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CANADIAN BEE JOURNAL

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NEW SERIES
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BRANTFORD, ONT., FEB., 1899.

WHOLE No.
408

In the last issue of the CANADIAN BEE JOURNAL a notice was given of a Union Bee-keepers' Convention to be held at Brantford beginning at 1.30 p.

m. Thursday, February 9th, closing on Friday, Feb. 10th. From the communications received, it will be made up largely of bee-keepers from Brant, Norfolk, Haldimand, Oxford and Perth. Several others are, however, likely to be present. There will be no business to do aside from electing a chairman and the entire time will be occupied with profitable discussion. Every one coming to the convention will be at liberty to bring forward questions of interest to him. No better opportunity has offered for gaining useful information. It is also the intention to take a photograph in a group of those attending the convention and to make an engraving to reproduce in the CANADIAN BEE JOURNAL with the names of those attending.

The Hotel Belmont will be headquarters. The regular rate is \$1.50; to those attending the convention \$1.00 per day will be the price. The house is very comfortable, being largely patronized by commercial and other men.

Arrangements have been made with the Grand Trunk, Canadian Pacific, Michigan Central, and Toronto, Hamilton, and Buffalo Railways for reduced rates, providing fifty attend the convention. Any one coming must ask for a Railroad Certificate when purchasing the ticket to

Brantford. If 50 come on the railroad the return ticket will be one third single fare, if less, two thirds single fare. There will be a number of ladies at the convention.

All ladies and gentlemen are cordially invited.

* * *

R. L. Taylor is conducting a very interesting Department of Criticism in the Review. He hits right and left and gets

hit in return in a way

The Aroma of that would often shock
Honey. our gentle, peace at any

price (even progress)

loving, Ontario Bee-Keepers. In a recent number he has the following.—

“The editor of Gleanings and Dr. Miller are having a discussion of the question whether comb imparts a flavor to the honey it contains. The editor thinks it does and as a proof cites the fact that so many prefer comb honey, and suspects that those who prefer extracted honey do so for convenience in eating. He says further ‘only yesterday I was eating a nice sample of comb honey and one of extracted, both clover, but it seemed to me the comb had the better flavor.’ [Gleanings, 780, 826.] The doctor thinks comb has practically no flavor to impart, but confesses ‘I always prefer the honey that has run out on the bottom of the plate.’ I like to see brethren agree. Can they not make common ground of the fact that the comb preserves the aroma and the finer flavor of the honey? Honey exposed to the air readily takes up moisture and its aroma is as readily dissipated: hence it is that so

many prefer comb honey, notwithstanding the undesirable presence of the wax. There are a few, I think, who are not like the doctor in that they would prefer what has run out presently on the bottom of the plate."

The above remarks of Mr. Taylor contain a truth which bee-keepers cannot afford to lose sight of much longer. In the address I gave before the Ontario Bee-Keepers' Association I condemned the general practice of allowing honey to stand in tanks exposed to the moisture of the atmosphere. This is at present almost universal practice but it deteriorates the quality.

I believe that the comb will impart a flavor when it has been stored in combs not long before used in the brood for brood rearing. But the great difference generally in the flavor of comb and extracted honey from the same source is that the extracted honey is handled in such a way that the delicate aroma is lost. Bee-keepers, as a class, have a dread and contempt for science, possibly because they have come in contact with too much false science. But unless we are going to allow other branches of agriculture to outstrip us and even look upon us with contempt, we must not only be friendly to science but court it and seek its aid in the advancement and elevation of our calling. I predict science will revolutionize the methods of handling extracted honey. It will show us why we should allow the bees to keep the honey until their resources to improve it have been exhausted. How every utensil and vessel into which it comes in contact should be free from the invisible yet active and injurious germs of fermentation. How one can of sour and souring honey, tolerated in a honey house, becomes a breeding place which will lead to fermented honey when otherwise it would not be the case. We will realize the folly of allowing honey to stand in open vessels where it loses its aroma. We will rather harvest it in a way that it can be immediately

sealed. Of course if the aroma and flavor is undesirable the more lost the better.

* * *

There is a good deal to learn about hive covers and their use. In going about the country I have been surprised to see the

shapes, forms and methods of applying covers. To begin with,

a cover should never be the means by which the bees are prevented from escaping from the hive; that is, under the cover there should be a quilt, cloth, or board by means of which the bees are confined to the hive. To use the heavier cover for this purpose tends to the killing of bees when putting on the cover. With a cloth, the top of the hive can be covered gradually or laid lightly over the hive and then drawn backward and forward lightly until there are no more bees between the cloth and wood. If a honey board is used it can be laid to place somewhat diagonally so that the edges touch only at eight points, then by smoking and brushing, the bees can be cleared away from the remaining space and the board returned to place. This cannot be done with any properly constructed hive cover. Again, there are many times when a hive can be shaded by lifting the cover at the back.

As to the construction of the cover, we want cheapness but we must have in the cover protection against wet weather, heat, and cold.

* * *

We notice in the British Bee Journal that the Right Honorable Viscount Enomotto, Minister of Agriculture,

Bees in Japan. culture, Tokyo, Japan, has been engaging Mr. Thomas B. Blow, of England, to make a report on Bees in Japan. Mr. Blow speaks highly of the honey producing possibilities of the country. He condemns the bees as "They form very small colonies, and thus are not well calculated to gather any very large quantity of honey per

colony. They appear, too, to possess, in a very great degree, the migratory instinct which shows itself in the bees deserting their hives on slight provocation, or if at all roughly handled. They swarm very freely, giving off a number of small swarms."

Mr. Blow recommends action in the following directions. The movable frame hive—Queens of the best English, American, and Italian strains—The establishing of about three Experimental Stations etc.

In closing he says, "I am quite of the opinion that a large and good-paying industry can be built up in a few years in Japan."

* * *

In my article on plain sections I did not mean to say that honey in plain sections had been shown at the

Plain Sections leading fairs, but that if it produced so superior an article, why did it not take some of the prizes at those fairs. Again at Toronto, plain sections were entered and sent to the Exhibition. I saw them there but through an oversight they were not judged. Yet they simply were not in it for best filled and cleanest sections. Although it would have been better to have made this explanation, it did not occur to me to do it, as it did not effect the position as to their merit.

Funny Column at the Ontario Bee-Keeper's Convention.

ON HEISE—The following story was told at the convention about Heise some years ago. Mr. Heise was troubled with headaches, no ordinary physician had been able to do anything for him. Hearing of a physician who could do a great many things, such as using the x-rays, graft on skin, remove a portion of a man's stomach to get it down to a proper capacity, he went to the doctor, who made a close examination. The doctor decided that he would have to remove his brains and give them a careful scraping. Mr. Heise was to call in a few days for them; the latter gentleman entirely relieved of his headache, departed. After several

weeks the physician happened to meet Mr. Heise on the street, the latter not having called for his brains was stopped by the physician and an explanation demanded, when the following was given: "Oh! I don't need any brains, I am keeping bees now."

ON HOLTERMANN. Jas. Shaver, Brantford, was taking part in the discussion on winter packing. He claimed that the leaves he gathered such as soft maple, had been badly broken when tramped in the wagon. Holtermann thinking he would get a joke on Shaver asked, "Were they your feet that tramped them?" Shaver "No sir, I had a Dutchman to do it." Laughter.

ON FRITH.—Mr. J. E. Frith went to the Experimental Union Meeting held the time the Bee-Keeper's Convention was held. Mr. Frith had been up and down a good many times, telling how he cultivated his fall wheat, his corn, etc., etc., when some one wanted information about the louse. Several related their experience, when up jumps Frith—"I have not been troubled much with lice." Roars of laughter, furious hand claps, convulsions and—after a considerable time—business proceeded with.

