the queen (as advocated in my first paper), it is essential that your hive should hold at least twelve frames, of the simplicity or Jones size. If it will hold from sixteen to twenty, then so much the better. These frames may be either in a one-storey hive or a two-storey, when half [the number would be above. Whether you are keeping bees extensively or not, there is an advantage in having both kinds. I do not mean hives taking different size frames, but single and double-storey hives taking the same size. I may explain my reasons for this in some future issue of this journal. Now, although I would advise and use nothing smaller than a sixteen-frame hive, yet, as there are a large number in Canada using a twelve-frame hive, such as you, Mr. editor, originally made and sold, I will give what I believe to be the best way of managing such in the production of extracted honey. My first colony of bees was in just such a hive, and I was advised to take my surplus honey from the back end and confine the queen by means of a queen excluder zinc division board to the front. The better plan is just the reverse of this, viz: Confine your queen at the back, and place your frames to contain the honey to be extracted at the front. The advantages of this plan are clear. The bees, in order to reach the brood and queen, have to pass under or over these. They, true to their nature, do not approve of these being empty, and therefore set about having them filled. I will explain more fully. I will presume that your hive contains (at the beginning of the white clover bloom), eight frames of brood. If your colonies all average this, I consider they have wintered well. Some may contain more, which can be given to those that have less. You then place four frames of brood with the queen at the back of the hive, and in front of these a well fitting, queen excluder, perforated division board. Next to this, three empty frames from which to extract, and in front of these the remaining four frames of brood. You have now three frames for honey right in the centre of the brood chamber. As soon, therefore, as your colony requires more room, remove the four frames of brood next to the front, and make a nuclei beside the hive from which they were taken. This should be done in at least ten days from the time the queen was

excluded, as in many instances they will set about rearing queens. These queen cells, if not desirable, should be destroyed, and you can give them a cell from your best colony. You have now room in your former hive for three more empty frames which should be placed nearest the queen—the other three can be brought to the front. I may explain that although you formerly had space sufficient for eight frames of brood 1½ from centre to centre, yet for combs from which to extract it is not necessary nor advisable to place them so close together so that the six will take the place of eight brood frames. You now extract from these as often as necessary, but if you want first-class honey allow them to be about one-half capped. If these six frames will not accommodate the honey flow so as to allow for this, you might place sections over the four brood frames, and have a queen excluder beneath. There will not be room for many, but sufficient to allow your extracted honey to ripen. As regards swarming, should such occur, you simply lift out the four frames of brood, and the queen, not being able to escape, will be there. You cage her, and place her with four straight frames of comb or foundation in the place of the four frames of brood taken out. The swarm not finding the queen will return. When they have done so, the queen is allowed to run down between the combs. The four frames of brood and queen cells can be given to the nuclei previously mentioned, first destroying or removing the queen cells, unless you wish to save them. I might say, that while the swarm is in the air, it is a good time to take out the honey frames also, if ready, and replace them with empty ones. These can then be extracted at your leisure. If you want more bees and less honey confine the queen on more frames. If you want to prevent swarming, simply anticipate the swarm by exchanging the frames of brood for empty frames, as advised for natural swarming. If you want to leave home for a few days you are safe in doing so, by first removing any cells on the four frames occupied by the queen. If you should leave them for a couple of weeks and they would swarm two or three times and become disgusted with the queen for not coming in, and they decide she "must go," then it is an easy matter to examine the four frames on your return and exchange them for empty ones and a laying queen, or remove cells and give a queen. I will reserve for another issue the production of extracted honey with the "long idea" and two-storey hives.

G. A. DEADMAN.

Brussels, Ont.

Comb Foundation.

(Concluded from p. 96.)

WO Obtain a Stock of Spare Combs.—This is coming to be regarded as a necessity in every apiary of any size. Such combs are of the greatest use, as we have seen, for giving to new swarms, and they come in handy at the close of the season for giving to lots of driven bees. They are also the mainstay under the extracting system, and doubtless the magnificent reports of yields from single stocks which we regularly receive from America owe their origin, or, at least, their credibility, to the well-known use the Americans make of old combs. It is quite possible, of course, to start the extracting system with foundation alone; but, besides the extra care required in handling the newly built combs, there is always considerable delay while they are being built out. Beginners may commence by storing away all combs that can be removed from the stock hives in autumn, and, instead of retaining these next spring, give comb foundation. We prefer comb foundation to old combs at this season for various reasons, only, as the giving of them usually forms part of the operation known as 'spreading the brood,' extra precautions must be observed. They should only be given when the bees are closely covering all the combs they already have, and only in conjunction with an income in honey or syrup feeding. Combs thus obtained are eventually the best for all purposes. They seldom show any trace of sagging, and, being usually bred in quite up to the top bar, are throughout of equal strength. Here we would caution beginners in extracting combs that have only been partly bred in. On turning these, even at a moderate speed, in the extractor, they will often be found to give way, while the comb on the other side of the cage, that may never have been bred in at all, will stand the ordeal. The break takes place exactly along the junction of the portion bred in, and is the result, we suppose, of the two portions yielding unequally to the centrifugal force.

At times in early summer it is possible to get more sheets drawn out in a hive than the bees are able to use for the little honey coming in, or the queen to furnish with eggs. In such times it is a good plan to remove the sheets inserted next the outside after twenty-four hours, replacing them with fresh sheets. These partly worked combs are as good as any for swarms.

An addition may also be made to the stock of worked combs by extracting hives that have swarmed three weeks before, and replacing the

combs alternately, or even entirely, by foundation.

We do not advert to the method of using combs newly drawn out in the body of the hive for cutting up and inserting in sections, except by way of warning. It is claimed for such combs that they are thinner than those drawn out at first in the sections themselves. This we not only question, but from careful observation deny. There may be some truth in it when no special super foundation is used, but we should never use yellow brood foundation in supers, however worked out. It always betrays itself.

When asked as to the desirability of using full sheets in brood frames, unhesitatingly we say yes. Every expert knows now very generally all comb built out below the strips of foundation is drone comb, and it is poor policy to save a little expense in foundation and lose it ten times over in consequence of unlimited drones. If from three-eighths to half an inch be left clear at bottom, and even less at the ends of a sheet, the bees will readily contrive to build quite enough drone cells to meet all necessary ends. The observation also disposes of queries as to the use of drone-cell foundation.

