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THE CANADIAN BEE JOURNAL.

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

VOL. VIII, No. 9. BEETON, ONT., AUGUST 1, 1892. WHOLE NO. 317

GENERAL.

A House Apiary that resembles a Passenger Coach, and how it is successfully Managed.

JAS. HARKER.

I HAVE successfully used house apiaries more than twenty-five years. The first one I made was about seven feet wide, six feet high, twenty feet long, and held forty-eight hives. The one I am now using is forty feet long, and resembles a passenger car. The hives along each side might be compared to the seats in the car; that is, the hives *represent* the seats, and there is an alley-way down the center. I use two rows on each side. The bottom rows sit on the floor; then half way up is a shelf on which the others rest.

The house is used only in summer, it being only one thickness of stock lumber nailed up and down. Each alternate board has a bee entrance cut in it. Up to each entrance I push a hive so snugly that no bees can get into the house to bother while at work with them.

I enter the house from the south end. At the north end there is nothing except a small opening for ventilation in the very hottest weather.

About three feet from the house I have a row of grape vines that I throw entirely over the house, making a complete shelter during the hottest weather, and it looks like one massive grape arbor with an entrance at the south.

Now on these shelves (previously mentioned) I set my hives, and I can work comfortably in there either by night or by day.

I do not know how the house would answer for raising extracted honey, as I run mostly for comb honey.

I place my sections on top of the hives, and as fast as filled, or nearly so, I raise them up and on goes another super. On some of them I have had 120 sections, and others, upon which I used large sections, gave me over 130 lbs. of fine comb honey.

My section cases are glazed, so that I can see at a glance which colony needs another case. I use no cap or covering of any kind more than a piece of card board or bee-quilt, or anything to keep the bees in the top case.

Some people have said bees will not work in the light; this is not true, for my bee house door stands open night and day during hot weather, and it is very seldom any bees will be seen trying to get through the glass, but all seem quiet and happy.

If a swarm issues and I want increase, I take the old hive and place it at a vacant entrance on the opposite side of the house, set the swarm on the *old* place, and secure a powerful strong colony at the old stand in a few hours, as all the field bees will be with the swarm in a short time.

In comparing the house to a car I ought to have said, "all but the glass," as I use no windows, no screens or light of any kind. When I shut the door it is dark as night. If the bees come in the door when I am at work I close the screen door and go on with my work. I have the screen door arranged for escapes while taking off honey, also one or two other escapes, simply a funnel made of screen wire; and I can take off from one to five hundred lbs.,

close the screen door, and sometimes every bee will be out in one hour, or two at most. In or near the top of the door I have several holes made through the screen, and on these holes on the outside small cones of wire like thimbles are stuck. I sometimes lift off one or two dozen cases, lay them on one edge, go off and do anything I wish to, and in a short time all is clear. Of course, I face them to the light, and there being no other light they all make to the door, run up the screen, out of the small cones, and back to their own hives; and should any try to return (for of course many of them will fill themselves with honey and then wish to come back), they alight on the outside, run up to the top, fly off and try again, but never go out on the end of the cones to come in at the end.

In looking over the Review I see some are giving plans for a bee-house although they do not use them as yet. Will you allow me to drop a hint or two? If I were to build one as I would *like* it to be, it would be something on this plan: Select a south slope, build a wall running east and west as long as needed for the number of colonies. For the front use any kind of frame-work. I should prefer it double if to winter in; if only for summer, single thickness would answer. Put a door in each end. The only objection to this arrangement is, we only have the use of one side, but for everything else I think it is good.

The houses I am using stand endwise north and south. I use east and west sides only, and have objections to those running north and south. I will hereafter build them running east and west.

ARGYLE, Wis., Jan. 10, 1892.

FOR THE CANADIAN BEE JOURNAL.

Question Drawer.

MR. D. A. JONES.—Dear Sir.—I have a few questions to ask you about bees and the bee business, in regard to which I desire your opinion. (1) Which is preferable—the progeny of a Carniolan queen mated to an Italian drone, or that of an Italian queen and Carniolan drone? All things considered which do you regard as the best? The progeny of the first cross mentioned are not, I presume, always irritable, though I know them to be occasionally very cross and vindictive. I had one colony of these bees, and their disposition to fly out and sting could not be exceeded. A great many of these bees showed at least one yellow band, if not more. If they prove to be anything like this, in temper, then I don't want any more Carniolans crossed with Italians.

(2) Do the pure Carniolan bees keep as quiet on the combs, while they are being handled, as the Italians, and are they as gentle and industrious as the Italian bees?

(3) Does the manufacture of honey pay without going extensively into the business? If the sale of comb and extracted honey is not profitable can you tell me if it may be made so by being carried on extensively?

(4) Do queens from the south (say, from Maryland) winter in a cold climate? and do you raise any light-colored Italians?

Please send me answer, and hoping that you may have a successful season.

I am, yours truly,

JOHN F. DIAMONDS.

Fly Mountain, Ulster Co., N.Y., July 20, '92.

A cross between the Carniolan and the Italian is not as difficult to handle as a cross between the blacks and the Italians. We usually find the Carniolan cross a milder bee than the Italian. It depends entirely on what you are working for in crossing the races. If you are striving for brighter bees with more Italian character about them, you would then cross the Carniolan queen with an Italian drone. If you wished more Carniolan character you would cross the Italian queen with the Carniolan drone, as the drone exercises the greater influence over the progeny. I am inclined to think from what you say about the temperament of your hybrids that there is little of the Carniolan blood in them. There is a possibility that Carniolans crossed with Cyprians or Syrians might produce an ill-tempered bee such as you describe, but not so with Italians. It is quite possible for blacks crossed with Italians to be mistaken for a Carniolan cross; and we fear that some Carniolans sent out have too much black blood in them. The Carniolans are not as active as the Italians, and are less inclined to repel robbers.

The production of honey exclusively pays better than either the queen business or the sale of bees. Queens from southern or warmer countries produce bees that stand the winter just as well as those from northern localities. As far as I can see, there appears to be no difference.

Constructing the Comb.

Concluded from Page 127, last issue.

Necessarily, their first task was to begin the construction of the comb, in the cells of which they store their food and rear their young. For this purpose they had filled their bodies with honey before abandoning the parent hive, being able to manufacture from it the all-important wax for building. In the abdomen of each worker bee are four pairs of wax-secreting glands, from which the substance exudes between the plates that cover the belly of the insect. It hardens on the outside in delicate translucent flakes, which the animal pulls off by means of a pair of pincers which are formed for that purpose between the joints of its hind legs. She conveys the pieces of wax to her mouth, which is provided with jaws formed expressly for wax molding, and with them and her saliva she gives to the substance the proper consistency.