The second day of the convention a porter came down from the Wellington hotel, stating that a commercial traveller had found his coat missing, probably some bee-keeper had taken it and he wanted information. Every one denied the charge. The porter disappeared from the scene only to reappear with the information that some one must have the coat and, as the commercial traveller wanted to leave on a train within a few minutes every one must search at once. Results. Mr. C. W. Post is found with the coat (I do not know if it was slightly better than his own or not), when he professed to know nothing of the transaction—derisive laughter on all hands. The porter returns to the commercial traveller and for the consideration of twenty-five cents saves a life, and reports, just as the traveller is boarding a moving train, that he found the overcoat hanging on a post. Fact!

She—Bees will not hurt you if they know you.

He—Well I'm sorry I was not introduced to one I met last summer, then that's all I've got to say—Yonkers Statesman.

The Ontario Convention.

—By JAMES J. HURLEY.

I have had the pleasure of attending my first bee-keepers' convention.

Arriving in Guelph about three o'clock Wednesday afternoon after a long and tiresome ride in a way-freight, I proceeded to refresh the inner man that had grown gaunt and hungry. On my way to the city hall I had an opportunity to admire the wide and park-like setting of Guelph's business streets, and the general appearance of solidity that characterizes its business houses. The city hall is a very creditable structure and stands in the centre of what would be a very pretty park in summer time. It appeared to me, however, that, owing to its proximity to the railway and the station house, it seemed very like an adjunct to both. Arriving at the hall, I soon found my friends, the bee-keepers, ensconced in the council chamber, deeply absorbed in matters sweet. Unfortunately for my juvenile bee knowledge, the convention was engaged in the election of officers, and I regretted very much that the whole afternoon should have been devoted to this work. However, the convention chose a good staff of officers, who will doubtless give good satisfaction during their term. During the election of officers a pause was made for the purpose of hearing a few remarks from Hon. John Dryden, Ontario's able Minister of Agriculture. He spoke very fittingly of the work being done by the bee-keepers of Ontario, and pointed out that every drop of honey gathered by each individual bee was an addition to the wealth of this country. His brief remarks were very much appreciated.

I was very much impressed with the personality of Mr. Hutchinson, Editor of the American Bee Keepers' Review. Possessing a splendid cast of face and magnificent physique, he strikes one as being a man of no inconsiderable power. Courteous and gentle in speech and action, he impresses you as being a man of considerable culture and intelligence. He is certainly well up in all matters of beedom. It is not surprising therefore that the Review is the excellent paper that it is. The writer had the pleasure of listening to a conversation between Mr. Hutchinson

and Prof. Harrison, Bacteriologist of the Agricultural College. It turned upon the question of foul brood, and revealed the possession of considerable knowledge by both gentlemen, particularly Prof. Harrison, upon that subject. The Prof. intimated that he would have a publication upon that subject before long.

I was pleased to meet an old friend in the person of Mr. Frith. Once upon a time in the little school in the village of Princeton, he made an honest endeavor to teach me the three R's; and upon occasion when he thought fit, to drive, with a well-worn ruler, a little good conduct and Canadian patriotism through the palm of my hand and other unmentionable parts. It was a rude shock, therefore, to my thusly acquired patriotism, to see Mr. Frith rise and move an amendment to a motion that "the convention do not take the Canadian Bee Journal, but the American Review instead." It was most unpatriotic and ungenerous. Fly upon you, Mr. Frith. Your eldest boy ought to place you across his knee and spank you well. Know you not the growing Canadianism of late years? The Review is a very fine paper, and ought to be in the hands of all who can afford to take it, but that is no reason why we should abandon our own publication. The Canadian Bee Journal will be good or bad, great or small, just in proportion to the support it receives from the bee-keepers of this country. In our hands depends the success or failure of any Canadian publication devoted to our interests. If we wish to have a home publication, we must give it our support. Publications of this sort cannot live on sympathy or wind.

The concert given in the Agricultural College hall on Wednesday evening to which the delegates were invited, was a very enjoyable affair. The singing of Mr. Harold Jarvis, of Detroit, an ex-student of the college, was a most delightful treat. Our good friend McEvoy, the foul brood inspector, was simply carried away. His ponderous hands came together in such ponderous claps as almost to dislocate the platform. He moved a vote of thanks on behalf of the bee-keepers at the close.

Enclosed please find my subscription to the CANADIAN BEE JOURNAL for 1896. I could not very well get along without the Journal. GEO. F. BEACH.
Charlotte Co., New Brunswick.

Notes and Pickings.

—D. W. HEISE.

In American Bee-Keeper C. B. Howard outlined the necessary requirements for wintering bees on the summer stands. "Never disturb your bees after the first of October, and not before the first of April following, first of May still better. Secure a location well protected from the prevailing winds. Replace all old queens with young healthy ones. Pure stores of sufficient quantity to last the colony until they can replenish their larder again from natural sources. Bees well packed in double walled hives that will not admit wet." C. P. Dadant in American Bee Journal 709, divides the essential requirements under five heads: "First, a sufficient number of bees. Second, a sufficient quantity of food. Third, food of the proper quality. Fourth, an occasional flight during cold weather. Fifth, a certain amount of shelter." Just exactly how much shelter Mr. Dadant means, when he says "a certain amount," or what Mr. Howard means, when he says "well protected from prevailing winds," I don't know. But if they have reference to high board fences, or hedge of evergreens, or anything of this nature, then I want very little of it in this locality. But rather, I want the protection surrounding the cluste of bees, both top and sides, and if this is properly done, I care not if the hive sits in the open plain, in fact I would rather have it in the open, than inside some such inclosure as mentioned above. Because, when the hive sits in the open, the bees will never venture out until the temperature is sufficiently high to ensure their safety in doing so. Not so when too much protection is given them by buildings, fences, etc. In regard to sufficient "food," my principle is, not to depend on what I may think is "sufficient," but what I KNOW is food in "abundance." Although I do not always carry this out to the letter, under some circumstances, yet it is my aim and object in preparing colonies for winter.

"Paraffine four cents a pound; beeswax thirty cents per pound, Next. Ed. 453." Yes, who ever heard tell of paraffine at four cents per pound? Next. Picker. [The Editor of the Canadian Bee Journal has known of it being sold at four cents

per pound in large quantities. Next. Editor.]

There is no doubt, that owing to the great injury done to fruit the past year by the codding moth, a fungus disease, there will be a large amount of spraying done the coming spring by farmers, and fruit growers. Therefore every bee-keeper should be alive to his own interests, and start in early to educate those who may yet be ignorant of the law, which prohibits spraying while trees are in bloom. as well as trying to impress upon their minds the great fact, that spraying at such times, greatly reduces the prospects for a successful crop. Now is the time to start the battle cry. let every bee-keeper now shout the warning note, and keep on shouting it, until all danger is past.

I believe it is a mistake, and bad practice for honey producers to go to the trouble of liquefying extracted honey before dealing it out to their customers. That is, when it has been put in suitable sized receptacles for retail trade, and has once become candied. While I have never handled a very large amount of extracted honey, I have nevertheless, disposed of several tons, and never yet have I found it necessary to liquefy it after once it had granulated, simply to satisfy the whims and fancies of consumers. My honey has always been sold from liquid, to semi-granulated, to solid granulated, just what ever condition it happened to be in, when a purchaser wanted to buy. The only precaution that I have found necessary, is to give definite instructions as to how it can be brought back to the liquid state, (without in any way impairing the flavor or aroma,) to any who desired it so. I fully believe it would be in the interest of producers generally, if they would try and discourage the laborous practice as much as possible, and as granulation is an established identification of purity, I believe the public would be as well, if not better served in the matter.

