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## OUR OWN APIARY.

WE told you on page 75 that when we completed the examination of those in clamps and packed in various ways, we would report. We have now examined them all. One clamp was packed in chaff as follows:— a platform was made long enough to hold about fifty hives, allowing them to be set about two inches apart. This platform was raised six inches above the ground, resting on scantling; boards were then put up in front and behind about eight inches high. The shallow box thus formed, (8 inches deep and 4ft. wide,) was filled with chaff and a second floor laid over those portions on which the hives were to set, thus giving eight inches of dry chaff packing under the hives; boards and posts were then placed in front and rear. The hives were set about two inches apart on this platform the lids removed, entrances left open and two quilts placed on top of each colony. We next made spouts to fit the entrances to the hives. These spouts reached to the outside of the clamp in front small notches being cut in the bottom front board of the clamp to allow the spouts to pass out; thus securing a continuous entrance for each colony. Boards were then placed in front and behind, leaving about 12 inches in front and 16 inches behind, as spaces to be filled. Dry chaff was packed tightly in these spaces, also placed about 18 inches deep on the top of the hives. Now you will observe that the hives placed in the clamp were 2 inches apart, twelve inches from the front of clamp, 16 inches from the back with 18 inches of packing on top and 8 inches under. The posts and boards in front of clamp

were about 2 feet higher than the back. A slanting board roof was then placed on the clamp, (leaving a space between chaff and the roof,) the steepness of which prevented the wet from getting through to the packing. The bees in this clamp were found in finer condition on examination than those in the bee-house, although those in the latter came out in very good condition, but they seem to have lost more bees by flying out, dropping on the ground and dying, while those in the clamp lost very few, the bottom board of some hives not having a spoonful of dead bees on them. Our other clamps were packed with straw and sawdust, the size and shape of the clamps being about the same as the one we have just described with the exception of being so much longer, some of them holding from 80 to 90 colonies each. The hives in these were placed about the same distance apart as the first and having the same quantity of packing all around, but for these clamps we could not procure good dry sawdust, and we were forced to take it from a large pile which had been lying in the mill yard all the summer and had become thoroughly saturated by the rains. As it was also impossible to procure chaff we had to use this, but in order to prevent the bad effects of the damp sawdust against the hives, we packed about 3 inches of dry straw tightly around the hives. If the sawdust had been dry we should not have used the straw. In spite of the long severe winter one clamp that contained about 80 colonies when examined had but three dead ones, one having been very weak and the other two from queenlessness. The rest were all in fine condition, yet not in quite as good condition as the ones taken from the same yard and set in the bee house; as we told you on page 75 of the JOURNAL that one only had died in the bee-house. Had this sawdust been dry, we feel certain that those in clamp

would have wintered as well as those in the bee repository, which is surrounded by walls of sawdust about two feet thick. The reason we put two quilts on each colony is that when examining them in the spring before taking them out of the clamp, after moving back the sawdust we lift off the first quilt which has more or less sawdust on it leaving the one next the bees quite clear, and in the examination we let no chaff or sawdust fall into the hive. From these experiments we are convinced that no person need construct a bee-house for wintering, when they can procure dry sawdust, or chaff, and pack them in clamp.

#### MY FIRST REPORT.

**S**INCE you solicit reports from subscribers, I will venture to offer a few items of my experience with bees, and this being my first report allow me to go back a little for a starting point and give two years' report at once. In the Spring of 1883 the bee-fever began to get hold of me, and I resolved to give more attention to bee-keeping than I had done heretofore. Believing that the summer stand is the proper place to winter bees, I felt desirous to obtain the best kind of hive for that purpose. Accordingly I sent for a sample of the D. A. Jones' Double-Walled Porous Palace Hive, which came to hand in due time, and pleased me so well that I concluded to construct all my hives on the same principle, but altered the depth so that the frames would be just right to hold two tier of sections,  $5\frac{1}{4} \times 6\frac{1}{4}$ . I also made the walls four inches in thickness, and some of the hives are made two-story high, and long enough to accommodate two colonies in summer, and a third one can be put in between them in the winter if I choose, an entrance being made in the centre for that purpose. In the fall of 1883 I had fifteen colonies in those hives, and for winter covering I first put over the frames a piece of cotton cloth, then two thickness of old fullcloth, or carpet, and then above this about six inches of chaff. Three of these colonies were on Langstroth frames hung lengthwise in the hive, with a space beneath them of about four or five inches, which was filled with dry chaff, except a vestibule one-half inch wide across the front end of inside of hive, in order to give ample ventilation and access to out door entrance. This idea of put-

ting chaff under them I borrowed from Mr. Hasty's plan described in *Gleanings in Bee Culture* for 1883, page 597.