BUILDING DOWNWARD.

Because the comb is always suspended from above, the beginning of the structure must be made by placing a strong layer of wax along beneath the horizontal beam or what not from which the fabric is to depend. From this the latter is continued downward with a hanging wall, on each side of which the hexagonal cells face outward. Much wonder has been expressed at the absolute regularity with which these six-sided rooms are supposed to be made, but the fact is that they are not always perfectly regular and are very apt to be considerably out of the geometrical exactitude. They are not made hexagonal, but circular, and it is the interference with the form of each cell by the ones surrounding it that makes it six sided. The principle may be illustrated by putting several soap bubbles together, the walls by which they are united being invariably plane surfaces.

ECONOMY IN WAX.

Wax is a very costly product from the bee's point of view, requiring for its manufacture several times its own weight of honey, and therefore the utmost possible economy is pursued in its employment. The insects in building the comb carefully scrape away and thin the main dividing wall and the partitions of the cells to the furthest point that is consistent with the requisite strength. Thus they will so utilize a single pound of wax as to compose with it from 35,000 to 50,000 cells, which will afford accommodation for at least twenty-two pounds of honey. From this it has been estimated that the wax of a cell at the top of a full comb one foot deep supports 1,320 times its own weight. Because of the greater strain upon them the top cells are made extra strong.

THE QUEEN'S CRADLE.

In making the cells which are to be cradles for young queens, however, no such economy of material is exercised. They must be very strong because they have to bear the weight of many nurse bees crowding around to feed the immature princesses with the rich food called "royal jelly." Accordingly the walls of these larger apartments are so constructed as to be forty or fifty times the ordinary thickness. For them scraps of old wax are chiefly utilized, it being the usual habit of bees to avail themselves for building purposes of whatever second-hand material is at their disposal. Often a new comb, seen under the microscope, will be found to be full of bits of old caps that once covered cells, fragments of the cocoons, and the cast skins of larvæ.

ARTIFICIAL DIVIDING WALLS.

In order to make the bees produce more honey certain very ingenious methods of aiding them in their housebuilding are commonly practiced by beekeepers. Artificial dividing walls for combs are manufactured out of wax at a small price per square foot. These come in sheets about one-sixteenth of an inch thick or less, being stamped out in such a manner that both sides of each sheet are covered with hexagons slightly raised from the surface and formed exactly on the patterns adopted in nature by the bees. The bee man suspends a piece of this in a comb frame, which he places in the hive, and the bees use it as a foundation for building combs upon. Thus they are enabled to store away much honey which they would otherwise be obliged to utilize for purposes of construction. Furthermore, the foundation of the cells as stamped on the wax sheets are of the size adapted for the production of workers when the cells are employed for breeding.

PRODUCING WORKERS.

To make this clear, it should be explained that the kind of bees produced from the eggs laid by the queen in the cell have relation to the shape and size of the cells. Drone cells are somewhat bigger than the cells which serve as nurseries for workers, while the queen cells are much larger and cylindrical. In the manner described the beekeeper induces his bees to construct cells for breeding workers, which are the honey gatherers, instead of a large percentage of idle drones. The profit in this is obvious enough. During the four or five years of her life the queen bee lays about 1,500,000 eggs.

She deposits them in empty cells, one on the bottom of each compartment, and they hatch out shortly into little worm-like creatures. The latter are fed with honey and pollen for a few days by the young workers, who act as nurses, and at the proper time the cells which they occupy are sealed over with wax. While thus confined they are transformed into the perfect winged insects, finally biting their way out and immediately taking up the duty of nurses in their turn.

WATER-TIGHT CELLS.

So carefully is the wax elaborated and fashioned by the bees that the cells are always absolutely water tight. Their dwelling, once completed, is a marvel of construction. The combs are rows of rooms unsurpassably suitable for feeding and nursing the young larvæ, for safely warehousing the provisions gathered and for accommodating the tired workers when they need rest. Corridors run between, affording every facility to the busy throng walking on the ladders which the edges of their apartments supply, while the planning of the whole is such that the exactions of modern hygiene are fully met in respect to ventilation, pure air sweeping past the doorway of every inhabitant of the insect city.

Unfortunately the swarm of bees which had taken up its quarters in the vase over the door of the Department of Agriculture did not make a very good choice of a location. There cannot be much space in the interstices of the iron work for the storage of honey, and it seems probable that they will soon use up what store there is. Then, as is the custom of the insects under such circumstances, they will relinquish labor and devote themselves to idleness. A few weeks hence the casual passer by will be likely to see them hanging in a bunch from the fruit at the top of the column. When winter has arrived and they have undertaken to hibernate in the vase, the heat of their bodies inside of the receptacle, and the cold and snow outside will be apt to render the hive damp, and they will all die perhaps. But it is likely that Mr. Frank Benton, the bee expert of the department, will rescue them by taking them down and putting them into a proper sort of box. It is worth mentioning, by the way, that in the orient swarms of bees of wild or domesticated stocks are very commonly found residing in the pillars or other portions of old ruins. So thick are they in some ruins that the investigating tourist is obliged to take great care to prevent being stung.

PRODUCING WORKERS.

Mr. Benton says that the bees in the vase are the common brown kind, which came originally from Germany. He is not afraid lest they will sting him, because there is an art in handling these insects which he thoroughly comprehends. Once in a while he does get stung, but in times past he has received so many doses of poison by such accidents that he is fairly inoculated against its effects. The sting is only possessed by females among the bees. It consists of two darts in a sheath. The latter has an extremely thin cutting edge, which enters the flesh of the victim first and is held there by several barbs. As soon as a hold has thus been obtained first one dart and then the other is driven in with successive blows. These in turn are followed by the sheath, when the darts again plunge more deeply until the murderous little tool is buried to the hilt. If left to work her will the bee will then obtain her freedom and extricate her sting by going around and around the wound, causing the instrument to act as a drill. After a few turns the hole is made large enough to permit the weapon to be withdrawn. Ordinarily, however, the creature is obliged to tear herself away, leaving behind not only her sting and poison gland, but also the lower portion of the bowel, so that she dies soon after. It has been surmised that the venom of the bee is as powerful as that of a rattlesnake or cobra, since so small a quantity as a single indiviual is armed with is capable, when introduced into the circulation of a human being, of producing such painful effects.