The fight between Doolittle, and Dr. Miller, as to the egg laying capacity of a queen still continues. On page 11 Gleanings, the heavy-weight, gives the doctor some knock-out blows, the force of which is gathered from an experiment made away back in the seventies. Said experiment goes to show that, a queen's full capacity in egg production will depend largely upon whether the colony is managed for extracted, or comb honey. Four hives

were set apart by Doolittle for making the experiment. Two Long Idea hives, containing 32 Gallup frames each, the other two were his ordinary 9 frame Gallup hives. One of the former, and one of the latter, were managed for extracted and comb honey respectively. Before the basswood harvest arrived, the queen in the Long hive worked for extracted honey, had brood in every one of the 32 frames, equal to 18 or 20 full of brood; while the one worked for comb honey, had brood in only 13 combs, amounting to only about 9 frames full, the rest of the combs being partly filled with honey. The queen in the extracted hive was laying double the number of eggs daily, to the one in the comb honey hive, and yet both apparently to their fullest capacity. Something, (Doolittle hardly knows what,) stimulates a queen in a hive, worked for extracted honey, to far greater activity in egg production. The results in honey from the above, were: Long hive for extracted 56½ lbs, 9 frame hive, extracted, on the tiering up plan, 400lbs, Long hive for comb, 50 lbs in sections, with the 32 combs nearly solid full of honey, while the 9 frame worked for comb on the side and top storing plan, gave 309 lbs in sections, with enough below for winter. All the queens were less than one year old, the one in the long hive, worked for extracted honey, gave up the ghost the same season, all the others did excellent service the following year. The big fellow, as if to add weight to his thunder, says that he has several times since, made similar tests, with the same results. Let us try and take it down Friend Doolittle is not very often proven wrong in any statement he ventures to make on things apicultural.

"I shall be glad to believe, Mr. Editor, that it is necessary to boil foul-broody honey only "several minutes;" but please remember that we have the following to face, which stands yet as a fact: Prof. Mackenzie secured growth from spores after they had been kept at 212°—not approaching, but at 212°; that is they were brought to a boil, and KEPT BOILING FULL TWO HOURS. If there is no mistake about this, is it safe to advise less than something more than two hours?"—Dr. Miller, in *Gleanings*. The Editor in a foot note, replies as follows: "The only question in my mind is whether these scientists did not make a mistake; and ought their single scientific experiment to overbalance the results of practical experience for years?" This calls to my mind what Prof.

Jas. Mills told us at Guolph recently, that there could be no conflict between science and practical experience, as to the actual facts in a case. If both do not agree, then one or the other must be wrong. This being the case, would it not be well in the matter of foul broody honey, to err on the side of the scientists, which says boil over two hours.

R. C. Eikin is entitled to the plum, for being the first bee-keeper who has courage enough to venture the assertion (not positive) that he can tell the difference between queen cells, having been constructed after a queen has been suddenly removed, as compared with swarming, or supersedure cells. In *Gleanings* 921 and 923 he tells all about it. If you are anxious to know, just look up the pages and read for yourself, this picker has not time to copy it. R. C. gives some very prominent distinctions, as between the three lots of cells.

Here are two incontrovertable facts. One asserts with out fear of being successfully contradicted, that: the first and primary cause of bees constructing drone comb is for the reception of honey. Another asserts that a queen entering a section super will invariably select drone cells to deposit her eggs, the latter harmonizes with my own observations. Who can reconcile those two obstinate facts.

EDITOR C. B. J.

DEAR SIR:—Kindly make the following corrections in my article on page 424 describing my apiary. For "6 ft. high at the ends" read "6ft. high at the eaves." About half way down the second column read, "For a roof we use a white duck cover extending about 18 inches over the eaves," To the part of the cover extending over the eaves we fasten ropes, 4 on a side, pegged to the ground. I might have added that the part covered by the mosquito netting is also covered nights and in bad weather with a cotton curtain on the outside of tent. To the bottom end of this curtain is tacked a 3x½ strip as long as the curtain, and at the ends of this curtain an L shaped strip catches the ends of the 3x½ strip to keep curtain from swinging in with wind. We roll this curtain up and fasten it under the eaves with a short rope containing a loop. Arranged as above we can make it swing when we wish.

J. F. DUNN.

For The Canadian Bee Journal.

In the July number of the C. B. J. Mr. Ha Michener, of Low Banks, Ontario, a bee keeper of wide experience and a first class authority on all matters pertaining to apiculture, refers to my criticism of the Root Chaff Hive having the upper story double. The most of the Root style Chaff Hives in my vicinity are made for the Jones Frame, and much larger than those used by Mr. M., who uses the Langstroth. These hives (and I presume Mr. M's are, in that respect, the same) admit of but two half stories over the brood chamber. I cannot understand how any person who uses the tiering up system can be satisfied with any hive that will not admit of more than one full top story over the brood nest during the stormy season. I could not use such a hive and obtain satisfactory results, as I often use two and sometimes three full top stories when working for extracted honey to get the honey well ripened and keep the bees storing all the time honey is coming in. The point Mr. Michener raises, as to bees filling out sections better in hives having top stories double or packed, may be well taken. I have had no experience. I have quite a number of hives having the lower story double, top stories single, and have used some of them about ten years. Bees winter well in them but there is one point that must be guarded. The joint where the top story sits on the lower one must be tight. If there is any crack there the hot air generated by the bees will escape, forcing a draft of cold air at the entrance which will escape at the crack in the form of warm air that should remain in the hive. For a number of years I have placed a hill device over the bees, on that piece of burlap and chaff packing to fill top story on top of the burlap. I have noticed that this is warm clear up to the cover over the top story in a strong colony and a few years ago it occurred to me that this heat in the chaff might better be in the cluster in the brood chamber. So in placing a packing case over my single story hives I left the honey board sealed tight on the brood chamber, placing no hill device or top story over the brood nest but just filling the case with chaff. In some cases I laid several thicknesses of paper on top of the honey board (or cover) before putting in the chaff. The bees wintered finely. As to absorbing the moisture, I am of the opinion that if the inside of the hive is warm enough, (and it is apt to be if the

bees do not have a whole top story of chaff to warm up) that the bees will take care of the moisture. What does the editor of the C. B. J. think of it? I have so much faith in that way of preparation that I have now 72 colonies mostly in clamps, similar to Mr. Alpaugh's, but holding six colonies instead of four, with cover propolized fast to brood chamber and about seven inches of packing on top. I am not by any means sure that this is the best way to prepare them and should be very glad of the experience of any who may be able to give me any pointers in this direction.

J. F. DUNN.

Ridgeway, Ont.

The Emission of Perfume by Plants.

A series of investigations made by M. Eugene Mesnard, in the laboratory of experimental biology of the High School of Science at Rouen, indicates that light, and not oxygen, is the chief cause of the transformation and destruction of perfumes, but that these two agents seem in many circumstances to unite their efforts. The action of light makes itself felt in two different manners: on one hand, it acts as a chemical force capable of furnishing energy to all the transformations through which odorous products pass, from their elaboration to their total resinification; on the other hand, it exerts a mechanical action that plays an important part in the general biology of the plants, and this property explains, in fact, the manner of emission of perfume by flowers. The author thinks that the intensity of the perfume of a flower depends on the equilibrium that is established at every hour in the day between the pressure of the water in the cells, which tends to expel outward the perfumes contained in the plant skin, and the action of light, which opposes this effort. He says the whole physiology of odoriferous plants depends on this principle. We may understand thus, according to M. Mesnard, why flowers are less odorous in the countries of the Orient than in our own regions: why trees, shrubs, fruits, and even pods are there sometimes full of odorous products more or less resinified; why, finally, the general vegetation there is thorny and skeletal; for in these countries there is too much light and not enough water.—Scientific American.

Annual Meeting Ontario Bee-Keepers' Association

Held at Guelph
Tuesday, Wednesday
and Thursday
Dec. 6, 7 and 8, 1898

Management of Comb Honey.

MR. PRESIDENT:—I see by the programme that your secretary has assigned to me a somewhat broad subject in the *management of comb honey*. While I do not feel fully qualified to treat the subject as it deserves, perhaps by giving an outline of our management it may open a discussion by which we may all benefit. If I understand aright what is meant by the management of comb honey, it includes the management of bees to produce a crop of comb honey in sections, that will command the highest market price, and the care of the same until it is sold.