Shall we use full sheets of foundation in sections? That is a question depending so entirely on the nature of the foundation used that we rather incline to err on the safe side, and say no. As we make our own foundation, and know just how it works, we are not afraid to fit sections with it, the season being favorable. But still we should, and do, keep on the safe side by using starters from three-quarters of an inch to one and a half inch deep. The occasion on which we feel safe in using full sheets is when we require to place our supers on a hive some time in advance of the honey season. There is then abundant time for the bees to make the best work; but during a glut of honey the work is too hasty to be so well done.—From an article by the late Wm. Raitt.

FOR THE CANADIAN BEE JOURNAL.
Punic Bees at Medina.

WHAT THE REV. L. L. LANGSTROTH HAS TO SAY OF THEM.

HAVING had, for the first time, an opportunity of seeing the so-called Punic bee in the piary of Mr. A. I. Root, I will give my impressions of it, formed from what information I could procure from the apiarist, Mr. Spafford, who has the care of Mr. Root's bees.

The single colony in the apiary was far from being strong when put into winter quarters. At the present time, June 4, they are much stronger in bees and brood than any other colony that

last season was of about equal strength.

I expected to find them quite dark—much darker, indeed, than the common so-called German brown bee. Nothing, however, in their color would have suggested to me the idea that they were not ordinary black bees, nor did they seem much if any different in size from that bee. Of course, there were some bees in the colony with Italian markings: but these were evidently strangers which had intruded themselves upon the Punic, as all the young bees appeared to have the same markings.

When opened the first time, and carefully looked over, the queen was not found. The bees were much agitated, and acted almost precisely like ordinary black bees—racing backward and forward on the bottom-board, and over the sides of the hive. A second search for the queen was equally unsuccessful. This morning June 6, the weather being as favorable as it could be, bright, warm, and calm, with the help of Mr. Spafford, and without any assistance from Earnest Root, who wished me to give my own impressions without any suggestions from him, I carefully examined them again. I gave them sufficient time to fill themselves with honey before the combs were lifted out. The same agitation which I noticed on Saturday, I noticed again—the bees running from one side of the bottom-board to the other, and evidently acting, as nearly as I could judge, much like black bees. We took out the frames and examined them at least three times before we could find the queen. Four years ago, in the apiary of Mr. James Heddon, of Dowagiac, Mich., I saw more than a dozen hives opened, and the queens were found. I should say, in half the time that we spent in finding this one queen. She was noticed near the bottom of a frame, evidently frightened, running around the corners, and seeking in every way to hide herself. In this respect she seemed to me to act like an ordinary black queen. As to the bees, they were not as scary as I have frequently noticed the blacks to be. When a comb was lifted out they did not string out from the bottom of it and drop upon the grass, ready to crawl up my pants, as is so common with the black race.

Now as to the color of the queen. She was not nearly as dark as I expected her to be. I know that I have seen many imported Italian queens darker than she was. On a mere superficial observation one might have declared that we had here nothing but common black bees: but a more thorough examination suggested that they might be a cross of, say, the black with

some other race. The color of the queen might again suggest that the Punic were a cross between the black and the Italian races, as the so-called hybrid Swedish clover resembles in many respects the red and white clover, seeding in the first crop like the white, and sending up many stalks of blossoms, like the red, the size and color of the bloom being a beautiful compromise between the two kinds. Now it is quite supposable that the Punic, so-called, may be a cross between the black and some of the yellow races, and may have been, like the Morgan horse, the starting of a race of bees possessed of uncommon and valuable peculiarities. We know that that Morgan sire so impressed himself upon his progeny that even now, after many generations, there can easily be seen in Morgan horses the type of their great ancestor. The question then arises, How can we decide that this bee is worthy of propagation? It evidently has some of the bad qualities of the black bees, such as its scary nature, and the difficulty of finding the queen. I could not, on so short an observation, decide whether it had the cowardly nature of the black bee: whether in nuclei made of this race we should find them so easily discouraged as to "skeddaddle" on the first appearance of adverse circumstances. And, again, it is impossible, from so slight an observation, to know whether, like the black bee, it is a natural-born robber, causing often the most trying difficulties in the management of an apiary. Nor could I tell whether, when an attempt should be made by other bees to rob it, how brave a defense it would make. We all know that the black bee is by nature such a coward that often, when attacked by great forces of its own or other races, like the dog that drops its tail in the fight, and is soon a beaten dog, or the cock that runs, after a few exchanges of blows, it will give up the battle and suffer itself to be robbed of every thing; or even, like the black race, join forces with the robbers; and rob their own hive. If I had only a single warm day which I could spend in observations, I could easily, in ways which I have not time to suggest, decide these points.

Now, as to the conclusion of the whole matter. I would not advise any one to attempt at once to supplant the good races of bees which are in his apiary, with this race; nor would I so condemn it as to say that nearly every enterprising bee-keeper ought not at least give it a fair trial. In a single season, if the season is a favorable one for honey, I believe all the disputed points will be settled, and no one would rejoice more than myself if it should prove, like the Morgan horse the progeny of an improved and improving race of bees.

*I should have, been much better pleased if Mr. Root had had a single colony of pure black bees.

My readers will bear in mind that these observations were made upon only a single colony—that this colony might not have been entirely pure, and that I had not any blacks with which to compare it.

L. L. LANGSTROTH.

Dayton, Ohio.