THE NERVOUS SYSTEM OF A BEE

consists of a number of ganglia or little masses of brainlike substance strung through the body lengthwise. Though consciousness resides only in the head, after the latter has been cut off the balance of the insect will apparently continue to live and will execute various natural functions of being for a considerable time. Curiously enough, drones in confinement will sometimes live very much longer without their heads than with them. The detached abdomen of a worker will sting severely if irritated. But this is not so very astonishing, inasmuch as the same phenomenon may be observed with other animals and even with man. If the spine of a human being be divided by a shot the lower part of the body will be entirely paralyzed and the individual will neither have sensation in nor control over his legs. At the same time if his feet be tickled by a feather, though he feels nothing and knows nothing of what is occurring, his legs will kick violently, because the

irritation will be carried by the leg nerves to those nerve cells of the spine which are below the point of injury and which closely resemble the ganglia of the insect.

BEES AS FERTILIZERS.

Nothing in nature is more astonishing than the fertilization of flowers and fruits by bees. There seems to be the closest sort of relation between these insects and the vegetable world, the latter depending upon them to an enormous extent for the propagation of its species. Darwin and Gray have both written entire books on the wonderful ways in which orchids of various kinds are fertilized by bees that carry pollen from one blossom to another. One sort was discovered by the latter writer to absolutely require a fight between two bees in order that its own fertilization should be accomplished, one bee entering a small tunnel at one side at the same time that another comes in at the opposite end, the consequence being a scrimmage, in the course of which the pollen grains which they brought on their bodies are scattered upon the stigmas. If it were not for bees the orchards and fruit patches would be largely barren.

THE APPLE AND THE BEES.

Take the apple, for example, which from the botanist's point of view is five fruits in one, demanding for its perfect development the fertilization of five independent pips or ovules. Now and then one will come across an apple that is shrunken on one side, which means that one or two of the ovules have missed fertilization. This work is performed chiefly by the bees as they go about from tree to tree gathering honey from the blossoms and at the same time conveying the pollen from one blossom to another. In the case of the strawberry, for each little fruit there must be from 100 to 300 distinct fertilizations, in order that it shall attain perfection, and this task is performed by the bee as it sucks nectar from the original flower. If any stigmas remain untouched by pollen the strawberry in that spot remains hard and shrunken, even when the fertilized portion is fully ripe.

Thus it appears that the honey stored away by bees is, from the point of view of mankind, only a very small part of the value which they produce.

SUPERSTITIONS ABOUT BEES.

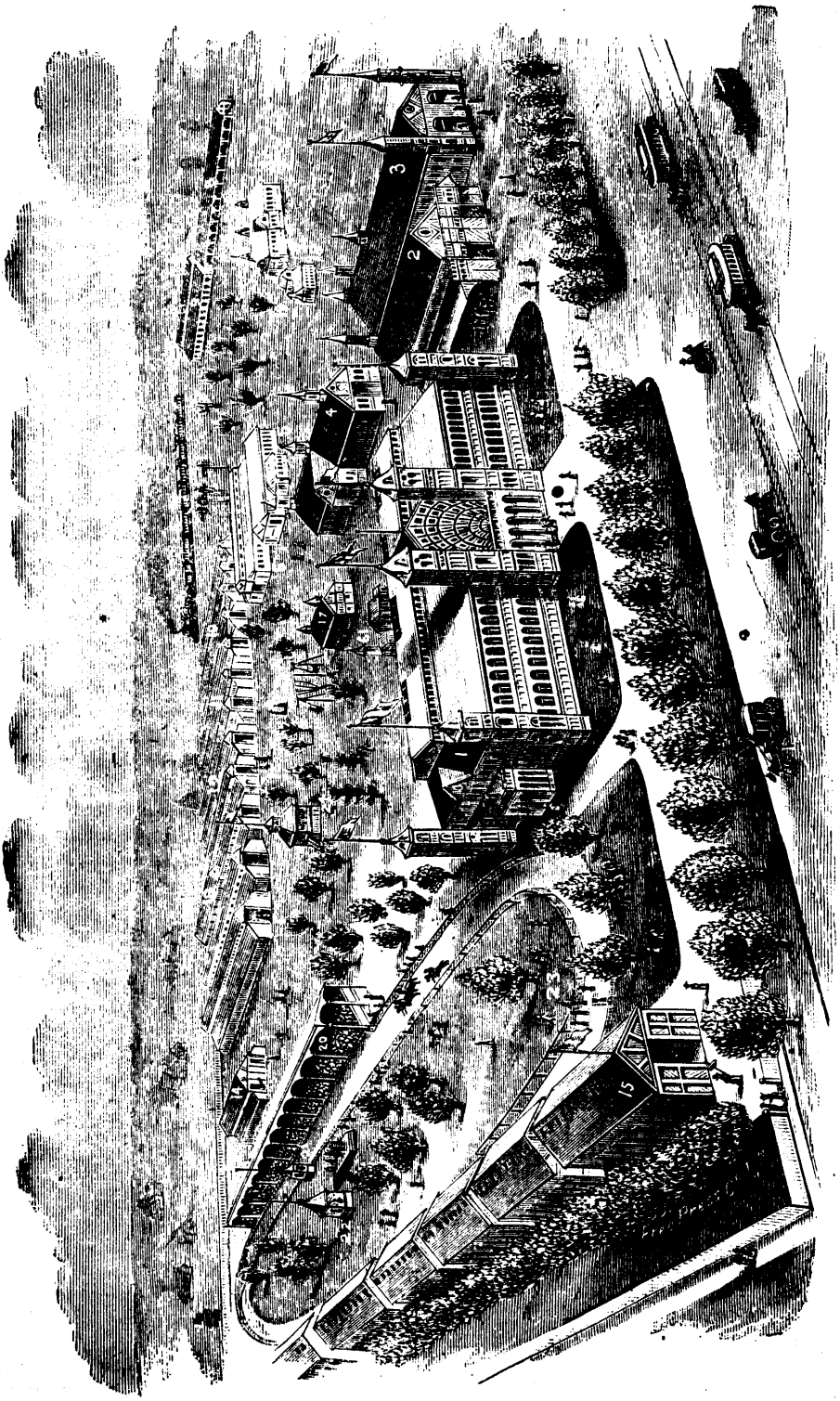
There are ever so many superstitions about bees besides the one referred to at the beginning of this article. In some countries it is customary to drape the hives in mourning when the owner of them dies, and elsewhere it is the practice to go through the ceremony of telling the bees that their master is dead. Is it not Whittier who wrote that exquisite piece of verse entitled "Telling the Bees?" In that poem this curious and interesting custom is described. When their owner dies it is supposed in some localities that the bees follow him to the grave, a notion which seems to be derived from the fact that these insects are apt to alight on the fresh varnish of the coffin, their object in so doing being to gather a substance that will be available for varnishing their cells. In Sicily and many other countries it is regarded as very bad luck to sell bees for money. They must be traded for, if possible with sheep, although the purchaser may go at night and leave cash for a hive secretly, taking the latter away at the same time.