On March 24th, 1884, I made the following entry in my diary, "Have examined bees to-day and found young brood in every hive; seven colonies full and strong enough for immediate honey harvest, five medium and three rather weak." The three weak ones were those that had the chaff under them. On the 11th of April they began to bring in natural pollen and all seemed to be doing well, until on the 23rd of April those colonies which had been considered weak seemed resolved to improve their condition in a summary way, and to accomplish this they performed a capricious freak. One colony swarmed out and entered the hive with another weak one. I then went and put a fresh card of honey into the hive in order that they might have plenty of food, thinking that they would be all the better for being united. Meanwhile I examined the hive which they had left to see if I could discover any cause for such conduct, and to my surprise I found the queen alive and well, (her wings had never been clipped to prevent her going with the swarm), and about fifty young bees crawling around the combs, also considerable brood, larva, and fresh laid eggs in three frames. I proceeded to cage the queen, intending to introduce her to my other weak colony, which had now become queenless. At this juncture I was called away from home on some business which detained me until towards night, and therefore I could not be present to watch movements. About sunset I went and opened the hive which I supposed contained the united colonies, and behold it was empty of both bees and honey. They had, evidently, swarmed out again and gone in with another strong colony. Apparently some severe fighting was done before the business was finally settled, for the platform in front of this hive was literally filled with fresh dead bees, none of which were there when I left the apiary a few hours before. When peace was restored I suppose they set to work and took home their stores which they had left. Next I went to introduce the deserted queen to the queenless colony mentioned above, and sure enough they too had absconded bag and baggage, not a trace left behind. Thus ends the history of those three colonies that were put into winter quarters with chaff under them.

Question.—What was the cause of such conduct on the part of those bees?

The most plausible reason which suggested itself to my mind was that the chaff below became saturated with moisture and when warm weather came on it soured, and the smell thereof

became intolerable, and therefore they sought for more agreeable quarters. If anyone has a more intelligent reason to give I would be glad to see it explained. But the most unintelligible part of the whole matter is, why did they leave their queen behind? Who can tell?

Three colonies having disappeared—not dead—I had but twelve left to commence with in the Spring of 1884. These increased to twenty-seven, mostly by natural swarming, and gave me 701 lbs. of surplus, mostly comb honey in one and two pound sections, averaging about fifty-eight pounds per colony—Spring count.

Last fall, when preparing my bees for winter, I added one new feature to the usual top covering of cloth and chaff. After putting the cloth over the frames, I laid on four thicknesses of common newspaper—I think a piece of building paper would be better—and then put the chaff upon that. The paper effectually prevents the passage of air, and consequently any rapid escape of heat. Yet it absorbs the moisture, passes it off into the chaff and thus it escapes. This plan worked admirably—beyond my expectations; while the paper next to the bees would feel dry and warm, the top of the chaff above would sometimes be soaking wet, or crusted over with frost. The entrance to hives was left open full width, being 8 inches by  $\frac{3}{4}$ . All except one colony had their natural stores just as they had prepared them for themselves; two or three that seemed a little short I gave sugar syrup to make up the deficiency. Thus prepared for their long winter repose, they took their last fly for 1884 on the 15th of November. Cold weather then came on, and came to stay. After the middle of December it was extremely cold. On Christmas morning it was 30 degrees below zero. Mean temperature for the month of December as indicated by my thermometer, carefully noted every morning, was seven above zero. Mean temperature in January, 1885, was seven below zero; lowest point reached during this month was 40 below zero. The mean temperature for the 1st twenty-three days of February was ten below zero. On the 24th of February it began to moderate. On the 27th the bees had a good fly after having been confined to their hives 104 days, much of which time the cold had been intense. Examination at this date found most of them in good condition. Five colonies had been badly affected by diarrhœa, and considerably reduced in numbers. One had evidently smothered in the early part of the winter, entrance being closed with ice. All but one of the surviving colonies had more or less brood. It appeared now as though the hardest of the winter was over, and I removed the snow which

I had shovelled up around the hives in January. But winter was not over; the 17th of March came down nineteen below zero, and the wind blew like a blizzard for about two days and nights. From this to the 23rd the thermometer ranged from ten to sixteen below zero, and I think that my bees suffered more damage and loss during those seven days, than they did all the previous part of the winter. Two of those colonies which had suffered from diarrhœa succumbed to the cold winds and froze to death, two others have since dwindled away until one has become extinct, the other having a valuable queen. I took her and a few bees, put them into a card of brood, placed them in a cage made of wire cloth—after G. M. Doolittle's plan for framing nuclei—and hung them in a hive with a populous colony to see what would be the result. My stock is now reduced from twenty-seven to twenty-two. I hope to get through without further loss. Bees are bringing in natural pollen very lively the past few days; thermometer up to seventy-six on north side of house; it seems quite summer like.

By way of experiment, last fall, when I was fixing my bees for winter I arranged one colony with a five inch vacant space below the combs, full size of hive, otherwise prepared same as the rest. This came through one of the best.