We think we only voice the sentiments of every bee-keeper in the world when we say we are pleased to receive the following from the Rev. Father Langstroth as we are always delighted to have his opinion in reference to any question pertaining to bees. Although the C. B. J. has now changed hands and I am not interested in it directly, beyond the interest I have for bee-keepers in general, I can assure Father Langstroth that we feel very grateful for his kindness in favoring the C. B. J. with his valuable articles. We think friend Langstroth is quite correct when he says there is a probability they are a cross. We do not see how any person in England could possibly breed pure bees surrounded by hundreds of colonies and we believe the Punic bees as they are called are not superior but inferior to those we now have. Our esteemed friend Mr. Cowan, Editor of the B. B. J., will give us all the information on the Punic bees that is required, as his visit to Africa will enable him to give us much valuable information in reference to them. In the meantime we would not advise any of our friends to introduce the African bees into their present apiaries. We fail to see what advantage there would be in introducing African black bees among our improved strains and the Hallamshire bee-keeper who sent these bees out as such a wonderful race has made some statements that we feel would be hard to reconcile with facts. For instance he stated, that when a queen died or where a quantity of them were put on combs, without a queen in other words, the loss of a queen in the absence of eggs, brood or larvæ, the bees would commence laying their own eggs and raising themselves a queen from what we ordinarily termed fertile worker eggs. Such statements as these lead me to believe that the persons making them are not conscientious in so doing

OF THE CANADIAN BEE JOURNAL.
Winter and Spring Management--Foul Brood--Clipped Queens.

I AM a diligent reader of your paper, but I have not had the same measure of success as I had before I read so much, and begin to feel like one of my neighbors, who says that before he commenced reading up bee journals he had lots of bees and lots of honey, but after reading and endeavoring to practice what he read, he lost all his bees.

I have tried cellar and outdoor wintering. Some winters the cellar answered well—other winters not so well. Last winter all I kept outside packed with leaves in clamps came through all right. Put eight in a neighbor's house intended to be frost-proof, lost four of these, whilst some of my neighbors who left them on the summer stands, without the slightest protection, had as good success as I had, and their bees built up better through the spring, and commenced to swarm freely three weeks earlier than mine. I left mine in the packing cases until the 1st of June, and fed most of them more or less to stimulate brooding, but my neighbor's, who had no protection, neither in winter nor spring, and no feeding, built up through the spring much more rapidly than mine.

I am quite satisfied that Mr. McEvoy's plan of preparing the bees with full combs of good capped stores is the safest and best method of preparing for safe wintering; and if bees have plenty of good stores they will come through whether put into packing cases or not.

I have been battling with foul brood for several years, and find it a very difficult trouble to master. I have tried the method proposed by Wm. McEvoy, and I cannot as yet report success. My yard is now pretty clear of it, but if it should make its appearance during the summer, I will destroy every colony tainted with it in the fall, and only attempt to winter good healthy colonies.

I have little experience with clipped queens, and until I am more fully convinced of the advantages there may be in the clipping business, I will let them have their wings. I never had a swarm to leave my yard without lighting, and it is a great pleasure to see them clustering so snugly on a branch, and then if well sprayed, there is no trouble in hiding them. I bought some clipped queens a year ago from friend Deadman, of Brussels, and a swarm from one of these came off somewhat unexpectedly, and being from home, my family was watching them, expecting them to cluster on some tree as usual, and not having seen them issue, didn't know from which hive they had come, but instead of clustering they soon returned to the hive. They then discovered the queen near the front of the hive, and lifting her up gently let her return; also next day being dark and showery, no further attempt was made at swarming. On my return the second day I at once examined the hive to find a young queen in full possession, and my fine clipped queen lying dead at the bottom of the hive. My conclusion is that clipped queens may be managed in a large apiary where it will pay to sit and watch, but for small apiaries they would be a nuisance.

Linwood, June 28th, 1892.

A. BOOMER.

(See comments in next issue.)



HOLSTEINS.

FOR THE CANADIAN BEE JOURNAL.

Preservation of Combs for Future Use

THIS is a good subject, and one that is being pretty well handled in the C. B. J. at present. Still there is room for further discussion. Now, I consider a "superfluous quantity of combs the best stock a bee-keeper can have in his apiary. The subject, as I understand it is, "How to take care of them;" for my part, I find it much easier to care for them than to get them. The plan I have followed during the last five or six years is as follows: Just as soon as I am done extracting, the combs are returned to the colonies to be cleaned by the bees, and at this time all combs in the brood chamber not required by the bees to winter on, containing small quantities of honey, should be removed and extracted; or uncapped and returned with extracting combs to be emptied by the bees, and there they remain until I wish to prepare the bees for winter; by this time all the combs will be dry and clean. My super and brood chamber are same size and made exactly alike. I take a hive or super, place it on a bottom board, fill with comb, spaced about one inch apart, or a little less will do, and another one on top, and so on, until there are three storeys; I then put on a hive cover and close all entries so that no bees or mice can get in. I let them stand in this way in the yard all winter. None of the hives will fit so closely that there will be no air to ventilate the hives. Some have asked me if the frost does not crack the combs, but my experience has been that it does not, but remember you must not handle them in cold weather; those that have pollen in them seem to be just as fresh in spring as when put away. As for moths, I have never had any bother with them.

A. E. SHERRINGTON.

Walkerton.

FOR THE CANADIAN BEE JOURNAL.

Honey, Swarming and Brood Chambers.

DEAR SIR,—The clover honey season is upon us, but where is the honey? There is around Branchton, where my bees are, a considerable amount of natural clover; it looks fine and thrifty, but the honey does not come. The bees bring in considerable clover pollen, but carry themselves light so far as the sweet itself is concerned. Owing to bad catches the last two seasons, a field of cultivated clover, red or alaike, is a rare thing around here.

The bees are getting just enough of a dark honey and honey-dew to keep up brood rearing; but there is no great effort required to prevent the swarming fever. The theory that swarming takes place immediately on sealing of the first queen cell, gives a rule by which the bees are no longer governed in these unfavored parts. They

seal the cells, and await further developments till the time of hatching. My only two cases of preparation for swarming this season are after that fashion. From the first I took the old queen away and placed her elsewhere, just as the first young queen hatched out, and the latter now reigns in the hive midst evident contentment. In the other case I purpose to follow a similar line of procedure, as with so little honey coming in the swarming fever don't amount to much. Were there lots of honey it would be entirely different.

G. A. Deadman, in his article on "The production of extracted honey," in the C. B. J. of the 15th inst., refers to the evils of extracting from the brood chamber, and under ordinary circumstances I think his conclusions are quite correct, and that extracting from the brood combs should be avoided; but where there is honey-dew around either in spring or fall in these northern latitudes, it will be necessary, by whatever process it is managed, to see that it is not left on the combs on which the bees are to be wintered, else the following spring there will be an unpleasant necessity for guessing at the cause for so many weak and empty hives.