BEE CULTURE AT THE DEPARTMENT OF AGRICULTURE.

At the recent meeting of the North American Beekeepers' Association in Albany the president of that organization spoke in favor of the establishment of a first-class apiary at Washington, to be in charge of the Department of Agriculture. Thus it would be possible, under direction of government experts, to conduct scientific experiments in bee culture, testing the qualities of different races of these insects and publishing bulletins from time to time for the enlightenment of persons engaged in the business. There is enough money in the industry to render it deserving of more attention than it now receives at the hands of farmers. It is peculiarly agricultural, since the honey is got from plants and the latter are fertilized by the insects, and it would appear that every reason exists for endeavoring to foster it.

A Cheap Mucilage.

A VERY convenient mucilage can be made out of onion juice by any one who wishes to use it. A good-sized Spanish onion, after being boiled a short time, will yield on being pressed quite a large quantity of very adhesive fluid. This is used quite extensively in various trades for pasting paper upon tin or zinc, or even glass, and the tenacity with which it holds would surprise any one on making the first attempt. It is the cheapest and best mucilage for such purposes, and answers just as well as many of the more costly and patent cements. Some of the cements sold by street fakirs at ten cents a bottle consist of nothing but onion juice and water, and the bottle and cork cost a great deal more than the contents.



WESTERN EXHIBITION, LONDON, SEPT. 15TH TO 24TH.

For The Canadian Bee Journal.

Ontario's Apiarian Exhibits at the World's Fair.

SIR,—Mr. Awery, Ontario's Commissioner to the World's Fair, is anxious to secure a good exhibit of honey from the Province. I think the bee-keepers of Ontario have public spirit enough to furnish a respectable display of their product on that occasion, though no pecuniary advantage may come to them from it. The other industries of the Province will be well represented, and it will be no credit to the bee-keepers if they hang back or refuse to contribute because "there's no money in it." The prime object of exhibits at these universal expositions is to advertise the resources of the respective countries that take part in them. Since our Province has set about preparing a great object lesson for the contemplation of the world, no feature of it should be left blank, and bee-keepers ought certainly to supply their quota in completing the picture of our Provincial resources. We must not lose sight of the fact that we are aided in the development of our industry to the extent of $500 a year out of the Provincial Treasury; and when the Province calls upon us to fall into line with the representatives of other industries, and unite with them in manifesting to the world what we can do and what we are doing, it is our duty to cheerfully acquiesce. It is needless to say we have nothing to fear in competition with other countries on the article of honey. We simply cannot be beaten; and if we but try to excel, there is litle doubt but we can do so.

The conditions under which individual exhibits may be made have already been published in the Journal, and need not be cited by me—100 lbs. of comb and 50 lbs extracted is the greatest quantity any one man can show. Prof. Saunders and Mr Awery have put us in a better position than even the bee keepers in the United States occupy, because they will have to pay for the cases in which their honey will be exhibited, while our Government has provided, or consented to provide them for us, free of charge.

There is one request of Mr. Awery I fear cannot be satisfactorily met. He asks that a display of this year's honey be sent to occupy the space allotted until next year's crop is available. I fear this cannot be accomplished with any degree of satisfaction to him or much credit to ourselves. I trust the Commissioner will be able to so modify his arrangements as to secure and hold the space till, say, 1st Aug., 1893, at which time the bee-keepers of Ontario ought to, and I trust will, be able to furnish him with one of the best, if not one of the largest, displays of honey on the grounds.

Under the circumstances, we cannot hope to equal the United States in the magnitude of our show, because while they will exhibit as individuals and as States, their entire contributions will probably be grouped in one grand display. Though we must forego the advantages that quantity gives in such a show, we can occupy as much space as any one of their States, and fill it with honey, the quality of which cannot be surpassed, if equalled, by any other country in the world. If this season's crop be not insisted upon, we will have ample time to gather ourselves together for a grand united effort in 1893. Let it be done.

R. McKnight.

Owen Sound.

For The Canadian Bee Journal.

Introducing Queens.

MR. EDITOR,—Introducing queens, by myself, has for years been a perfectly simple process, and one in which I have not had one per cent. of loss.

I have a theory in regard to the matter, but theories are of little account with the masses; what they want are plain facts. My method is as follows: About noon, or shortly after, on a day when honey is being gathered, and the bees are flying freely, I remove the old queen, being sure at the same time that no queen cells have been started, or if they have been, to remove every vestige of them. At dusk on the same day, or at the time when the bees have ceased flying, I blow a little smoke in at the entrance of the hive, wait a few moments till that peculiar "hum" is heard that denotes that the bees have filled themselves with honey, and then allow the new queen to run directly into the hive at the entrance This is all there is to the job, and as I have stated above, I have practically found no loss—that is, not one in a hundred so introduced. One thing more, however, which, though no part of the introducing, I consider of importance as regards the safety of the new queen: The hive should not be opened for five or six days after the introduction. A similar method has been mentioned in years past, as being in use across the water. Some years ago I gave this method in the bee journals, but presuming it has been forgotten, I give it again, as perhaps it may be of benefit to bee keepers just coming on the stage of action.

I find no difficulty, however, attendant upon the above method; and not knowing that I have any cabalistic powers, I see no reason why it wil not succeed with others; but to be surely successful the hive *must not* be opened for five or

six days after the new queen has been allowed to run in. By this method the new queen is introduced, in my opinion, in a way such that the bees have no knowledge of the exchange, and the new queen is accepted as a matter of course—that is, to the bees she is the same old queen. Whatever the reason may be, the fact remains, and where exchange of queens is desired no loss of time is occosioned, as is the case where the hive is allowed to remain queenless for a number of days before an attempt is made to replace the queen removed.

J. E. POND.

North Attleboro', July 18th, 1892.

My Head-Trouble.

FOR many years, as many of your readers know, I suffered from what I have been wont to call "my head trouble," which not only unfits me for mental exertion, but also disqualifies me for enjoying almost anything personal to myself. While under its full power, the things in which I usually take the greatest pleasure are the very ones which distress me most. I not only lose all interest in bees, but prefer to sit when they are flying, on that side of the house where I can neither hear nor see them. Gladly, if at all convenient, would I have my library of bee works hidden from my sight, and often I have been so morbid that even the sight of a big letter B would painfully affect me. At such times, fearful of losing my reason if I allowed my mind to prey upon itself, I have resorted to almost constant reading to divert my thoughts. The great objection to this is, that it not only fails to interest me when I am the most unwell, but, by association of ideas, too often deepens my distress. To use the words of the old poet Herbert:

> "My thoughts like case-knives are:
> They pierce me to the heart."