I would not advise the novice in bee-culture to go very deeply into comb honey production until he has had some experience with bees, especially if he has a market for extracted honey; he will find it a comparatively simple matter to give surplus room and to extract the honey at the close of the season. For the production of section honey it is necessary to know the nature of the pasturage within reach of the bees, and the probable length of the honey flow, so that no more sections will be given than are likely to be finished, or the result will be a lot of partly filled, almost unsalable sections.

My plan of procedure is:—first, to prepare during the winter all supplies that are likely to be needed for the coming season, such as hives, supers, and sections, the latter to be filled with thin comb foundation, made from the finest wax procurable.

Next, in the spring, to set out the colonies wintered in the cellar and see that each has plenty of stores, and a good laying queen with plenty of room to deposit eggs; then, during fruit bloom, those wintered outside are unpacked and all queens reared during the previous season

are clipped. More room is also given to those that are crowded; some may require another story to keep down the swarming fever till we want them to swarm, or just before the clover honey harvest. When swarming commences we usually hive the swarms on the returning plan, by removing the old colony to one side and placing the new hive on the old stand. This hive contains five frames with foundation starters two inches deep, the rest of the hive is filled with dummies.

If the swarm is only an average one we give a super filled with sections next day, or, in the case of two or more swarms going together, we give one or two supers at the time of hiving. If the honey flow should be good they will require close attention to see that they do not get crowded or the result will be re-swarming and a loss of time from the bees loafing.

As soon as the supers of sections are finished we remove them from the hive, first driving the bees out with a smoker or by using the bee escape. The finished honey should be stored in a very warm room and it will improve in quality. The sections are then cleaned by scraping off all propolis, graded and put up in neat, white, basswood shipping crates holding twelve or twenty-four sections, with a paper tray in the bottom to catch any honey that may leak, the sections resting on strips one eighth inch thick. These crates are all marked with the grade and gross and nett weight. Then they are ready for market.

There are many phases of the subject that I might go into, such as, size and width of sections, plain or no-bee-way sections, separators or no separators, style and size of hives and supers, etc., etc., but I think this paper is long enough. We use a 4½x4½x1½ section with a perforated cleated separator that gives a plump section weighing 14oz. to 16oz., which finds ready sale at good prices.

R. H. Smith.

St. Thomas, Ont.

Summer Management.

My experience in the apiary has been mostly in the line of comb honey production, and it is from that standpoint that I will write. I prefer to have the bees make a start in the supers before swarming. If swarming is thus delayed, larger swarms are the result; and as I get nearly all of my surplus from the swarms, instead of from the old colonies that have swarmed, I get better results if the great mass of workers can thus be kept together where the sections are. For this reason I use every possible means to induce the bees to turn their energies early toward the supers. For this purpose I know of nothing better than the use of drawn comb in some of the sections, the more of them the better. I should be glad to give each colony a super of drawn comb in the spring. Where the harvest opens with a rush, and the bees are at once forced into the sections before there is time to make preparations for swarming, the drawn combs may not be of so much importance, but where the flow comes on gradually, and the bees are Italians, with their reluctance to store honey at a distance from the brood nest, drawn combs are nearly as valuable as combs of honey. When the flow is light, the bees will begin storing honey in drawn combs long before they draw out foundation for this purpose. When the bees begin storing their surplus, then they are inclined to continue storing it. This early storing of honey in the supers relieves the pressure upon the brood nest, and thus allows of the raising of more brood, and at the same time retards swarming.

As soon as the sections in the first super are one half or two-thirds empty, and the flow of honey remains good, I raise the super and put under another super, having sections furnished with full sheets of light foundation. Getting the bees started in the sections early in the season, giving them plenty of surplus room and shading them so that the heat will not drive them out, will usually keep bees from swarming until they can swarm to advantage. Under this management I have known one-half of the colonies not to swarm at all. But in the majority of cases it eventually comes.

The management of swarms in a large apiary is really one important matter. I have tried leaving queens unclipped and allowing them to go with the swarms, until I am heartily sick of it. The climbing of trees, the chasing of running

swarms, the straightening out of "mix ups," that result from the simultaneous issuing of several swarms, would, it seems to me, drive any man to control his bees by controlling their queens. I will admit that "mix ups" will often result when we have control of the queens, but so long as we have our thumb on the queens, we are master of the situation. I have tried both the clipping of queens and the using of queen-traps, and my preference is for the latter. It saves the time and trouble of hunting up and clipping the queen, the time and trouble of hunting for and caging her when the swarm issues, and there is no danger of her being lost by the swarm coming out when no one is present to care for it. Many of the "mix ups" that occur in a large apiary, may be avoided by the use of swarm catchers. A swarm catcher is simply a light frame work covered with cloth. The frame is about three feet in length, eighteen inches square at the outer ends, and tapering to three by ten inches at the other end. The outer, or large end, is covered with a movable door of wire cloth. The smaller end nicely fits over the entrance of a hive. As soon as a swarm is seen issuing, the small end of the catcher is clapped over the entrance, and when the swarm has been caught the catcher is removed, a flap of cloth buttoned over the entrance, when the catcher and its contents may be set aside in the shade and the bees hived at leisure. By having three or four catchers scattered about in different parts of the yard, nearly all of the swarms can be caught if desired.

My practice is to hive the swarm upon the old stand, in a contracted brood nest, with starters only in the brood frames, and to transfer the supers from the old hive to the swarm. By this plan, the bees are back in the supers at work again within 20 minutes after they left them. As there are no combs in the brood nest in which to store honey, and the brood nest is of the capacity of only 5 L. frames, the honey must of necessity go into the sections. I use a queen excluder, otherwise the queen, too, would go into the supers. The bees at once begin to build comb in the brood nest, and as fast as it is built, the queen lays in it. The result is that the honey goes into the sections, and the brood nest becomes a brood nest indeed. I prefer starters in the brood nest to foundation, and drawn combs I have found to be of no advantage—in fact, a disadvantage. Drawn combs the bees quickly fill with honey, and are then very loth to begin work in the sections. When

they begin storing their honey they are inclined to keep on storing it. With foundation in the brood frames, the foundation must first be drawn before it can be used, and this gives the bees time to begin storing in the sections. The greatest objection to the plan of having the bees build their own comb in the brood nest, is that if the queen is old, too much drone comb may be the result; but, as this plan usually results in rather light colonies, unless there is a full flow in which they can build up, and it is desirable to unite them at the close of the harvest, there is an opportunity of discarding the drone comb.

I go back just a little. At the time of hiving, the old colony is set to one side of the newly hived swarm. The entrance of the old hive is turned to one side. In a day or two the entrance of the old hive is turned towards the new hive. In a day or two more it is again turned still more. By the eighth day the two hives will be standing side by side. Take away one, and all the field bees of both hives would return and enter the hive left upon the old stand; so, in the early part of the eighth day, or the afternoon of the seventh day, the old hive is carried to a new stand. The result is that the hive having the sections receives a nice little addition to its working force, while the old colony loses this force, just at the time when the young queens are ready to hatch, and is so weakened in numbers that further swarming is abandoned. The only condition under which this plan fails in preventing after swarming, is when the heat, or the swarming mania drives out a swarm before queen cells are complete. In this case it is so long after the old colony is given a new location, before the queens are ready to hatch, thus sufficient bees hatch out to make a swarm. Unless a colony swarms early, or the flow continues late, I expect no surplus from a colony after it has swarmed, but it is always found in fine condition to winter. It will have a young queen, an abundance of excellent stores, and plenty of bees that have not worn themselves out with hard work.

Some of my methods may not be desirable in all localities, but in my locality, they are the best I have tried.

W. Z. HUTCHINSON.

With good management it costs little to keep a few hives of bees.

How Can We Make Our Association More Useful.