Yours respectfully,

R. W. McDONNELL.

Galt, Ont., 22nd June, 1892.

The theory that bees swarm as soon as they get queen cells capped over, if weather is favorable, is correct; but there are exceptions to almost all rules in bee-keeping. It seems that you have had two cases where the old queen remains in the hive until young queens hatch out. This indicates the old queen was about to be superceded—and in that case it is usual to allow her to remain until after the young queens hatch, and, in rare instances, long after that until she dies; but when the weather is favorable and the colony strong, the next day after the queen cell is capped over they will usually swarm—sometimes the same day—and we have had them swarm before the queen cell was capped—have also known them to swarm when no preparation in the way of queen rearing appeared. The lack of honey seems scarcely likely to be the cause of your bees not swarming when queen cells were capped, as it is not an uncommon thing for them to tear down queen cells if they decide not to swarm; and you removing the old queens after the young ones had hatched, indicates that she was about to be superceded.

FOR THE CANADIAN BEE JOURNAL.

The Honey Flow.

DOTWITHSTANDING the late spring and the cold weather we have had during the past season, bees in this neighborhood are in excellent condition; up to the time of fruit bloom they did not appear to do much owing to the backward weather and consequent lack of honey, but there has been an unusually good flow from that source this year, and examination shows a number of hives to be filled with bees and honey, and preparation for swarming going on. Not wishing any increase, second and top storeys with empty combs were adjusted, in order to give plenty of room for the storage of honey, and to prevent swarming. So far, the prospects for a good honey flow are bright. White clover is in splendid condition, and will yield a large quantity of honey if we can judge from the amount of blossoms to be seen. Basswood and clover are our main sources here, and it depends on the weather for their secretion of nectar.

THOS. PATTON.

Westover, June 20th, '92.

FOR THE CANADIAN BEE JOURNAL.

Report from St. Thomas.

APRIL was very cold, dry and backward, but we have had the wettest May I have ever known. Bees had only about four days on apple bloom, during which time some of the colonies stored from 25 to 40 lbs. of honey. I have felt doubtful when I heard of bees storing honey in top storeys at the time of apple bloom, but I do not wonder that they were successful. I did not get my cellar bees out until the last day of April. I know they were not in shape to store honey in top storeys from apple bloom, but will be all right for the clover. I wintered out of doors this winter some 210 colonies, and wintered them perfectly. I have been experimenting with outdoor wintering, and I think I have struck something new and good; and will try and give it to your readers in another article before packing time comes again, that is, if they do not tell all about it before I get started. I have sold since last fall 170 colonies, which leaves me nearly 200. They are situated in three different apiaries, and I intend to manage them alone. Will let you know later how I succeed.

JACOB ALPAUGH.

St. Thomas, June 3rd, 1892.

We shall be pleased to hear from you in reference to the new system you speak of. We are pleased to note your success

in wintering; the wintering of bees out of doors will likely receive more attention in future than indoor wintering. Although many are able to pack and winter very successfully outdoors, yet there are many more little points which tend to make outdoor wintering much more successful that have not been brought out yet, and you being a very close observer and experimenter will no doubt bring out some of them. We hope you will give us the desired information as early as possible that our readers may fully understand it and prepare in time for the work.

FOR THE CANADIAN BEE JOURNAL.

SIR,—For the purpose of getting some white honey, (basswood and clover), which is difficult to obtain in this district, I propose to hive my swarms in a hive arranged as follows: A single brood case of the Heddon reversible hive, with case of sections above, and queen-excluding honey board between, the sections and brood chamber being each supplied with full sheets of foundation.

The course commonly recommended, and as I understand it, is to hive swarms on a double case brood chamber, and take your surplus honey in sections, if you can get it, after you get both brood cases full. This is done, I understand, in order that there may be an abundance of safe wintering stores.

Now I desire to learn whether it will be possible to winter with any chance of success by confining the bees for the whole season to a single (or half) brood case, and putting them in winter quarters in that alone, feeding in the fall if necessary to give the bees all the honey they can store in it, and keeping it in a repository where the temperature is kept at the proper point. Or would it be better to double up the colonies in the fall, and winter them in double brood cases. Your answer on these points will greatly oblige

A SUBSCRIBER.

It depends on the size of your colony. A very large colony would scarcely winter as well in one brood chamber as in two; but if your colonies are of moderate size one brood chamber is sufficient. When feeding in the fall we would advise you as soon as you remove your sections and the honey flow ceases, to feed sugar syrup and honey mixed. If you have not extracted honey to mix in with the sugar syrup you might feed all sugar syrup, but by putting one

pound of honey to two pounds of sugar it assists in preventing granulation. A large colony would require one brood chamber sealed. Where you use two it gives the bees more space below, and gives them an opportunity to work in any direction from the centre of the brood chamber, the frames of the upper and lower being sufficiently far apart to admit of the free passage of the bees to any part of the hive. You should not wait until cold nights before you commence feeding—the latter part of August or first of September at the latest. One important point in feeding is to feed as rapidly as the bees will take it up until they have sufficient. Feeders that hold from ten to twenty pounds and enable a strong colony to all work at it so they may store it in one night are the kind we prefer.

WILL some one kindly tell me the cause of bees clustering on the outside of the hive box. I am a new beginner, so do not understand much about them. Thought perhaps they were going to swarm out. It is now about 12 days since they first came out. One side of hive is nearly covered.

Sydney Centre, N. Y.

J. S. ROBINSON.

They cluster out from various causes. When there is no room in the hive for them to store honey in, even although there is plenty of honey in the flowers, they will cluster out on the hive, and wait until they get ready to swarm; but it is no indication that they intend to swarm when they do so—as we have known bees to remain clustered on the outside of the hive for days, when there was no honey in the flowers, and it was so warm that if all of them remained in the hives the combs would melt down. There is an innate principle in bees which teaches them that the temperature of the hive should not be above a certain point; and in order to keep it cool, well ventilated and healthy, bees stay at the entrance and fan with their wings, thus driving the air in, others stationing themselves about the inside of the hive, carrying the current of air to various points. There is usually in any strong colony quite an army of bees employed for ventilation. It is not good management to have a lot of bees hanging outside of the hive except in very extreme cases. A shade board preventing the sun

from shining directly on the hive is a good thing to use. Give plenty of room to allow the bees to work to their best capacity, instead of idling away their time during the honey flow. One very important point in bee-keeping is, to have them all gathering honey when there is any to be had; and in order to do this they must have sufficient room in the hive to store it. Second, third, or even fourth storeys should be added rather than allow bees to cluster on the outside of the hive until they get ready to swarm.