I have, therefore, for years read less and less, and occupied my time mainly with chess, which is too impersonal to suggest the melancholy ideas which so often torment me when reading. As soon as I awake, I try, by chess problems, the most intricate that I can find or invent, to forestall the approach of gloomy thoughts, continuing to play as though a fortune could be made by it, or as if I were playing for my very life; and often, during the large part of the night my brain seems to be incessantly moving and supervising the pieces on the chess board.*

Methinks I can hear some of my readers exclaim: "Can this be the condition of a minister of the gospel of Christ? Ought not the blessed promises of God's word always to enable him to attain, in some measure at least, to the apostle's experience when he said: "Now, the God of hope fill you with joy and peace in believing, and to make you abound in hope, by the power of the Holy Ghost?" No! no! God has not promised to overrule his natural laws by constant miraculous interposition. Can you give a wholesome appetite for food to a person intensely nauseated by merely showing it to him and inviting him to sit down and partake of it? He knows that the food spread before him is good; but can this knowledge give him an appetite for it? It is a great help, doubtless, even under the most distressing circumstances, to know that God is good, and to hope that, in due time, the dark side of the picture will be turned from us, and its bright one be again displayed. This hope often sustains us when otherwise we might be utterly cast down.

Read the 42nd and 43rd Psalm, if you doubt what I affirm:

"My tears have been my meat day and night, while they continually say, Where is thy God?" (The Psalmist undoubtedly had in mind those who say: "Of what worth is a religion which can leave a believer so despondent?") "When I remember these things I pour out my soul in me; for I had gone with the multitude, I went with them to the house of God, with the voice of joy and praise; why art thou cast down, O my soul, and why art thou disquieted within me? Hope thou in God, for I shall yet praise Him for the help of his countenance. O my God, my soul is cast down within me. Deep calleth unto deep at the noise of thy water spouts. All thy waves and thy billows have gone over me. Why art thou cast down, O my soul. Hope thou in God, for I shall yet praise Him, who is the help of my countenance and my God." Not now! oh, not now! but I shall yet praise Him. "Oh, send out thy light and thy truth! Let them lead me; let them bring me to Thy holy hill and to Thy tabernacles. Then will I go unto the altar of God, unto God, my exceeding joy. Yea, upon the harp will I praise Thee, O God my God!"

In the 30th Psalm we have the experience of one who, out of the deepest depression, had been raised to the heights of joy and gladness. "O God, my God, I cried unto Thee, and Thou hast delivered me! Thou hast brought up my soul from the grave. Sing unto the Lord, all ye saints, at the remembrance of His holiness; for His anger, endureth but a moment; and in His favor is life. Weeping may endure for a night but joy cometh in the morning. Thou

*I very seldom play with any antagonist—on an average not as often as once a year, lest I should abuse their time.

hast turned my mourning into dancing. Thou hast put off my sackcloth and girded me with gladness."

If further confirmation is needed, see the book of Job, the 3rd chapter especially, when in the profoundest depths of depression, he even cursed the day in which he was born. "Wherefore is light given to him that is in misery, and life unto the bitter in soul, which long for death, but it cometh not; which are glad when they can find the grave? Why is light given to a man whose way is hid, and whom God hath hedged in?"

I quote so largely from the blessed book, because I hope that some of my readers, almost overpowered by gloomy forebodings, may find help, and much more, from my own personal experiences, and from their confirmation by God's word. Of the Psalms in particular, it is evident that all of them which express our strongest emotions could have been born only out of deep, personal experience; some,

"When gladness wings our favorite hours;"

others, when we are almost disposed to repeat that anguished cry of our Savior: "My God! my God! why has thou forsaken me?" Only thus originating could they have lived in the memory of man for so many ages. As in water face answereth unto face, so the heart of man; and I earnestly hope that some afflicted brother or sister who has been crying out: "All Thy waves and all Thy billows have gone over me," may be helped by this recital of my sufferings, and much more helped by realizing that the Great Father of our spirits, who pitieth his children, who knoweth their frame and who remembereth that they are dust, has caused special Psalms to be written even for them.

To resume the description of my own experience:

I entered Yale College in my 17th year; and can remember that, even before that time, I had times when I lost my usual interest in my studies. Twice in college they were entirely suspended; but neither my parents nor myself at that time had any idea what was the matter with me.

While tutor of mathematics at Yale, from '34 to '36, I was similarly affected; so, also, when pastor of the old South Congregational Church in Andover, Mass.

I was at last compelled to resign my pastorate, and became Principal successively of the Abbott Female Seminary and the High School for young ladies at Greenfield, Mass., and afterward accepted the charge of the Second Greenfield Congregational Church. During the latter part of this charge I made many of my sermons on foot, walking long distances, and trying by severe exercise to get the better of the incipient attacks. Never, however, was I able to effect this. An attack might be longer or shorter duration before it prostrated me; but it always had but one issue. Struggle as I would, fight as I could, against it, my condition was that of the man lost in the quicksands, so vividly described by Victor Hugo. Walking carelessly over its treacherous surface he first notices that his freedom of movement is somewhat impaired; but he thinks little of this until he finds it more and more difficult to lift his feet. Alarmed at last, he vainly tries to escape to the firmer land, only to find that each step he takes sinks him deeper and deeper until the engulfing sands reach his lips, and his shrieks of agony are stilled. His head disappears; only the faint motion of a sinking hand is visible, and soon every trace of him disappears for ever.

The first light thrown upon my case was by a German physician who told me that my brain troubles were caused by blind piles; but he failed to cure me.

I shall never forget the remark of an electric physician, who, in 1853, while passing his hand over my neck, exclaimed: "How can a man with the flesh over his spine, in such a rigid condition, be otherwise than miserable?" This was the first time that my attention was called to the abnormal congestion of the flesh over the whole length of my spinal column. "You will be happy," said he, "as soon as I relieve you of this congestive condition." He worked upon my spinal column at intervals for several hours a day, rubbing and kneading it, much as they do in the massage treatment, all the while passing a current of electricity through his own body into mine, till at last he effected what seemed to be a perfect cure. He died before I could avail myself of another treatment.

So intimate is the connection between this rigidity and my mental depression, that they are never dissociated; but in vain have I called the attention of able physicians to this feature of my case. When it began to develop they never succeeded in arresting it.