For another experiment I selected some combs which contained no honey, no attention to pollen, put them into a hive, with a light colony, removed all other combs, and then fed them for winter stores some early gathered honey, which I suppose, was mostly the "so-called honey dew" it was so nauseating to the taste that it was unfit for use in the house. Amongst its many flavorings we could plainly distinguish the taste of green willow. It was worthless for anything else, so I wanted to see if bees would live on that alone through the winter, and they did and are in prime condition now. The inside of hive and comb are as clean to-day as they were last summer. Do not think that half a pint of dead bees could be found in or around their hive since last fall.

The 29th of last October I visited an apiary where they were brimstoning some of their bees. I secured a queen and about one-half pint of bees, caged them on three two-pound sections, placed them in the pantry adjoining our living room, which was in constant use every day, temperature kept from 50 to 70 degrees, very seldom if ever went below fifty above zero on the coldest nights. The queen and some of the bees lived through, and they are now caged upon a comb of brood, hung in a hive with another colony. They

reared some brood while in the house.

JOSHUA BULL.

Seymour, Wis., April 22nd, 1885.

Doubtless the odor arising from the chaff and dead bees had much to do with their absconding. There being too much room under the combs and the brood chamber so large that it was impossible for them to keep up the necessary amount of heat was another bad feature. We find that when combs running towards the entrance, or in other words, entrance at end of combs that the light shines in between each range of comb and that when so arranged bees have swarmed out more than they otherwise would. Others have noted the same fact. There is no necessity to have bees swarm out if properly managed. We can make almost any colony "swarm out" or prevent it, if we so desire. If the combs are placed far apart they are much more liable to "swarm out" than when combs are arranged more closely, as the farther apart combs are the more bees are required to carry on the same amount of brooding. It is not unusual for bees to "swarm out" and leave their queens behind. If instead of removing the snow you had shovelled it over them, your bees would not have suffered afterwards as they did. We do not believe that bees could be smothered under any depth of snow as we have had them buried under a depth of more than ten feet and they have come out all right in the spring. There are many points of interest in your report, which if carefully read will doubtless prove valuable. Allow us to thank you for your most excellent article and we hope to hear from you regularly in future.

#### KEEP YOUR PACKING DRY.

I HAVE wintered more or less bees on their summer stands every winter, except two, for the last ten years. I use the Quinby hive for a packing box, and as the packing has to be removed to examine the combs, I have had pretty good opportunities for observing condition

of the packing in early spring. No matter whether it was chaff or sawdust I always found it wet next to the outside board, caused by the moisture from the bees being condensed by coming in contact with the cold surface. The packing would gradually become more and more damp, the water soaking downwards, till at the bottom board the packing was so wet that water could almost be squeezed from it with the hand. Of course in freezing weather this wet packing would be frozen solid and the bees then would be in as bad a plight as a man whose clothing had become wet and then frozen about him. I examined what is called a chaff hive this spring, both bottom and sides being packed in this case, with sawdust. On removing the bottom, I found the sawdust frozen solid and in the sides it was wet about two thirds of the way up, placing the bees in a worse condition, in my opinion, than if they were in a single walled hive. Some years ago when Mr. A. I. Root, of Medina, O., first got the craze for chaff hives, I wrote him, telling him what I had observed. He replied, saying that the packing would dry out in summer. No doubt it would do so, but it is in winter and spring it should be dry to be of any use to the bees. Last fall I put a lining of factory cotton inside my hives to keep the packing from coming in contact with the cold outer wall. The cotton is tacked to strips half an inch square and about four inches apart, making an air space of half an inch between the packing and the wall. With our arrangements this can be very readily done and the lining can be quickly removed and rolled up with its strips and stored away for another season. I am very well pleased with the result. I had six twin hives packed with wool cushions on the sides and top, 20 packed with granulated cork and 12 packed with sawdust on the sides, all having quilts of wool on top. A single hive, previously described, had sawdust packing and a quilt of wool. Out of 77 stocks thus prepared 71 were able to fly after four and a half months continuous confinement to their hives. On overhauling them since, we united two with others, leaving 69, four of which are weak, but the remaining 65 are nearly all in that condition which makes a beekeeper smile with satisfaction on pulling back the quilt from the combs in early spring, and will be ready to attend to the clover harvest by the 15th of June next.

The wool packing was all dry. I placed a rim under the frames to raise them two inches above the bottom board. The cork in contact with the frames was dust dry. In some cases it was frozen to the depth of an inch or so on the bottom board, and in contact with the rim. The sawdust was not in a good condition. In some cases it was pretty dry, but in others it was wet

to the depth of four or five inches on the bottom board.