Preservation of Combs for Future Use.

FOR COMPETITION IN C.B.J.

BUT little need be said on this subject to let the reader understand the precautions necessary in storing combs so as to keep properly, and to be of use later on.

All honey should be extracted and the combs placed in supers over strong colonies to be licked off. A good time to do this will be before the clover yields freely. They should be given to the bees in the evening, and will most likely be ready for removal next morning. They can then be placed well apart in empty hives; for instance, hives containing nine or ten combs where the bees are at work on them should have at least two less when stored for preservation, or in other words, the further you leave them apart the safer, and should not if possible be nearer each other than one inch.

Hives containing said combs want to be kept in a cool dry room, where neither light nor air will harm them—in fact they are the better if the latter, but keep all doors and windows screened, especially at night, and should there not be hive storage enough the construction of a rack to place the overplus in should give the apiarist of any ability but little thought.

Would not advise keeping combs with much pollen in, as moths will breed in them more readily than in clean comb; but suppose they should escape destruction in that way, you will find that after a while said pollen will either ferment and protrude from the cells or dry into a crisp. In either case it is unfit for use, and when given to the bees the little laborers will throw out all they can, and what they cannot remove will be waxed over to insure the non-destruction of honey or pollen which may be afterwards placed in such cells. By all means, break up those combs of that nature—wash well in warmish water, and render into wax which will keep as long and perhaps longer than you wish.

D. CHALMERS.

Poole, June 8th, '82.

FOR THE CANADIAN BEE JOURNAL.

Comb Foundation.

F late not a little has been written on this subject, but as it is not yet fully exhausted, I hope the readers of the C.B.J. will bear with me whilst giving my observations as to the most perfect make and proper way of using comb foundation.

Let us first consider this impress of ocell bottoms made on thin sheets of wax by machines made for that purpose. Of these, so far as I am aware, there are only the two principles, viz: book dies and the roller mill.

Through close observation, I have years ago come to the conclusion that the book dies or Given Press is the more perfect of the two, and in a few words hope to be able to convince the most sceptic that there is truth in my assertions. It has not been my lot to be a manufacturer of comb foundation, nor have I ever seen a sheet of wax run through a roller mill, but would like to ask those who have it, if the sheet is not considerably longer when it comes out than before it went through. It must be, and if so how can it make a foundation for a perfect cell? True, the dies could be made a little oveled as it were to help obviate this difficulty; but that would only be guess work, as wax at times will be run through in a softer state than others, and the softer it is the larger will the sheet be when it comes out. But take on the other hand book dies of proper construction, and the formation of the ocell will be complete, simply because the sheet of wax will come out the same size as it went in.

Secondly, we wish to know which way foundation is the strongest so as to sag the least when the bees are working it out; hold a sheet of it to the light and you will observe that one way the walls at the sides of the cells will be perpendicular, whilst those above and below will be zig-zag, but turn the sheet one-quarter around and the order of things is reversed.

My observations lead me to believe that the former is the proper way to use comb foundation, for if bees are allowed to build their own comb throughout, they will in the majority of cases build in that way.

Thirdly, suppose we have perfect foundation, and placed even the strongest way in the comb frames, it must be in very shallow frames if it doesn't sag somewhat when being drawn in very hot weather, and how is that to be prevented? We hear many say wire, wire, and so says the writer.

It is the wish of every one of us that "when ascending the hill of prosperity we may never meet a friend," but it more than surprised me

this spring to meet in the C.B.J. such a man as Mr. Jacob Alpaugh coming down the hill of bee-ology on the wiring question.

I have become a convert to the wiring system, although having held out long against it. My main objection being the supposed trouble it would be to out the combs out of the frames when they required rendering; but I find that that has been only a mote in my eye, as the wires will snap almost as easily when the knife is run along as if they were not there. You have only to use a little care in washing the comb afterwards not to get your hands pricked. I claim that wired frames with the wire properly imbedded in the foundation will give the apiarist an easy mind in hot weather as to the danger of it either sagging or breaking down altogether. Another point is, that when foundation is wired it can be used much lighter than if not, and the lighter it can be used the more perfect will all the cells be when drawn out. Has the reader ever noticed that a comb drawn from very heavy foundation will have quite a few cells seemingly too small for the queen to back into to deposit the egg—if you have not already seen that, watch and you will be convinced that I am correct. There cannot be bees working in every cell at the same time, and if they once tackle a cell they mean to keep it until well forwarded, and in so doing seem to crowd too much wax into the neighboring cell.

It is easily understood that wiring takes a little more time than merely to fasten the foundation to the top bar, but "a thing that is well done is soon done," and the short time it takes extra in that respect is very profitably spent.

D. CHALMERS.

Poole, June 22, 1892.

Industrial Exhibition at Toronto.

HONEY AND APIARY SUPPLIES.

COMMITTEE.—Alderman Orr, (Chairman), Messrs. R. McKnight, F. A. Gemmill and Geo. Vair.

All honey exhibited must be the production of the exhibitor.

The quantities specified in the various sections are the amount of honey on which the award of the prizes is to be made, but this rule does not apply to Sec. 15, in which the quantity is not limited.

Exhibitors selling honey during the exhibition (for which right a small fee will be charged) will not be allowed to make any removal from their regular exhibit, but may have a special supply at hand from which their honey sold may be taken.

Exhibitors offering comb honey for sale will

not be allowed to cut the sections, but must sell whole sections put up securely in manilla or pasteboard boxes or bags, and purchasers notified not to eat it in the building, and in the solicitation of customers no unseemly noise will be permitted.

Exhibitors must not accompany or in any way attempt to influence the Judges in the execution of their duties.

Exhibitors must have their exhibits arranged by the time stated in the general rules.