While considerabl time, often several months elapsed from the time that I could first perceive that another attack was coming on, recovery from these attacks has almost always been very rapid. Let me describe my recovery from my last attack, which had lasted over three years. In the winter of 1891 I suffered from grip, complicated with other dangerous symptoms. Our change of residence in Dayton, in April last, seemed to my daughter to give me considerable relief, although I was not myself assured that I was substantially better. In walking to church

on the morning of the 17th I stopped for a moment to notice the bees working on the fruit blossoms. If the worst of the attack had not been over, instead of stopping I should have given the bees a wide circuit to avoid the sight of them. The next day I retired to my room, after breakfast, to get, if possible, more sleep. In my diseased state my sleep is so poor that I often spend at least twice as many hours in bed as when well.*

My mind became unusually active; my thoughts darted with great rapidity from one subject to another, when, almost instantaneously, the oppressive burden of gloom seemed to be lifted from me, and I cried out in joyful ecstacy: "O blessed Father! I shall be well again." From long experience, I recognized the usual signs of a recovery which I might hope would last for half a year, a whole year, or possibly a year and a half. When this change comes, an electric thrill seems to pass through my hands, extending itself to the very tips of my fingers, just as though something like quicksilver were forcing itself through for an exit. At times this sensation is so powerful as to be quite painful. I never have these symptoms except when I am free, or soon about to be, from the head trouble.

And now begins a period of mental activity and intense enjoyment. My dear wife used to say: "Although you have been a great sufferer at least half of your life since I first knew you, yet none of my acquaintances seem to have got so much enjoyment out of life as you; for when you are happy you are so intensely happy." To this I once replied: "I could wish that this happiness might be spread a little thinner, if only it could thus be made to last a great deal longer." My mind now seems to work with almost lightning-like rapidity, and I feel as though I could keep many persons busy in merely writing out my thoughts. Every one to whom I try to explain myself, or to whom I ask to execute my directions seems to catch my thoughts or to obey me so slowly that with great difficulty can I repress my impatience; and often I can hardly refrain from seizing hold of them to push them into swifter execution. In the night my brain is disposed to work as it were double tides until I quite wear myself out.

We read of intermittent springs which discharge no water until they are full enough for a syphon arrangement. Then they gush forth and flow until entirely empty, to remain quiescent until they are full again. After long depression, seldom speaking unless personally addressed, shutting myself up in my room* I seem to act as though I had been cheated out of my legitimate amount of talk, and must make up for lost time by uttering as much in a few days as any reasonable person ought to say in as many months. I am sensible that this exuberance is often so great as to be oppressive to my friends; but I do not despair, although over 81 years of age of learning to control it better. Sometimes, however, it seems to have its advantages; for after I have scarcely given a willing thought to anything connected with bees, for a year or more at a time, I have, in a very short time, regained my position in the mass of inventors, and often been able to keep step with those who have never been forced to leave the ranks.

L. L. LANGSTROTH.

Dayton, Ohio, July 4th, 1892.

(to be continued.)

*Had it occurred to any of them to try the Moxa cauterizing of my spine, by which Dr. Brown-Sequard cured Senator Sumner, it might have succeeded.

*Ps. 88: 8.—I am shut up; I cannot come forth.
No commentator, as far as I know, seems to me to have apprehended the full meaning of these words. Only profound melancholia can adequately interpret them.

Nameless Bee-Disease.

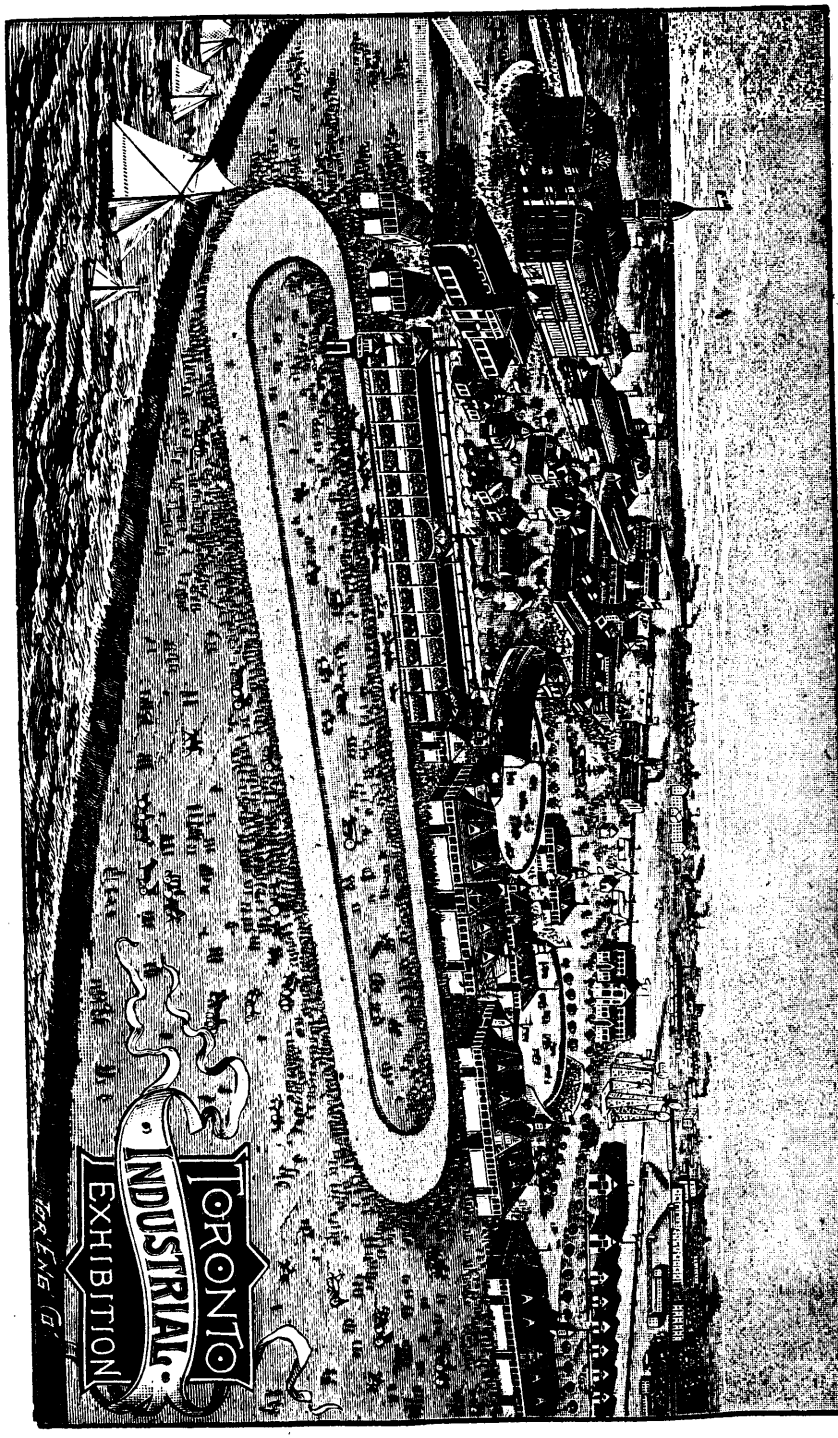
MR. Jacob Moore, of Ionia, Mich., wrote us as follows on July 6th, 1892, about the peculiar actions of his bees:

My bees have something the matter with them, and I cannot tell what it is. In the morning they will come out and seem powerless to fly, but scamper away from their hives and die. They do not seem to be bloated, and they cannot be old. All the colonies seem to be alike—27 in number. What is the trouble, and what is the remedy? Bees have gathered but little honey up to the present time, but they are gathering now. JACOB MOORE.

Upon receipt of the foregoing, we referred the matter to Prof. Cook, who gives his opinion thus:

If there were any flowers now out that were likely to be sprayed with the arsenites, I should think that Mr. Moore's bees had been poisoned. It does not seem a typical case of the "nameless bee-disease." It may be the malady in a modified form. I suggest that he give salt water liberally, and if no improvement is observed, to replace the queen with a new one. I believe that Dr. Miller has no faith in this cure; but so many have reported to me success by its adoption, that I am disposed to think it effective I have never had occasion to try it personally.—A. J. COOK.—American Bee Journal.

Mr. Robert Shaw, of Rosemont, Ont., says: "It takes me all my time to control the swarming fever in the apiary. I will give you an article as soon as I can get time. Bees all doing well; gathering lots of honey."



TORONTO INDUSTRIAL EXHIBITION, SEPT. 5TH TO 17TH.

The Western Fair.

Below we publish particulars of detailed prize list of the Western Fair to be held at London, Ont., from Sept. 15th. to 24th.

HONEY AND APIARY DEPARTMENT.

Entries close on Tuesday, September 13th. Entrance Fees—25 cents each entry.

Entries will be taken after above date, but only upon payment of double the usual entrance fee.

Exhibitors showing honey not the product of their own apiary, in competition for prizes, shall forfeit any prizes awarded, and be barred from exhibiting for two years thereafter.

Reasonable space will be given exhibitors for a proper display. A fee will be charged those only requiring the privilege of selling honey. Removals from the exhibit must be filled at once from a reserve supply.

Exhibitors are not allowed to sell less than whole sections of honey.

Queens and colonies cannot compete for more than one premium.

CLASS 54—BEES, HONEY, AND APIARY SUPPLIES.

1 Honey, Display Comb in most marketable shape, product of one apiarist in 1892 $5 $3 $2.

2 Display and Quality Extracted, in most marketable shape, product of one apiarist in 1892, $5 $3 $2.

3 Honey, Comb, not less than 20 lbs., quality to govern, $3 $2 $1

4 Extracted, not less than 20 lbs., in glass, quality to govern, $3 $2 $1.

5 Best Granulated, in glass, not less than 10 lbs. $3 $2 $1.

6 Crate Comb, not less than. 20 lbs., in best shape for shipping and retailing, $3 $2 $1.

SPECIAL PRIZE GIVEN JOINTLY BY THE ONTARIO BEE-KEEPERS' AND THE WESTERN FAIR ASSOCIATIONS:

7 Honey, Best general display and quality of Comb and Extracted, Wax, etc., arranged in the most attractive manner, the product of the exhibitor, $20 $10 $5.

8 Display of Queens, to be put in such shape as to be readily seen by visitors—blacks not to compete. $3 $2 $1.

9 Beeswax, not less than 10 lbs., $3 $2 $1.

10 Comb Foundation for surplus honey, not less than 10 lbs. $3 $2 $1.

11 Comb Foundation for brood chambers, not less than 10 lbs. $3 $2 $1.

12 Honey Vinegar, not less than one gallon $3 $2 $1.

13 Maple Syrup, not less than one gallon, $3 $2 $1.

14 Display of Apiarian Supplies, exhibitor's manufacture. Silver Medal.

15 Comb Foundation Machine, making best foundation for brood chamber on the ground, Bronze Medal.

16 Greatest variety of Queens, put up in same shape as for display of Queens—Diploma.

17 Bee Hive, for all purposes in the apiary—Diploma.

18 Best Bee Hive, for extracted honey—Diploma.

19 Best Bee Hive, for Comb honey—Diploma.

20 Honey Extractor—Diploma.

21 Wax Extractor—Diploma.

21 Foundation Mill—Diploma.

23 Foundation Press—Diploma.

24 Best One-Piece Section for honey—Diploma.

25 Best Dovetailed Section for honey—Diploma.

26 Package for retailing Extracted Honey, labelled—Diploma.

27 Bee Smoker—Diploma.

28 Bee Feeder—Diploma

29 Largest and best display of honey-bearing Plants, properly named and labelled—Diploma.

30 Queen Cage, such as is admitted to the mails by postal laws—Diploma.

31 Extras.

Differences in Colonies, etc.

WHY SOME GATHER MORE HONEY THAN OTHERS, AND HOW TO MAKE THEM EQUALIZE THE AMOUNT OF HONEY STORED.

A Correspondent writes that he has noticed for some years back, that of many colonies in the spring which were exactly alike, as nearly as he could discover, some colonies would yield an excellent surplus, while others would give very little or none at all, and says: "Why is this? Please answer through Gleanings." Here is a question which used to bother me greatly, for I was formerly troubled in the same way; but of late years I have succeeded in making the most of my colonies, which were worked for honey, produce nearly like results; that is, if one colony contains 40,000 bees and produces 100 lbs. of honey, I obtain about that amount from every colony containing that number of bees, while one having 20 000 bees gives a yield of about 45 lbs.; for a small colony will not give quite as large a yield in proportion to its numbers as a large one. After carefully studying