I like wool the best. The bees packed in it did not come out for a flight for some days after the others had flown, although they had not seen sunshine for four months and a half. On tapping on the quilt over the cluster they made a very low hum, as much as to say "What season of the year are we in now anyway." Those packed in cork did nearly as well. Frank Cheshire says that as a non-conductor of heat cork is four times as good as dead air. I shall use wool and cork for packing in future, but no more sawdust for me.

I have 77 stocks more in my cellar at home, which I have not yet touched, and I bought 52 stocks last fall, which we put into a cellar about 30 miles north of Lindsay. I had a letter a day or two ago from the party in charge, stating that they seemed to be all right. I am in hopes that five per cent. will cover my losses in cellar wintering, but I shall report further after we carry them out.

The bee-keepers around here are very much pleased with the CANADIAN BEE JOURNAL. In course of a few weeks most of them will have become subscribers.

Lindsay, Ont.

The above is another indication of what care and scientific management will bring about. All of Friend Cornell's experiments have been interesting and this is no exception to the rule. It shows that bees can winter both indoors and out with perfect safety when put up properly. Your report should stimulate those who have lost their bees to try the coming season to follow more closely the examples of those who have been successful. There is no doubt of the fact that for outdoor wintering the surplus moisture must be got rid of. If it is allowed to condense in the honey and on the combs, or saturate the packing around them and freeze, good results cannot be obtained. It will not take many years to educate people to the fact that cold and moisture are two of the principal causes of our wintering troubles. Let us hear from you after you examine all your colonies, as we know you will note all interesting points and bring them prominently before our notice.

S. CORNELL.

## QUERIES AND REPLIES.

UNDER THIS HEAD will appear each week, Queries and Replies; the former may be propounded by any subscriber, and will be replied to by prominent bee-keepers, throughout Canada and the United States who can answer from experience, as well as by the Editor. This Department will be reserved for the more important questions, others will be answered in another place. We hope to make this one of the most interesting departments of the JOURNAL.

### LEAVING ENTRANCES OPEN.

QUERY, No. 9.—SARNIA, ONT.—In the cold days of spring, when there is no honey flow, and nothing but pollen to gather, would you keep the entrances closed or would you allow the bees to fly out at pleasure?

O. O. POPPLETON, WILLIAMSTON, IOWA.—I would certainly allow bees to fly.

M. EMIGH, HOLBROOK, ONT.—Regulate the entrance according to the strength of the colony and let them fly at pleasure.

DR. A. B. MASON, WAGONWORKS, O.—If the bees have plenty of stores for brood-rearing keep them at home if possible, but not by closing the entrances.

H. D. CUTTING, CLINTON, MICH.—In this locality I never close the entrance so the bees cannot fly, unless compelled to do so by a desperate case of robbing.

PROF. A. J. COOK, LANSING, MICH.—When it is very cold and windy I prefer to keep them in whenever it is possible without worrying the bees. If they worry I would let them out.

DR. J. C. THOM, STREETSVILLE, ONT.—Keep entrances closed on cold days, if you can do so without making the bees uneasy, also in doubtful weather. This requires very careful management however.

S. CORNELL, LINDSAY, ONT.—On bright days when there is a strong wind cold enough to chill bees the entrances should be kept closed. I have picked up chilled bees on the sidewalks in town on such days.

DR. C. C. MILLER, MARENGO, ILL.—I never fasten bees in hives except when moving them. I do not take them out of cellar till pollen comes. If I wintered outdoors perhaps I should try to keep them from flying out on unfavorable days by shading the entrances.

G. M. DOOLITTLE, BORODINO, N. Y.—If the hive was completely shaded it might do to keep



the entrance closed, otherwise there would be bad results from so closing it, or the bees would wear out more by trying to get out than they would by flying in search of pollen.

ALLEN PRINGLE, SELBY, ONT.—It depends upon circumstances. At such a time if you are feeding to stimulate breeding it will be necessary to shut the bees in during very unsuitable weather for flight, otherwise they will, under the artificial stimulation, assuredly venture out in unfavorable weather and be prematurely lost. This is one of the secondary causes of "spring dwindling." On the other hand if the bees are not being fed or stimulated in any way they can pretty safely be left to their own instincts as to when to leave home.

H. COUSE, THE GRANGE, ONT.—In cold spring weather leave entrance open about quarter of an inch, if left entirely open the bees are more exposed to the cold and the weaker colonies are liable to be robbed. As the days grow warmer and the nights being yet cold, the entrance should be opened in the mornings and closed in the evenings, gauging the opening according to the strength of the colony. After bees have had a good cleansing flight they don't usually fly out much when the weather is unsuitable, unless there is pollen, honey or feed to entice them.