A breach of these rules will forfeit any prizes that may be awarded.

CLASS 83.—HONEY AND APIARY SUPPLIES—OPEN TO ALL BEE-KEEPERS (AGENTS EXCLUDED).

Sec. 1. Best display of 100 lbs. of extracted granulated Honey in glass.—1st \$10, 2nd \$6, 3rd \$4, 4th \$2.

Sec. 2. Best display of 500 lbs. of liquid extracted honey, of which not less than 250 lbs. must be in glass, quality to be considered.—1st \$20, 2nd \$15, 3rd \$10 4th \$5.

Sec. 3. Best display of 500 lbs. of comb Honey in sections, quality to be considered.—1st \$25, 2nd \$20, 3rd \$12, 4th, \$6.

Sec. 4. Best display of 20 lbs. of comb Honey in sections, quality to be considered, that is to say, clean sections and best filled.—1st \$10, 2nd 6, 3rd \$4, 4th \$2.

Sec. 5. Best display of 100 lbs. of extracted liquid Linden Honey, in glass, quality to be considered.—1st \$8, 2nd \$5 3rd \$3, 4th —

Sec 6. Best display of 100 lbs of extracted liquid clover honey in glass, quality considered.—1st \$8, 2nd \$5, 3rd \$3, 4th —

Sec. 7. Best beeswax not less than 10 lbs. (manufacturers of comb foundation excluded).—1st \$6, 2nd \$4, 3rd \$2, 4th, —

Section 8. Best foundation for brood chamber.—1st \$3, 2nd \$2, 3rd \$1, 4th —

Sec. 9. Best foundation for sections.—1st \$3, 2nd \$2, 3rd \$1, 4th —

Sec. 10. Best Apiarian supplies.—1st Silver Medal and \$10, 2nd Bronze Medal and \$5.

Sec. 11. Best style and assortment of glass for retailing extracted Honey.—1st Silver Medal, 2nd Bronze Medal.

Sec. 12. Best section super for top storey and system of manipulating, product to be exhibited in super as left by the bees.—1st \$3, 2nd \$2, 3rd \$1, 4th —

Sec. 13. Best and most practical new invention for the Apiarist, never shown before at this Exhibition.—1st \$8, 2nd \$5, 3rd \$3 4th \$2.

Sec. 14. Largest and best variety of domestic uses to which honey may be put, prepared by the exhibitor or a member of his household, il-

lustrated by samples of the different things into which it enters as a component; for example, say one or two samples each in canned fruits, cakes, pastry, meats, vinegar, etc.—1st \$8, 2nd \$5, 3rd \$3, 4th —

Sec. 15. For the most tasty and neatly arranged exhibit of Honey in the Apiarian Department, all the honey to be the production of the exhibitor; \$25 of this prize is given by the Ontario Bee Keepers' Association.—1st \$30, 2nd \$20, 3rd \$10, 4th, —

Sec. 16. To the exhibitor taking the largest number of 1st prizes for Honey at this Exhibition, 1892.—1st Silver Medal, 2nd Bronze Medal.

The above is a prize list of the Toronto Exhibition. Our readers will notice that it is very complete, and the inducements here offered should bring out a very large and fine display. The present prospects for the honey crop are good, and we hope that every department will be well represented. In order to post our readers in reference to this matter, we have copied the prize list in full with all particulars. It is the intention of the Managers to expend \$150,000 in beautifying the Exhibition Grounds, and an addition has been made to the ground on the south of the present site where the rifle butts were. We would advise all those intending to exhibit to apply for space at their earliest possible moment, as all entries must be made by the 13th of August.

FOR THE CANADIAN BEE JOURNAL.

Foul Brood.

Is foul brood a resultant of dead brood? In my opinion it is not, else it would be a common thing in every apiary. Has there ever been known a case of foul brood but that the source of the contagion could be directly traced, and has dead brood in a single instance been the cause from which it was traced? From my experience, observation and careful study during the last 25 years, I answer emphatically—no. I do not now refer to the experiments of C. J. Robinson, given some years ago, for they relate to attempts made to cause the disease, but to cases where foul brood has shown itself without any known prior cause for it at the time when found. In my own apiary, wintering, as I have ever done on summer stands, I have found chilled brood and dead brood time and time again without a sign of foul brood. To be sure this proves nothing, but it goes a long way toward making proof; and when not only is it the

case with myself, but with thousands of others, I must ask for something more than mere assertion before I admit that chilled brood, or dead brood, or extracting from the brood chamber, will, in a single instance, cause or produce the disease called foul brood. Some years ago I had foul brood in my own apiary. I had bought some Cuban honey for fall feeding; this I fed to two or three colonies, and the next spring found all so fed were infested with the disease, while others not so fed were not affected. This subject is one that is well worth investigation. I do not desire to reflect on any one—I only desire to get at the truth. I want facts though, not theory—proofs not assertion.

Try it on—let your brood become chilled in the hive as I have done as a matter of experiment, and if the bees are free from the disease on the start, I don't believe you will get foul brood from such cause any more than I have done. Till it is found for a fact by close investigators, I, myself, and I presume thousands of others, will be "doubting Thomases."

J. E. POND.

North Attleboro, June 20, '92.

Reports.

DEAR SIR,—I am a little late in sending you a report of how my bees wintered, but you know the old and oft-repeated adage, "that it is better late than never." I went into winter quarters with 31 colonies, putting 16 into a clamp outside and the balance into the cellar. On April 1st I examined them, and found those in the cellar all alive; but three of those outside dead and one very weak. On April 20 I took the 18 colonies out of the cellar, and put 10 that were in combination hives into outside cases, leaving them there until settled warm weather had set in. The protection thus afforded was of great service, as without it spring dwindling would most certainly have greatly reduced the strength of the colonies—perhaps have caused their entire extinction. As it was, they came out in good shape, and were never stronger at this season of the year. I have not had any swarms, as I have given them lots of room. I desire honey rather than increase. The prospects for a large yield of honey this season are good. I never saw a greater abundance of white clover, and all that is wanted is dry, warm weather to secure a rich harvest. So far, the rain has interfered with honey gathering, but it has no doubt conduced to the immense bloom that everywhere prevails, and if favorable weather now sets in, an abundant crop will no doubt be obtained.