Mr. President, Ladies and Gentlemen:

The question above is one which should interest us very deeply. Receiving as we do, a grant from the public funds, and being assisted in other ways as we have been by the Government of Ontario, it is but fair that we should endeavor to render as great returns as possible for that which has been given us. It would not be possible in one brief paper to mention half of what might be done, and I propose to just glance at a few of the many ways in which we might hope to attain to greater usefulness. I shall divide these ways into two classes, the positive and the negative, the doing and the refraining from doing, and I shall treat of the latter or negative side first.

We are not to consider our work done because we have succeeded fairly well in the past. It is true that some of the tasks have been fairly completed and some others well under way, but what we have accomplished only opens the way for other and in some cases better work. If we are to conduct the business of this Association for the benefit of the bee-keeping industry at large, we must not come to these conventions as isolated individuals and endeavour to make all things work together for our personal benefit, neither should we try to place personal friends in official positions, unless they possess some other qualifications beside a desire to please. We must not allow ourselves to monopolize the precious time of these conventions in discussing abstract theories which are of no practical value to any person, except those of a scientific turn of mind, and of little use to them only as side lights on some other subject; and above all, we must not permit personal matters and private bickerings to be discussed during business hours, neither must we permit personal spleen—if you will allow the term—to influence our work for the public. A true soldier knows no enemies on the battlefield except the enemies of his country. We should all remember when we get here that individually we are only a part of this association, one piece in a machine, and we are expected to do our part to the best of our ability and with the least possible friction.

Do you ask what shall we do? Well, as individuals we should come here prepared to take part in all matters relating to advancement which may come before the association, if we have any facts in our

possession that would aid in the work, doing so as briefly as possible and then giving others an opportunity to do as we have done.

When we disperse let each of us carry home with us a feeling of responsibility which will prompt us to do the best we can for the industry and for the association as opportunity may offer. Let us remember that in our own locality the work of the association in that particular locality rests entirely upon us as individual members, and call to mind the watchword "England expects every man to do his duty."

As an association we have work enough to tax all our energies. If we would rise to the greatest heights attainable, there are some things in our management that will have to be conducted on different lines, in fact one or two should be almost revolutionized, notably the manner of selecting our officers, not the mode of electing them, with that I find no fault. To quote phrases that have been repeated at these meetings, there appears to be a desire to "get new blood," to pass the honors around," and, if one may judge by some of the selections, it matters little where the "blood" comes from or who may get the "honors," provided there is a change. This is utterly wrong and will keep us down, if it does not lead to ruin. Railway companies, banking institutions, agricultural societies, insurance companies and all successful business corporations do just the reverse. When they succeed in securing a competent man for a responsible position they keep him there as long as possible no matter how many others would be willing to show what they could do if given a chance. We should do likewise. If we have men who have made our meetings a greater success and have given the country more for their money than others have done, put them back for as many terms as possible, unless we are sure we have better. To the winds with sentiment, business is business; the greatest good to the greatest number. One other thing just here. There have been members of this association who have admitted that they have opposed a good man and set up an inferior individual, simply to gratify a bit of personal spite. How can we expect to prosper, if such principals influence us in the selection of our officers? If we wish to make our association more useful, we must have no more of this.

But what is the association to do? that is the question. I answer much in different ways. The government has done

much and spent money freely in the past, and I think they might be induced to do a little more, especially as it would add little or nothing to the expenses. We are trying to gauge the honey crop from year to year. Efforts have been made to obtain an estimate of the number of colonies of bees in the county and the results have been very unsatisfactory. Could we not induce the Government to have a column in the assortment role for "Colonies of Bees" and have every individual on the rool give the number of colonies of bees in his possession? In that way I believe we could succeed far better than at present. One other duty we have to face and that is the dissemination of knowledge, educating the public if you like the term any better. There should be five or ten times as much honey consumed in the country as at present and there is only one way to bring that about; educate the public. When honey producers put a better article on the market and consumers learn that honey is a food and not a luxury, that it is cheaper than good butter for a poor man's table, there will not be quite so much trouble in disposing of our crops. This can be accomplished only by education. How shall we do this? That is a question for this association to decide, also each individual member has his duty in this matter. I shall only mention one of the various ways which have presented themselves to me. Let us use the Farmers Institutes. We have been asked to recommend men as lecturers. Here is a chance to reach both producers and consumers, as many farmers and laborers are consumers now and it is hard to say how great an increase there might be in the home demand. In the list of speakers for Institute work for the present season, there are about eight prepared to speak on poultry, some three or four having no other theme prepared. There is just one prepared to speak on bee-keeping, and I believe he has other subjects as well, and more, he is available for only about two weeks, while the institute work covers a period of about three.

As this paper is too long all ready I will drop a word of caution and have done. Do not send men out who have "axes to grind" if you can avoid it. There has been trouble already in institute work mainly caused by such persons. Any suspicion on the part of an audience that a man is trying to talk money out of their pockets into his destroys that man's influence for good, and director's of institutes will not have him or the delegation if they can avoid it. J. K. DARLING.

THE HABITS OF BEES.

Some interesting Information Learned by
The World's Young Man About These
Busy Little Insects.

The Bee-Keepers' Association of York County were to have held their regular annual meeting at Unionville yesterday.

In consequence of bad weather, the attendance was limited, but among those who attended were: Reeve Evans, Etobicoke; Mr. D. W. Heise, Bethesda; Mr. J. F. Davidson, Unionville; Mr. William Macdonald, Unionville; Mr. Peter Byer, Markham; Mr. Jesse L. Byer, Markham; Mr. William Button, Ringwood. Each of these gentlemen is an enthusiast, and, as every one of them had something to say that was worth listening to, The World reporter learned something about bees and their habits.

A colony of bees numbers usually from 20,000 to 30,000 but maybe more. It comprises three classes—the queen bee, drones and workers. There is usually but one queen bee, and the functions of her majesty are to lay eggs, which she does in the honey season at the rate of 3,000 a day or thereabouts. The drones are the males, and exist in the proportion of 1 to 40 of the other sex. They do no work, and in June or July, when the need for their existence no longer continues, they are ruthlessly massacred by their spouses. The workers are undeveloped females, who gather all the honey and do all the work. They live for 40 or 45 days in the honey season and then die off, but if they come to life late in the season they may last through the winter until the following June or July. The queen bee arrives at a perfect state of existence in 18 days after the eggs are laid, the workers in 21 and the drones in 24 days. An ordinary frame hive will have about 40,000 cells. The bees do not as a rule go farther from their hives in search of honey than two miles. The best honey is got from bass-wood and clover. The darker honey is from buckwheat, and in this district is not esteemed very highly. The party visited the hives in Unionville of Mr. Davison, and were much interested. The necessity for good ventilation was fully recognized.

A family which increases at the rate of 3,000 a day requires, before long, a new tenement, and crowding out is what leads to swarming. It is the old queen bee, with some of the old workers, which desert the old home and seek a new one. The young queen bees, of which there may be as many as 10 left behind, may also swarm in their turn, but practical bee-keepers try

to keep down the number of swarms to one or two and kill off the other young queen bees. When the old queen bee ceases to be fertile, or does not give satisfaction to her subjects, which may be in the third or fourth season, she is "super-seded." This is a euphemism for regicide. The reporter omitted to ascertain if any Court of Investigation as to the sovereign's usefulness is held, or how judgment is arrived at, or how the executioners are chosen who sting the queen to death. The drones have no sting. The workers have, but do not use them, as a rule, unless provoked. Cattle and hogs nearly always escape, but bees seem to be animated with hostility against horses. Human beings are generally safe in handling bees. Some breeds are extremely well-behaved, but some are very ill-tempered. In using their weapons of offence, bees lose their lives. If bees could listen to reason they would learn how very ill-advised it is to lose their tempers, but it seems to be difficult to reason with an angry bee.

The consumption of honey per head is not what it ought to be, and there is no reason why the average household should not quadruple its ordinary consumption of the article.—Toronto World.

Honey Bees From the Philippines.