R. MCKNIGHT, OWEN SOUND, ONT.—It is not safe or advisable to keep entrance to hive entirely closed except in case of robbery, or under some extraordinary circumstance. It irritates, excites and confuses the inmates to such a degree that unless free upward ventilation is given them they may be smothered, and free upward ventilation is not always desirable in cold weather. Indeed very populous hives—even when covered with wire cloth—will sometimes crowd up to such an extent and pack the spaces between the combs so tightly that they suffocate one another. This has been found to be the case in transporting bees where the wire cloth was not sufficiently removed from the frames so as to allow the bees room to crawl out and spread themselves over the top bars of the frames. It will be a wise course to contract the entrance in cold weather so as to allow but one or two bees to pass out or in at a time, but not sufficiently so as to lead them to think they are imprisoned.

BY THE EDITOR: We always keep the entrances to our hives closed during the cold weather in the spring and fall or when it is unfavorable for the bees to

fly out, more especially when they are rearing brood rapidly as it is then more necessary that the entrances should be closed entirely or closed so that only one bee can pass in or out at a time. By this means a more uniform temperature is kept up. We close our barn or stable doors and do not leave the doors of our houses open during the cold weather, and why should we allow our bees to fly when many of them would be lost in the spring just at the time when it is more necessary that all should be saved?

#### THE BEST LOCATION.

QUERY No. 10.—OTTAWA, ONT.—I want to pick out a spot for an apiary, and would like to know what the surroundings should be to make the location a favorable one; and should my bees be protected from wind, &c., by the lay of the ground, or by wood fence or what?

G. M. DOOLITTLE, BORODINO, N. Y.—A gradual slope to the south east, protected from winds by woods, would be my choice.

PROF. A. J. COOK, LANSING, MICH.—I should prefer a dry location, with gentle descent either South, East or West. A wind break is very desirable.

DR. J. C. THOM, STREETSVILLE, ONT.—Protect from wind on west and north, in spot facing east or south, water near, (small stream), low trees or shrubbery, high fence or wall to protect, if trees are wanting.

DR. C. C. MILLER, MARENGO, ILL.—I should like a spot sloping to the south, protected on the sides whence cold winds by hills or trees, in preference to fences, with trees for shading the apiarist when at work in the apiary.

M. EMIGH, HOLBROOK, ONT.—A spot where willow, soft maple, elm, apple, and raspberry are within easy reach. Where plenty of white clover and basswood grow naturally. Protected on the north and west by high board fence or trees.

S. CORNEIL, LINDSAY, ONT.—Plenty of alsike clover, white clover and basswood. A row of buildings, a high board fence, or a high hedge of evergreens, on the north side for a windbreak. The lay of the land is not of much importance, for convenience I prefer a level yard.

DR. A. B. MASON, WAGONWORKS, O.—As bees returning to the hive "slow up" when nearing it, I think it would be a good plan to have the apiary protected from hard winds by either natural or artificial means. Think a nice evergreen hedge better than a wood fence, certainly much more durable.

H. COUSE, THE GRANGE, ONT.—The first objects should be to pick out a locality where there is a goodly amount of honey producing plants and trees. Then choose a spot where the ground slopes gradually to the south or east, or thereabouts, and protect from the north and west winds by a high light board fence, if not otherwise protected.

H. D. CUTTING, CLINTON, MICH.—Different localities require protection from different quarters. Look well about you, find some one who is making a success of bee-keeping, see how he protects his bees and get what information you can from him. Become a subscriber to the CANADIAN BEE JOURNAL, and in due course of time you will know just where you want your apiary and how to protect it. I know of one man that protects his apiary with a "big dog," but I don't suppose you will want any such protection in Canada.

ALLEN PRINGLE, SELBY, ONT.—A favorable location for an apiary would, as a prime requisite, be surrounded for some miles by a good honey producing country, the main essentials of which would be an abundance of alsike and white clover, basswood and buckwheat. As to the mere location or site itself, it should be sheltered from the west, north west, north, and north east winds, and be convenient to a brook-let or other small watering place. The "wind-break," if an artificial one such as a high board fence, should not be close to the hives.

O. O. POPPLETON WILLIAMSTOWN, IOWA.—I consider this question to be of much more than ordinary importance. For outdoor wintering a thorough windbreak is indispensable, and nought is equal for this purpose to having a dense thicket of evergreens entirely around the apiary. Such a protection will also be very valuable during the fall and spring. A lesser protection would probably answer as well during the summer. A light board fence is better than no protection at all. It is also important that the apiary should be located on ground that slopes sufficiently to quickly carry off all water that falls on it.

By THE EDITOR: We would prefer a location where portions of the ground

are both high and low, as in the wet season the high would be better while in dry seasons the low would be preferable. The surroundings as far as bee pasture is concerned should consist of honey producing trees and shrubs, fruits, clovers, &c. Especially should there be basswood and clovers which are two of the principal honey sources. We prefer high grounds to the north and west for wind break, or better still near a wood. A high board fence from 6 to 8 feet high forms a good shelter from the wind. We have the latter around the majority of our own apiaries.