J. CARSWELL.

Bond Head, June 24th, 1892.

Mr. W. J. Brown, of Chard, writes us he has been very busy attending to his bees lately. He

says they are doing well. First swarm issued June 12th—first swarm '91, June 9th.

Wm. H. Norton, Heckston, writes: "I like the C.B.J. very much. It has given me some new ideas, and contains some good points for the novice bee keeper, such as I am. My bees are in good trim at present—wintered outdoors—did not unpack till fine weather—lost none—prospect for honey good."

Qualities of Honey.

ANNIE C. WEBSTER in Wisconsin Agriculturist writes: "The various grades and qualities of honey are dependent largely upon the method of keeping the bees, and of getting them started properly in the spring; but there is another factor entering into the case which is often overlooked. Honey is obtained from a great variety of flowers, and the nectar at different seasons of the year. This is so true that in many sections of the land honey of wonderful flavor and essence is produced simply because fine honey plants abound in great quantities.

The first grade of honey is obtained in the spring of the year, during April and May, and it is made chiefly from the fruit blossoms of trees. Fruit orchards are then the great centres of blooming flowers, and the bees get three-quarters of their nectar from this source. Forest trees are also in bloom, and a great deal of the honey is obtained from this source.

The next distinct grade noticeable is gathered in June and July, and is always of less specific gravity than the former. It is destitute of the rich flavor gathered earlier in the season, and sometimes it is so watery and thin that it will ferment and become sour. Generally, however, it brings a better market price than the early honey, for it is deposited in a thinner and white, comb, which gives it a better appearance. It is generally called white clover honey, and it is principally made from these plants. By many it is preferred to that extracted from the blossoms of the fruit trees, while others consider it much inferior. The first grade, however, is generally spoiled by being mixed with the honey that is made between the fruit blossoming time and the period for the white clover plants to bloom. This is very black and unpleasant honey and it is collected from a great variety of plants

* Secretaries of local associations are requested to forward us, at the earliest possible moment, the dates of their meetings; and when the convention is over, a full report of the proceedings.

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ISSUED 1ST AND 15TH OF EACH MONTH.

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BEETON, ONT.

EDITORIAL.

We are sorry to hear that our friend Mr. Levi Brillinger has been under the weather for some time past, but are pleased to hear he is recovering.

We notice a typographical error on page 50 in issue of C.B.J. May 1st., in an article by Mr. D. Anguish, of Southwold. Instead of reading "I sell," it should be "I see." At Mr. Anguish's request we correct it.

Mr. Tom Cooley, of St. George, writes us: "There has been a great loss of bees in this neighborhood during this spring. I only lost two out of the 14 colonies. My first swarm was on June 15th. My apiary is doing well, and is in excellent condition. I take the C.B.J., and like it very well. Find enclosed a list of names for sample copies of C.B.J."

We are pleased to learn from Mr. Frank Benton, who has charge of the apicultural department at Washington, that there are strong hopes of the Government taking hold of the importation matter, and if possible, getting *Apis Dorsata* from India. We hope while they have the matter in hand they will also get us some of their large bees from Timor Papal, Phillipine and if they will only give Mr. Benton full power to investigate we may rest assured some very interesting and valuable information will be gleaned besides. We hope large quantities of very valuable bees will be added to our present supply.

We notice nine columns in the American Analyst in reference to the adulteration of honey. We do not know whether this has been promoted by Professor Wiley, but it evidently tries to prove that almost all the liquid honey sold in the United States is adulterated. We feel satisfied had Professor Cooke examined many of these samples supposed to be impure, a different report would have been the result. If Professor Wiley's chemical analysis are as correct as the statements he made some years ago in reference to adulterated honey, it simply means that all the honey he examined is pure. Honey varies very much according to the source from whence it is gathered. If Prof. Wiley would go to Michigan Agricultural College and study for a few months under Prof. Cooke he would then doubtless be wiser regarding the properties of honey. He has done the bee-keepers of America a lasting injustice. We do not care to say unkind things about our friends but we have long since come to the conclusion that the Professor is no friend to the Bee-Keeper.

A gentleman living a few miles from Beeton called the other day to inform us he had invented a most valuable improvement in connection with comb foundation, and has applied for a patent for the same. From the tests he has made he is satisfied it will revolutionize the business. He described it to us as follows: "I took cotton cloth, dipped it in beeswax, placed it in the hive, and found that the bees actually made cells from it, and after running it through the machine and testing it, found that a very small quantity of wax was sufficient to make combs that would not break down." After relating his discovery he was not a little surprised when we told him that years ago it had not only been tried by ourselves, but also by many others; that when the great Industrial at Toronto was in its infancy we had exhibited for several years specimens of cloth of various kinds, fine wire netting, tin, wood, paper—in fact everything we could imagine to test this matter we tried—that we had failed with the ordinary cotton after fully experimenting with it. As soon as the bees found a

little cotton fibre sticking up any place they commenced pulling at it and gnawing the combs to get it out, thinking it a moth web; then they commenced gnawing away the combs, and it was not an uncommon thing to find a handful of cotton batting in front of these hives we were experimenting with, built with combs or partially so, with the cloth base in the foundation. What was said of this at the time, we thought would thoroughly post all bee-keepers, but we found out to our astonishment that he never thought it worth while to subscribe for a bee journal, which would have saved him all expense in experimenting and patenting his useless invention. This is another instance showing clearly how blind people are to their own interests. No person can possibly be a successful bee-keeper without taking a bee journal. Those who take several are doubly repaid for their outlay. The valuable information that they receive enables them to save more in time and labor in simplifying their business and cheapening their product. For several years we exhibited The Lord's Prayer, God Save the Queen, and many other curiosities in connection with bee-keeping. We took the best double-calendered linen paper printed on it in large bold type anything we wished, then dipped it in beeswax and put it through the comb foundation mill, then placed it in the hive, the bees would lengthen out the cells and fill them with honey or brood as the case may be. We usually placed them where the bees would fill them with honey instead of brood in order that the comb might be as bright as possible, then by holding this comb up to the light you could read at the base of the cells the inscription. We would suggest that some of our bee-keeping friends take either this linen paper or what is called tracing linen, which is perhaps a little more expensive, but will stand more rough usage and answer the purpose better, and on it have a good picture of Rev. L. L. Langstroth, with a short sketch of his life, then dip it in bright clear beeswax, pass it through the mill making a slight impression on it, hang it in the hive and have the cells drawn out full length; take any honey out of it that may be in the cells, and have the comb on exhibition at the

World's Fair. Why not have a fine large picture of George Washington, also Christopher Columbus? Sections of comb honey might be filled in a similar way, so that when the honey was eaten off down to the base of the cells the pictures of these gentlemen would be in the centre of the section. Perhaps some of our ingenious friends will be able to photograph on nicely capped comb honey the picture of the purchaser or producer, or something that would make it attractive, and bring our industry more prominently before the public in this way.