There is one race inhabiting the Philippines which will be a welcome addition to American citizenship, and will be afforded every facility and inducement to immigrate to the United States and engage in the skilled labor in which it has no peer. This is the giant East Indian honey bee, and investigation of its work and immense capacity for making honey and wax has interested the Department of Agriculture in the consideration of an early effort to introduce it into the United States. Secretary Wilson said, in connection with the proposed importation of these bees to the United States, that a special appropriation would be asked in his coming report to congress for the investigation of the bees of the world, and a swarm of the big Philippine honey makers would be brought to America as soon as the question of their value and the possibility of their acclimation have been fully determined. There will also be an appropriation requested for the study of the agricultural and kindred products of the newly acquired territory of the United States, and even under this head the great honey bees of the East could be introduced by the department to this country.

DOOLITTLE'S LATEST FEAT IN QUEEN-REARING.

Doolittle's Method of Queen-rearing, in a Nut-shell.

BY G. M. DOOLITTLE.

Before me lies the following letter: "I read in November 15th Gleanings, Doolittle's latest feats in queen-rearing. I have his book on queen rearing, 1889 edition. Has he any improvement over plans there suggested? I practice many of his plans; but my experience nine years ago in rearing queens in hives containing queens, was not very satisfactory. I want the latest." R. WILKIN.
Newhall, Cal., Nov. 30, 1898.

The above is a letter written to The A. I. Root Company, and forwarded to me to "draw me out," as there seems to be a thought on the part of many that Doolittle is not now practicing for queen-rearing, just what he gave in "Scientific Queen-rearing" about ten years ago. As the Roots and myself did not think Bro. W. would have any objections to having his letter appear in print they have taken the liberty of publishing it, and I have taken it as a text to tell the readers of Gleanings, and Bro. Wilkin in particular, just how those "600 sealed cells from that one colony, the queen laying all the while," as Dr. Miller puts it in "Stray Straws," were reared. These queens (for every cell hatched out a perfect queen) were reared just the same as I gave in the "1889 edition" of my book, and just as I rear 999 out of every 1000 queens, for I practice no other plan, not even saving natural swarming-cells, for, as a rule, they do not prove as good as those reared by bees in an upper story, with a laying queen below all the time.

Now, lest some one may think this a "puff" for my book I wish to say that I have had nothing to do with the book since it went into the publishers' hands: for at that time I sent it free and broadcast over the world, with the hope that it might do the world some good, not having any pecuniary interest in it since, nor any other, except that it is my "baby." It has been a "loss to know" matter with me for a long time why a few did not succeed with a plan which is so perfect in my hands, and to me seems so simple withal; and all I shall attempt to do in this will be to go over the ground given

in the book a little more minutely, as I have no improvements over what is given. Since I gave the book to the world I have paid very little thought to queen-rearing, my whole life and experiments since then being put into studying about the non-swarming of bees; and if I ever succeed along this non-swarming line, Providence sparing my life, I shall give that to the world in book form also. With this long preliminary I will proceed to tell "just how I rear queens."

When spring opens I select one of the strongest colonies I have in the yard, and one having a queen reared the summer before, as I wish one which is not likely to fail in her egg-laying powers before the season is over, as that laying queen below has very much to do with queens of the best quality, in my opinion.

About the 10th to the middle of May I go to several hives till I find the number of combs of sealed brood that are necessary to take the place of those having no brood in them in the hive I have selected, which is generally from two to four. These combs of brood (without bees) are now set in the hive, when, in a week or ten days I have a colony strong enough to commence operations. Perhaps I should say just here that I use nine Gallup frames in this hive, which is a chaff hive and that I bring from my out-apiary, the fall before, the queen to rule over this hive, which is a mismated (or "hybrid") queen, as generally called, for I find that hybrid bees, showing about as many black bees as those with yellow bands, will build and complete nearly double the number of cells as will pure Italians, and seem to take to this line of work better than any other. I usually bring several queens of this class to take the place of those sold, and then select the strongest colony having one of these queens. As soon as the selection is made the rest are used in the out-apiary again. I tell this only as I wish to give everything just as I do it.

As soon as the colony is strong enough to go into the upper story I take two combs from below, having mostly eggs and unsealed larva in them (don't take any drone larva, as drones above a queen-excluder are always a nuisance), and in their places put two combs of sealed brood from other hives, as we wish all the bees possible thus early in the season.

I now put on top of the hive a hive having the queen-excluder nailed to its bottom (if thus nailed we never have to touch the excluder if we wish to remove the upper hive during the season); as it

always comes off with the other hive, and in the center of this upper hive put the two combs of brood, four frames well filled with honey, a division-board feeder, and two dummies made from inch or $\frac{3}{4}$ lumber.

When about two days have elapsed for the colony to adjust itself to the new conditions, it being fed about a pint of thin sweet every night, if honey is not coming in from the field, they are ready for a batch of prepared cell cups, as given in my book. To tell all about how to prepare these would be too long for this place; but all can find all about the matter by turning to chapter seven of the book. I could not tell that part any better were I to try it over again.

Before going for the royal jelly and the larvæ to transfer into it, I stop at the hive, take out one of the dummies, shove the frames that way till I leave a frame's space between the combs of brood, when the cover is put on. As a rule it takes me from fifteen to twenty minutes to get the royal jelly, the larvæ, put the jelly and larvæ into the cell-cups, and get the now prepared frame to the prepared hive. I now remove the covering, which is a quilt, with a four inch sawdust cushion over it, and a hood or cap eight inches deep over all, when I find the space left for the prepared frame completely covered with bees—so much so, that I have to work the frame slowly up and down in lowering it, so as to cause the bees to run out of the way. I don't know that causing the bees to cluster in this vacant space between the frames of brood has anything to do with the matter; but it has always seemed to me that they are better prepared with royal jelly and for queen rearing while doing so. Three days later I go to the hive again, take out the other dummy, draw the frames to the side of the hive till I come to the first frame having brood in it, when I lift the frame of cells, take off one or two of them, for the royal jelly needed to start the next "batch," when the frame of cells is placed in the vacant space behind the frame of brood, caused by taking out the dummy and drawing the others along, thus preparing the same place for the next frame of prepared cell cups which the first one occupied, and when all ready it is placed there as was the first. Three days later a frame of honey is taken out from the opposite side from which the last dummy was taken, the frames again drawn along till we come to the frame of brood, when the last prepared frame of cells is taken out, one or two taken off for

royal jelly, and the frame "jumped" to the outside of the frame of brood, which gives room for the third prepared frame between the frames of brood again, where it is placed as soon as prepared.

As I do not work with the bees on Sunday, I time it so that no cells have to come off that day, and so four days now elapse before I put in another prepared frame, which makes ten days from the time we started, so that we really have only three prepared frames every ten days.

I now take out the frame of "ripe" cells, or the first one prepared, and distribute them where wanted, getting the bees off, etc., as given in chapters 8 and 9 of the book, when I lift out the two frames of brood, look them over to make sure that the bees started no queen cells on these frames (unless this is done we may have a queen hatch when we least expect and destroy all of the cells on the other prepared frames), when these two frames of now sealed brood are "jumped" over behind the two frames of cells now remaining. I now take out a frame of honey on each side, and shove all the frames along toward either side of the hive, so as to make room for two frames containing eggs and larvæ, taken from any hives in the yard (generally from nuclei when under full head way later on) which are placed in the center of the hive again, as the first two were, being left apart for the fourth prepared frame, which is now fixed as the others and put in.

This tells you all there is of it, only that you keep right on in this way all the season, and the result should be with you the same as I gave on page 849 of Nov 15th Gleanings. I see the Roots use colonies preparing to supersede their queen, but I have not used such a colony since the book was published and do not see why others can not succeed as well as I do with a good laying queen below, for I do not believe that the raising of queens in this way is any "trick" at all. Colonies worked as above given are quite likely to swarm under the pressure of bees given by their own queen and the inserted brood; and when they do so I simply take off the upper story, cut off all queen-cells started, cage the queen for ten days, cut the queen-cells again, and allow the bees to liberate her by eating out the candy from the stopper, as given in January 1st Gleanings for 1898.