## SUNDRY SELECTIONS.

L. A. BLACKBURN, CEDAR SPRINGS, ONT.—I see that some of our bee friends complain that the JOURNAL is small, but I think that may be easily overcome by each one sending all the subscriptions they can, also by sending an article as often as possible: for my own part I have not the ability or time to devote to it, but will do what I can. I enclose you my report, which I think is correct. In this section out of 292 hives, fall count, there are only 17 left. In spring of 1884, I started with 6 colonies, increased to 17: weighed and packed them in clamp for wintering, and I have to-day one left. I have kept bees for the last fifteen years and never lost but one before in wintering, but am not discouraged yet as I am better off than most of my neighbors. Now, Mr. Editor as you have agreed to do the "fixin'" please attend to it.

We have printed Friend Blackburn's letter just as he sent it to us and will leave it our readers to judge whether it requires any "fixin'" or not. We are sorry to hear of the great mortality among the bees in your section and trust that those who have lost so heavily will not be discouraged but will try again.

W. S. HART, HAWK'S PARK, FLA.—It was with a great deal of pleasure that I received the first number of the CANADIAN BEE JOURNAL. I have been anxiously looking for it ever since we met in Toronto in September, 1883, as I then received a hint from other parties that something of the kind might be looked for after a while. It is true that I am in an entirely different climate and

country from yours, and will find much in the JOURNAL that will not apply here, but I can assure my southern bee-keeping friends that they cannot afford to do without it. I tell them "if D. A. Jones does not give you more than your dollars worth during the year I will return your money." I can well afford to make this offer for two reasons: 1st There will be no excuse for calling on me for the money and 2nd If there was I should still be ahead, as the last half-hour with you in Toronto has been of the value of many dollars to me. Just set me down as a permanent subscriber and worker for the interests of the C. B. J.

REV. D. BEATTIE, CAMPBELLFORD, ONT.—You call for reports. Well, as I am an obedient novice, I give you mine. It is certainly not very encouraging. If you intend to have a corner in the CANADIAN BEE JOURNAL for "blasted hopes" you can put my report there. I clamped in winter quarters to colonies. I did so with as great care as possible, according to the directions given by Mr. Jones; that was done about the 15th November, 1884. From that period until about the 1st of March, there was no chance for a fly, nor did they fly then, although the weather was favorable for a few days. I then became very doubtful about the little pets, but did not venture to disturb them. During the second week of April the weather again became warm and, as I thought, tempting for a flight, but the beauties made no signs. I then dug into the clamp and found the bees apparently all snug and comfortable, not a particle of frost, only a clammy dampness over the combs, and the bees all dead. I am sorry to say I do not stand alone in this section in such a "blasted hope" condition. I find on enquiry that nearly all bees wintered in clamps have perished this winter. I think the idea here as to the cause, is that the bees gathered in the fall much honey-dew, as it is called, and had few or no flights during the winter to empty themselves. A friend who was leaving this part of the country transferred from his cellar to mine three colonies about the last week of January. Two of these survived, but I found them very bad with dysentery and most of the bees dead; the queens, however, are both alive and laying a little, and I hope to bring them through.

## QUESTIONS & ANSWERS.

### TIN SECTION STRIPS.

ISAAC LANGSTROTH, SEAFORTH, ONT.—How large do you make your folded tin to hold sections and how do you fasten them in half story? The half stories I saw in Toronto last fall had

a  $\frac{3}{8}$  strip nailed on bottom which would leave a  $\frac{1}{2}$  space between sections. Would not the bees dirty the outside of the sections by travelling between them? The  $\frac{3}{8}$  strip seems to be in the way of bees coming up to the outside of outside sections.

When the frames come even with the top of the hive it is necessary to elevate the sections about  $\frac{3}{8}$  inch above the frame providing you use no honey board. There should always be  $\frac{1}{4}$  or  $\frac{3}{8}$  inch space left, generally called "the bee space," to allow the bees to pass up and down; if it is much more "brace combs" are the result, and if much less, propolis. If the frames are below the top of hive you can tack a piece of iron or tin on bottom of section case. The folded strips of tin are about  $\frac{3}{8}$  inch high and long enough to reach across the case; they may be set on metal instead of on the bottom or placed up  $\frac{3}{8}$  inch, when frames come to the top of hive or in other words so placed that they will leave  $\frac{3}{8}$  inch space between frames and sections, or when honey board is used between that and the sections. Many are now using slotted honey boards with sections resting on slats and no space left excepting under the honey board. Thus far our bees have never soiled the outside of the sections and we believe that there will yet be found a method of arranging the sections so that the bees will be able to pass in in every and any direction, and consequently the sections and capped sections will be soiled much less.