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A General meeting of the members shall be held once a year and shall be known as the Annual meeting.

Every Affiliated Association shall receive an annual grant out of the funds of this Association. The amount of such grant shall be fixed by the board from year to year.

Each Affiliated Association shall be entitled to the privilege of two representatives at the meetings of this Association in addition to those who are already members of this Association, and such representatives shall be entitled to all the rights and privileges of members of this Association.

Any County or District Bee-Keepers' Association in the Province of Ontario may become affiliated to this Association on payment of five dollars, which shall be paid to the Secretary on or before the 1st day of May in each year, but every Local Association, so affiliated, must have on its membership roll at least five members who are also members of the Ontario Bee-Keepers' Association at the time of its affiliation and must continue to have a like number of its members on the roll of this Association while it remains in affiliation.

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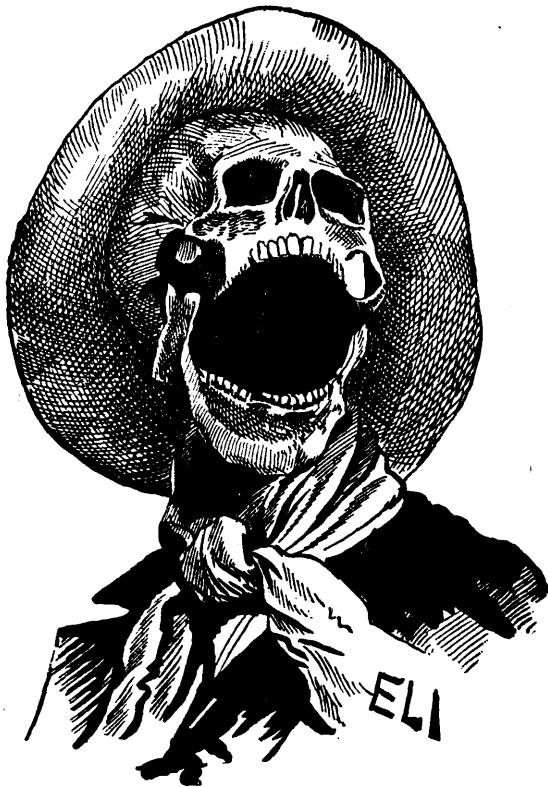
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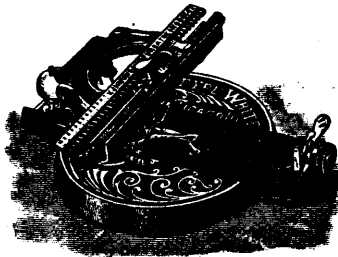
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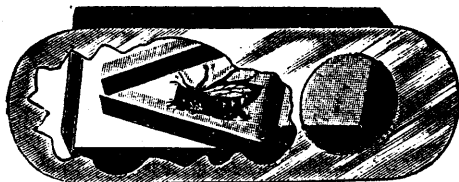
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F. A. GLADWIN.

M. E. HASTINGS,

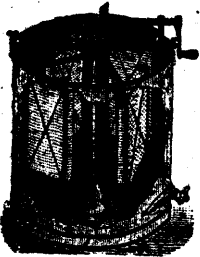
UTICA, N. Y., October 21, 1892.

Dear Sir,—Your Lightning Bee Escape does away with the hard, disagreeable work attending the harvesting of honey, being very much easier than the old way. In my opinion it is the best Escape yet produced

Truly Yours,

B. E. FOSTER.

HASTINGS' POSITIVE REVERSIBLE EXTRACTOR

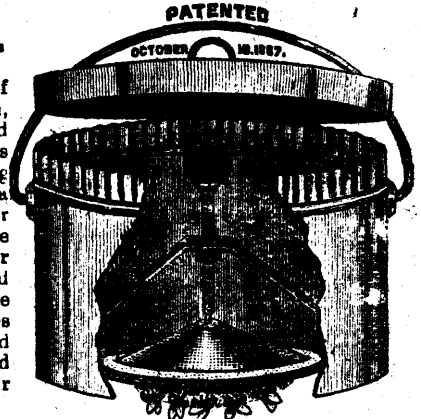


The above illustration shows a New Extractor now ready for the market. The principal features are that it is positive in the reversing of the baskets, as they all move at once without either the use of chains or reversing of the crank.

It is not necessary to turn the crank more than one way in extracting; but if desired it can be turned either way. It is pronounced by experts to be the most desirable Reversible Extractor yet produced. When ordering send a sample frame and price will be quoted on either 3, 4, 5 or 6 frame Extractors.

Hastings' Perfection Feeders.

These Feeders are now made with a capacity of two quarts, and the price is reduced to thirty cents each, or \$3 per dozen, by express or freight. When ordered by mail add ten cents each for postage. These Feeders can be re-filled without moving the Feeder, or disturbing the bees. The letting down of food is regulated by a thumb screw. It is easy to regulate—either a quart or a spoonful can be given in a day or an hour, as may be required, and where it is most needed, over the cluster of bees. For rapid feeding two feeders may be placed over the bees at one time, not a drop of food can be lost, and the robber bees cannot get at it. Special rates to dealers. Write for prices. Supply dealers furnished at wholesale prices. An electrotype will be furnished free to dealers wishing to advertise Feeder in their catalogue.



M. E. HASTINGS,

Patentee and sole Manufacturer, New York Mills, Oneida Co., N. Y.