As to feeding: I feed generally, to start with, till the frames in upper story are quite well supplied with honey, unless at times of real scarcity. That is when

enough is coming in from the fields so that no robber bees are about looking into hives as I open them, I do not feed, only for the first ten days, but feed at all times when nothing can be obtained from the fields.

Then there is a bare possibility that the deeper Gallup frame has something to do with it, but I think not. I have never tried so rearing queens at the out-apiary, for I use only the one colony at home, bringing brood from the out-apiary, if I wish to breed from any queen there.

If I have failed to make all plain, don't be afraid to ask questions, for on good queens hangs the greatest success in apiculture.—Gleanings in Bee Culture.

Borodino, N. Y., Dec. 30th, 1898.

Strengthening Colonies.

The plan of strengthening weak colonies of bees by exchanging hive containing such colony with one having a strong colony in it, putting each on the stand formerly occupied by the other, is one which is quite generally adopted with good results, and I am asked what time of the day is the best to do this exchanging. Some claim that it matters not when the exchange is made, for if made at midnight the bees come out in the morning without realizing any change has been made, and upon returning from the field go to the old location the same as if nothing had happened; hence the weak colony will receive as many bees in this way as they would if moved when the bees were at full flight.

Perhaps a little looking into this matter would do no harm. When a colony is in a normal condition the young bees go out to take their first airing at the age of six days, if the weather is favorable; and in doing this they mark their location to a certain extent, but not to an extent great enough that subsequent flights have an impression on their memory, for we find them taking these markings anew at every flight until they become field workers, after which they take no more markings during the working season unless it be in the case of a swarm, or some very rude disturbance of their home.

If the hive is moved at midnight, on the coming morning all the bees over six-

teen days old, upon going to the field leave in a straight line, and having the location established in their memory, and not taking any markings that morning, come back to the spot where the old entrance used to be; consequently they go into the hive of the weak colony (if such has been placed on the old stand) or are lost, if no such provision has been made.

But suppose we wait till about two o'clock in the afternoon, at which time all the bees under sixteen days old and over six days old will fly if the weather is fine, and we will find that these young bees head toward the hive the same as they did the last time they were out, hence they notice the change which has been made, and instead of going to strengthen the weak colony which has been placed on the old stand, they return to the spot last marked, hence do nothing toward the desired strengthening. Now, had we waited about this changing until these young bees were in full flight, and moved the hives when the most of these young bees were in the air, we would have caught these also, in addition to all those which were over sixteen days old. Then ten of these young bees are worth thirty or forty of the older ones for strengthening weak colonies, inasmuch as they are just commencing life instead of being near its close, as many of the field bees must of necessity be.

Thus it will be seen that if we wish to secure the best results from this exchange of colonies, it should be done when the greatest number of young bees are flying from the hive, for we shall get the old ones in any event.—G. M. Doolittle, in The Rural Californian.

Bees in the Orchard.

Many fruit growers do not thoroughly appreciate the value of bees in the orchard or there would be more orchards with bees in them. Their value in an orchard was demonstrated in a most practical way at the Oregon Experiment Station some years ago. A few peach trees were forced into bloom in November and a colony of bees was placed in the house when the trees began to bloom. For some days, however, a heavy fog prevented the bees from working, although the flowers were open not a bee was seen upon them. The first bright day the bees set to work at once and remained at work so long as there was anything for them. The result was that not a peach dropped at the stoning season, the time

all unfertile fruit falls. The crop was so heavy that it had to be thinned out. As a check test one tree was protected so that not a bee could get to it. On this tree all the fruit dropped at the stoning period. Bees and other insects have a duty to perform in the orchard, for which there is no substitute provided. This is the distribution of the pollen from flower to flower and from tree to tree. They insure success in the orchard and every fruit-grower should encourage the bees in their work by not spraying or doing anything that would be injurious to the bees while the trees are in full bloom.—Farming.

For a Beginner.

Editor Canadian Bee Journal.

I wrote you some two years ago from St. Marys, in regard to the self-hiver, but circumstances at that time prevented my engaging in bee-keeping. However, I have decided to commence operations on a small scale next spring, and as my college course gave me no more extended information than the lectures of Rev. Mr. Clark, I would like to get your opinion regarding:—The two best text books on the subject? Whether the self-hiver can be made to fit any hive? What style and size of hive, (large or small) is best for a beginner? Whether on account of the colonies having died of foul brood, you advise my buying the hives cheap and what method could be adopted to eradicate traces of disease? Is May a much safer month than April in which to start? Could you suggest how I might obtain a copy of the lectures, (notes,) which you deliver at the Ontario Agricultural College, as I cannot take the course next spring, but probably will next year?

J. H. BURNS.

[I am in receipt of yours on the 21st. The two best books on bee-keeping are the "A. B. C. of Bee Culture," price \$1.25 post paid, and "Langstroth" on the Honey Bee, price \$1.50 post paid, the latter by (Dadant).

The self-hiver can be made to fit any hive, but not conveniently the double walled. The "The Langstroth" Hive is probably the best to use and is being used by the majority of bee-keepers. Contrary to the inclination of beginners in bee-keeping, I would say, begin by producing extracted honey, it can be produced more successfully and with less experience.

As to hives which have traces of Foul Brood, I would say that they can be dis-

infected by cutting out all the old comb and wax and boiling them in a solution of Carbolic Acid. Unless you can get the hives very cheap, I do not think I would care to invest in such goods. If you are buying bees, especially if you are moving them any distance, May (in our locality) is the best time to buy. There is no more risk from spring dwindling and robbing, and you have then the honey season ahead of you.

As to my lectures on bee-keeping at the Ontario Agricultural College, and the best method of securing a copy, I would be pleased to furnish you with this, but I have only headings as a guide, and at present I do not know of any way of securing them, unless you know of a student or ex-student who takes pretty full notes. If I can be of any further use, do not hesitate to write.—Ed.]

Early Setting Out.

To the Editor of the C. B. J.

It must be cold up at Brantford when you have to scrape the snow of the ground to set bees out on the 6th of March. I set a number out on the 8th and the balance of twenty-eight colonies on the 12th, but there was no snow on the ground where I placed the bees. On looking some of them over I found one dead (queenless), the rest were clean and bright, queens laying and a number of colonies had hatching bees. Eighty colonies packed on the summer stands in the same yard were all alive. Pollen was brought in freely on March 16th, the earliest I remember.

I used to wait till soft maple bloomed before setting out, but last year for the first time I set bees out early and they did better than those packed outside, and if they do as well this year, I shall not hesitate to put them out early another season.

I find that artificial heat in an adjoining apartment is a great help to keep up the temperature in the bee cellar, and I don't want it below 45°. Last winter we kept it at from 48 to 52° and everything was dry. This winter with less fire the temperature was from 42 to 41°, and there was more moisture than I like to see.

The prospects are good for the coming season, bees have wintered well and the clover has not been injured. I have only been to one out yard six miles south of the city, found all alive but one; the other yard to the north I expect to be as good, so with three yards and a fair season,

Henry and I will have all we can attend to.

I, for one, would be pleased if Mr. Cowan could pass through Ontario this summer. I had the pleasure of meeting Mr. Cowan, at Toronto in 1887, and, if he can make it convenient to be at a meeting within reach, I will try to be there.

I remain,

Yours truly,

R. H. SMITH.

St. Thomas, Ont.

[This came to hand too late last season. There are points of value in it, we therefore take the liberty of publishing now. —ED.]

Dietetic Value of Honey.

Probably most people consider honey as the equal in value for food of any sweet sauce—no better, no worse. All should know that it possesses one great superiority—ease of digestion. The nectar of flowers is almost wholly cane sugar. The secretions added by the bees change this to grape sugar, and so prepare it that it is almost ready for assimilation without any effort on the part of the stomach; in fact, Prof. A. J. Cook once styled honey "digested nectar." It will be readily seen that honey is a most desirable food for those with weak digestive powers. If a person is very tired, too exhausted to eat, it is astonishing how a few tastes of honey will act almost like magic. Almost no effort is required to make it ready for assimilation. Persons suffering from some forms of kidney trouble will find that honey is a much more beneficial food for them than is cane sugar.