the matter I found that colonies I pronounced "exactly alike" on May 15th. would not be so at the time the honey harvest was at its best. The trouble was I did not have a thorough knowledge regarding the working force of my bees at all times, nor of the interior of the hive. For instance, the colony which I called the best on May 15th. might become the poorest by July 10th, at which time the honey harvest arrived. This might be owing to two causes, one of which would be the failing of their queen, and the other that the colony would reach its maximum of strength some time previous to the harvest, either of which is sure to lessen the yield. I have often noticed that a colony which winters extremely well, and goes to breeding rapidly in early spring, is generally sure to produce less honey than the colony that begins to breed rapidly from forty to fifty days previous to the honey harvest. The reason seems to be, that the queen in such a colony as breeds rapidly very early ceases her prolificness to a very great extent by June 5th. to 10th, this allowing the bees to put the first honey coming in into the brood-combs, rather than forcing it into the sections, as does the queen which arrives at her maximum egg-laying at this time. If this is not the case, the colony becomes demoralized by becoming too strong at this time, and so goes loafing around, or, what is still worse, contracts the swarming mania, either of which is against a large yield of honey. If the bees become over anxious to swarm, or the queen ceases to be prolific, so that the bees get the start of her and store honey to any great extent in the brood-chamber during the first of the honey harvest, that colony will be an unprofitable one. The remedy is, to keep the queen on only a few combs early in the season, or take away a part of her brood to strengthen other colonies till the right time has come, when her extra powers will raise bees that will come at just the right time; then coax her to do her level best, and you will succeed. At this time give all the combs the hive will contain, and let her spread herself to her greatest capacity; then the colony will reach its strongest point just when the harvest is on, and thus bend every energy at storing in the sections rather than crowding the queen or loafing around. Again, the giving of a colony a large amount of surplus room to start with has a tendency to make the colony an unprofitable one, which has not a force of bees large enough to occupy the whole of the surplus apartment at once. They seem to become discouraged, and, instead of taking possession of a part of it, they will often cluster on the outside, and crowd the brood out with honey, never entering the sections at all. I usually give only section room, or room in the surplus apartment to the amount of 15 to 20 lbs., and a part of this space has combs in it left over from the previous season, thereby coaxing the bees into the sections wit their first loads of new honey. In a week or so, more room is given, and so I continue to give surplus room as needed. In this way a good yield of honey is obtained from all the colonies. If the season is so any colony gives a good yield It is the attending to the little items in bee culture that gives success.

CROOKED COMBS.

In a paper which I recently picked up I found the following words:—"In the fall, after extracting the honey from the partly filled sections, and recasing the sections of empty combs (as we use no separators), the combs are not always perfect in these sections. When we find one side a little fuller than the other, we put the two full sides together, and the hollowing sides together. No matter if the full sides of the combs should touch each other; when the bees begin operations the following season they will cut right through, building out the other sides equally, and the occasional crooked ones are thus made straight." Upon reading the above I began to wonder if the writer had ever practiced the plan given, and, if so, how it could be that his experience was so much different than mine had been when trying the same plan. In every case where I ever put two combs in sections or brood-combs even, so that they touched each other, I have found that the bees always left little bridges of comb from one comb to the other, so that, when the combs were pulled apart, the capping of one or both combs was broken, thus setting the honey to running and making the sections unsalable, unless put back on the hive for the bees to recap the cells. In doing so, the bees nearly always remove the honey out of these damaged cells, so that the whole process requires nearly half as long as it does to fill a section from the start. This causes a great waste of time to the colony, for they are thus kept fussing over a bad job instead of doing new work. My plan has been to place such crooked combs at the top of a warm room, on a piece of canvas, until thoroughly warmed through, when the combs can be bent and straightened to the perfect satisfaction of the operator. In this way I have a sure thing of it; and as the work is performed in the winter it is much more cheaply done than in having the bees make a "botch job," of it in the summer.

G. M. DOOLITTLE.

Gleanings, July 2.

THE
CANADIAN BEE JOURNAL.

ISSUED 1ST AND 15TH OF EACH MONTH.

D. A. JONES, - - - EDITOR

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***

Thus far, during the present honey season, our early predictions have held good—that honey was likely to be produced in large quantities this season. In fact, the clover, wherever the weather was dry enough, has produced very liberally. In some localities there has been a very large quantity of rain, especially early in the season. The clover honey was not as thick this year as usual on account of the excess of moisture; but the basswood honey, which is not so much affected by rain, is much thicker; in fact our basswood honey this season is very fine and unusually light in color. Unless the sun shines so hot on the thistle bloom as to destroy it, we may expect a large yield from the thistle as well. In fact, just now the bees are gathering some from thistle as well as basswood. Our basswood trees are just laden with flowers, and the limbs seem to droop from their weight and the honey they contain. We have hived swarms of bees within the last few days that commenced gathering from the basswood within one hour after they were hived, and were carrying in honey as rapidly as an old established colony. This, of course, was where they were hived upon clean bright combs that were suitable for the reception of honey at once. We think we are quite sure of at least three weeks of basswood bloom this year, as the bees commenced gathering a little from the 12th to the 14th, and by the 15th it was in full swing. It is now the 25th—ten days—and it seems to be yielding better every day. We do not recollect when the basswood was yielding so liberally, or seeing so many bees on Canadian thistle. It just shows that, should either one of them fail, the other would be ample to keep our colonies storing to their fullest capacity for some time. From present appearances we would not be surprised to find the thistle yielding well till about the end of August, as there are many plants that will not be in bloom for two weeks yet. In fact, in wet seasons we do not hesitate to say that in many localities there is more honey produced from the thistle than from either clover or basswood. But, as I have frequently stated before, without careful inspection it is difficult for any person to determine the quantity of thistle honey as compared with that from basswood that is being gathered, and it is not unfrequently the case that two-thirds or three-fourths thistle honey mixed with basswood will pass for all basswood honey, as the flavor of the thistle is so easily affected by the stronger and more distinct flavor of the basswood. We would advise all those who have small after-swarms now to return them to the parent colonies as a tendency, caused partially from plenty of rain, will be for colonies to swarm too much; and this is also hastened by the unusual heat of the last few days. Where it is possible, hives should be shaded and protected from the direct rays of the sun, especially during midday. The entrance should be left open at full width, and the lids and cloth

covering the frame might be raised slightly at the back to enable a current of air to pass up through the hive. This will assist in carrying off the moisture in the hive, and ripen the honey more rapidly, especially where hives are tiered up, as it requires a very large force of bees to fan their wings in order to draw a sufficient current of air through the supers back to the bottom of the hive out of the entrance. The opening at the top will give them sufficient ventilation, causing the draft to enter and the air to pass through every portion of the hive.

***

Now is a good time to change old queens for young ones ; as a hive being queenless or without a laying queen in the height of the honey season, is not so important as it is to have a young laying queen the following spring to build up a colony rapidly.

EXCHANGE AND MART.