### CAGED QUEENS.

ISAAC LANGSTROTH, SEAFORTH, ONT.—I would like to ask a question or two. First, tell me, in keeping queens caged in storing, if it is necessary to keep workers with her or not, and will the bees feed her through the holes or will it be necessary to put feed in with her, if so what kind of feed is best?

When caging queens for that purpose we prefer to cage them on a comb containing honey, placing several young bees in with them. An ordinary box

case [without cover or lid, pressed into the combs would be convenient. If the bees neglected to feed her she would only have to put her head into the cells and feed herself.

#### BREAKING SECTIONS.

D. P. CAMPBELL, PARKHILL, ONT.—Would you kindly inform me if there is any trouble with your new sections, in regard to breaking the capping of the comb, in taking them out of the crates, as when you draw them about half an inch there is nothing to keep them apart, if that is not a fault I think there will be no trouble to get straight combs with them without separators. I have made a new case for their use, will tell how it is made in JOURNAL in due time, as it is something new and not like any in use yet that I know of.

Thanks, Friend Campbell, we shall be pleased to have your description and to hear all about it. We can see no reason why any difficulty should arise, in the removal of sections when properly managed.

#### APICULTURE.

BY ALLEN PRINGLE.

**A**MONG the recent industries of rapid growth in this country, bee-culture stands prominent. Of course, as a homely art, bee-keeping is no modern industry, being as old as history; but in its scientific developments it is of recent growth. In these times, when science is properly taking its place at the helm in all departments of human industry and activity, it is not strange that it is promptly assuming the guidance of bee-culture. This is a utilitarian as well as scientific age; and this is why bee-culture is being so rapidly developed, for its extraordinary growth is only in the ratio of its utility. Though known to commerce for 2500 years, hitherto it has been followed and known, in this country at least, principally as a local industry. But bee-culture, from the soundest economic considerations, ought undoubtedly to become a great national industry fostered and protected by the state. Apiculture is naturally a part of, and closely allied with, agriculture, inasmuch as the nectar gathered by the one is immediately derived from the same fields and forests that yield the abundant ingatherings of the other. Indeed, the bulk of the honeycrop of this country (which is, in round numbers, about 100,000,000 pounds annually) comes from the bee-keeping which is in connection, more or less, with farming.

But this is not the principal reason why bee-culture must take rank as an important national industry. The postulate is fully warranted by the following fact or facts:—When the agriculturist takes his grain to market, he takes with it more or less of the fertility of the soil; when he takes his stock and dairy products to the market, he does the same thing, only, perhaps, in a less degree. But, when he takes his honey to market, he does nothing of this kind—he takes none of the fertile elements of his soil along with it. When the skilled apiarist, guided by science, so controls, directs, and manipulates his bees that they gather the rich nectar in tons from a given area, representing hundreds and even thousands of dollars, he impoverishes neither his own land nor that of his neighbor: he simply secures that which, if not gathered, “wastes its sweetness on the desert air.” Likewise, when a country exports its surplus grain or stock, it also inevitably parts with more or less of its fundamental agricultural resources; but its exported honey-surplus represents no corresponding impoverishment of soil. It would therefore seem clear that, from economic considerations alone, bee-culture ought to and must take its place among the most useful and important national industries.

There is also an æsthetic and hygienic side to apiculture, though in this practical and materialistic age mere sentiment must be subordinated to utility. But the more advanced scientific bee-keeping of to-day may, without assuming much license or latitude, be called “one of the fine arts.” To the cultured and æsthetic devotee of art proper in the recesses of his own studio, who has never practically studied the nature and habits of the wonderful little honey-bee, and manipulated it from day to day, this claim for our beloved art may excite a smile. Nevertheless, the apiarist devotee who has studied, observed, and handled the marvelous denizens of his hives for twenty years, will affirm his art, no less than the flavor of the nectar it produces, to be indeed *finer*. Ladies of high culture and refined tastes are engaged (and successfully too) in bee-culture with all the enthusiasm which is naturally inspired by a congenial and ennobling pursuit; and this is the best proof of our contention as to its æsthetic status. Being withal a healthful occupation, bee-culture invitingly offers itself to those in delicate health and not strong enough for hard physical labor. In numerous instances such persons, by engaging in this pursuit, have not only procured liberal means of subsistence, but have also recovered lost health and strength. The capital required is comparatively small, while the average return for skilled exertion is large. Hardly any other legitimate business yields so large a return in dollars and cents for the amount invested and the work bestowed. True, bee-keeping

has its formidable obstacles and serious drawbacks; but these, while sometimes troublesome to the scientific apiarist, are disastrous mostly to the unskillful or negligent, or the mere neophyte. And, even though the cargo of industry sink, not much treasure in money or labor is carried to the bottom, while a very little capital added to the valuable lesson of failure soon sets the redoubtable amateur on his legs again.