In eating comb honey, many strive to reject every particle of wax, fearing, that as wax is indigestible, nightmare and other troublesome consequences will follow an indulgence in warm biscuit and honey. It is true that bread is more easily digested than warm biscuit, as the latter is inclined to "pack" in chewing, but it may surprise some to know that comb honey is really an aid to the digestion of hot bread or biscuit. The philosophy of the matter is that the flakes of wax prevent the "packing" while the honey readily dissolves out, leaving passages for the gastric juice to enter the mass of food. The flakes of wax are indigestible, that is true, but when warmed are perfectly smooth and soft, and will not injure the most delicate membrane;

in fact, they act as a gentle stimulant, and are beneficial in some forms of alimentary difficulties. The unpleasant symptoms from which some suffer after eating honey may often be removed by drinking a little milk.—The Rural Californian.

THE APIARY.

Ventilation of Bee Cellars.

W. Z. HUTCHINSON, MICHIGAN.

A few years ago "sub-earth" ventilation of bee cellars are almost universally recommended. Nearly everyone who built a bee cellar also buried 200 or 300 ft. of drain tile, the outer end connecting with the open air and the inner end entering the cellar. To remove the air from the cellar, a pipe, connecting with a stovepipe in the room above, extended down through the floor within a few inches of the cellar bottom. The draft in the stovepipe "pulled up" the air from the cellar, and more flowed in through the sub-earth pipe to take its place. In passing through the sub-earth pipe, the air was warmed. If there was no stove pipe with which to connect the outlet pipe, it was extended upward until it reached the open air. The air in the cellar, being warmer than the outside air, flowed out of the upper ventilator and more air flowed in through the sub-earth tube.

In order to keep the temperature even, there was much opening and closing of ventilating tubes. In cold weather it was often necessary to leave the opening closed several days, or even weeks. At such times it was noticed that the bees suffered no inconvenience. Not only this but it was apparent that when the ventilators were opened, the inrush of fresh, cool air aroused the bees and made them uneasy. Finally the ventilators were opened less and less, and, at last, they were left closed all the time. The amount of air needed by the bees varies greatly according to circumstances. When they are excited and full of honey, as is the case with a swarm, the amount of air needed is very great. If they can be kept quiet a very little air will suffice. In winter bees are in a semi-dormant state, one closely bordering on hibernation, as that word is popularly understood, and

the amount of air necessary for their maintenance is very slight. I believe it was Mr. D. L. Adair who, a number of years ago, removed a box of surplus honey from a hive and, leaving the bees in possession, pasted several layers of paper over the entrance to the box. As all the cracks and crevices were stopped with propolis, the box was practically air tight. The bees were kept confined for several days, yet did not, apparently suffer for want of air. Mr. Heddon of some man who, wishing to "take up" some of his colonies in the fall, plastered up the entrance with blue clay, expecting to kill the bees by suffocation. Upon opening the hives a few days later, imagine the discomfiture of their owner at seeing the bees fly right merrily. I have several times wintered bees successfully in "clamps," where the bees were buried two feet deep under frozen earth. Prof. Cook even went so far as to hermetically seal up two colonies by throwing water over the hives and allowing it to freeze, thus forming a coating of ice over the hives. The bees survived this treatment.

Special ventilation, simply for the sake of securing fresher or purer air, seems to be almost unnecessary. The few beekeepers who plead for special ventilation, do so almost wholly upon the ground that they can thereby more readily control the temperature. If the bee repositories are built sufficiently under ground it does not seem as though ventilation would be very much needed for controlling temperature. When bees settle down into that quiescent state that accompanies successful wintering, their need of air is very slight indeed. When their winter nap is ended and spring arouses them to activity and to brood rearing, more air is needed. It is then, if ever, that special ventilation is a benefit, but as all that is needed can be so easily secured by the occasional opening of doors or windows at night, if it ever becomes really necessary, it scarcely seems worth while to go to the expense of laying sub-earth pipes. I should not do it nor advise it.—American Agriculturist.

Courage in a Young Man.

Lyman Abbott, in a recent sermon to young men, says among many other things worth repeating:

"What is it that we have a right to expect of young men? What is it that young men have a right to expect of themselves? Not all the virtues. There

are some which they have no right to demand of themselves; some which we have no right to demand of them. There are some qualities that are wrought in human nature only by experience. But there is one virtue which we have a right to look for in young men, one virtue which you have a right to demand of yourselves. It is this virtue of courage. The virtue that does and dares, that hopes and expects, that rushes forward into the fight, that is eager for the battle.

We have a right to expect of young men the high ideal, the hopeful aspiration, transmuted into action by high and strong and strenuous endeavor. And yet all this will go for nothing without a true and noble consecration. The man who succeeds is the man who ventures. "Nothing venture, nothing win" is a wise motto, though the gamblers have misused it. The man who succeeds is the man who is willing to hazard something for success, and the man who is never willing to hazard anything for success remains on the dead level of mediocrity.—The Westminster.

"Look out for foul brood. A note of warning has several times been sounded by Editor Holtermann against feeding honey got from other beekeepers. The safe thing is to feed no honey unless you know its all right."—Beedom Boiled Down. Please Mr. Boiler, will you tell us how we may "know it is all right." I suspect it would be safer to thoroughly boil such honey, and then we may know for sure that it is safe to feed it.

Have just returned from a ten week's tour through the Manitoulin Islands. There are many places on that island well adopted for bee-keeping. In several places where bees were kept, one colony increased to eight and even ten colonies in one season and all were heavy with honey. White clover blooms till late in fall and in some localities there is basswood as well. W. V. HUNTSMAN.

Yerk Co., Nov. 27, 1898.

Comb honey is reckoned officially at 12 lbs., an equivalent of one gal. strained for duty purposes. More or less of this product comes over the Canadian frontier.

I do not want to drop the Bee Journal. I started with two colonies 6 years ago and now have over 160 colonies in my cellar. JOS. MARE.

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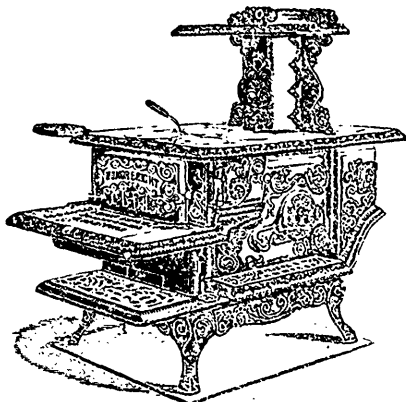
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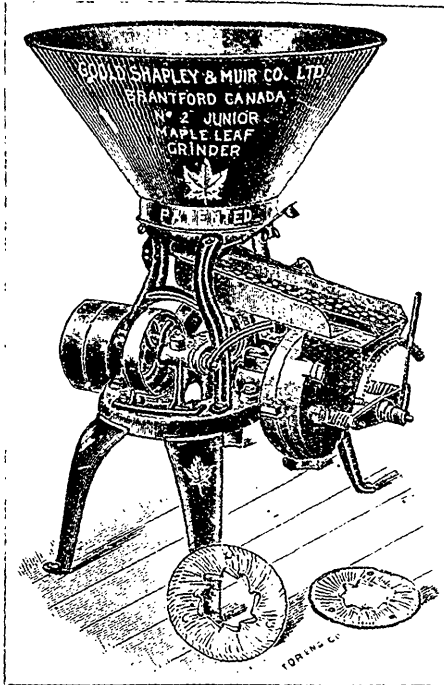
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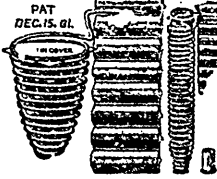
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