The honey-bee—which belongs to the general branch of the animal kingdom called *Articulata*, and to the class *Insecta*, and to the sub-class *Hexapoda*, and to the order *Hymenoptera*, and the family *Apidae*, and genus *Apis*, and species *Apis mellifica*—is one of the most intensely interesting studies in the whole domain of natural history. When the immortal Darwin had the scientific zeal and patience to study the apparent insignificant *earth worm* for forty long years, leaving a field untouched for thirty years for the purpose of studying and observing the habits of these despised creatures, how comparatively easy and pleasant to study the honey bee, which is so much more useful and beautiful! The fact that the honey-bee is so much more serviceable to man than many others of the lower creatures whose nature and habits are equally wonderful, as the ant, for instance, invests it with a double interest to us. Insects which are pests, no matter how marvelous in structure and habit, we cannot study with that intense pleasure and interest we can those that yield so much to our physical as well as mental gratification.

Of the species, *Apis mellifica* there are many varieties—the principal of which are Ligurian or Italian bee; the German or black bee; the Syrian bee; the Cyprian bee; the yellow, Egyptian bee; the amiable, Carniolan bee, of Africa; the superbly beautiful Dalmatian bee; the Smyrniac bee, very popular in Austria; and the stingless bees of South America.

In this country (i. e., Canada and the United States) we have principally the German and Italian bees; but within the past five years the Syrian and Cyprian varieties have been extensively imported into this country by that distinguished and enterprising apiarist, D. A. Jones, of Beeton, Ontario. As the genus *Apis* is not indigenous to this continent, all now existing here have been introduced from the Eastern Hemisphere—first the black and Ligurian races, and latterly the Eastern varieties.

Each of the varieties in this country (vying for "survival" as the "fittest") has its distinguishing characteristics. So far, however, the Italians seem to possess more good points and desirable qualities than any of the other races, and hence are the most numerous and popular among advanced apiarists. Their chief distinguishing qualities are superior amiability, industry, and what may be called patriotism, or indomit-

able energy in defending their homes against invaders, such as robber bees and the "bee-moth"—against both of which they are quite invincible. While different strains of this variety vary considerably in color, they are in general distinguished by three beautiful yellow bands across the abdomen. They also have longer tongues than the German bees, by which they are enabled to sip the nectar from places inaccessible to their less favored competitors. A. J. Cook, Entomological Professor in the Michigan Agricultural College, who has done very much to advance scientific bee-culture in the United States, says on this point, "The tongue of the black worker, I have found, by repeated dissections and comparisons, made both by myself and by my pupils, is shorter than that of the Italian worker, and generally less hairy." In confirmation of this fact, established by Professor Cook's dissections, I have frequently noticed my Italian bees, during a scarcity of honey from other sources, working upon the second bloom of the common red clover (not the *Trifolium pratense*, which the black bee can readily work upon), when the Germans were doing nothing on it, the flower tubes being too long for their tongues.

The black bees (or rather, German, for in point of fact they are not black in color, but a gray-black) have some desirable qualities, though they are now being rapidly superseded by the Italians. They produce nicer comb-honey than the Italians, or perhaps any other race. The proverbial whiteness and finish of their comb are due mostly to the extra capping.

For the Syrian races of bees, Mr. Jones and some other leading apiarists claim some superior qualities. I am inclined to think the Syrian queens (Palestine strain) crossed with the Italian drones, will presently prove to be our very best bees—combining more good points than any other variety. Doubtless, however, the bee of the future will be greatly superior to anything we have at present. For purposes of experimentation in developing such, we have now in America several of the best varieties in existence under domestication. By judicious crossing, in accordance with the well-known laws of *variation* and *heredity*, such a result is quite certain. The vast improvement made in this way among our domestic animals, within less than half a century, fully warrants the conclusion that, in the evolution of things so palpable everywhere, we may in the case of our bees subsidize and utilize the same ever-acting law of progress.

Following the Syrians, and genealogically closely allied to them, we have the Cyprians, though not yet widely diffused. They resemble the Italians, of which they are supposed to be the progenitors. The Cyprian bees have some good points, and one very bad point. They are famous for their fecundity, but equally infamous for their

ferocity, being maliciously expert in using very pointed stings. The variety (unless in this inspiring western atmosphere it requires more amiability) is not likely to become popular, notwithstanding the marvelous fecundity of the queens. It may be possible, by crossing with some bee of good disposition, to mollify their bad tempers and retain their good qualities.

Of the remaining varieties of the honey-bee, and sub-varieties, including *hybrids*, little is practically known in this country, with the exception of one or two strains of the latter. The "hybrids," resulting from a cross between the Italian queen and the German drone, are well known in Canada and the United States, and, next to the pure Germans and Italians, are perhaps most numerous. These hybrids have excellent qualities: they make superb comb; are active and energetic; and I have observed stand the rigor of our Canadian winters much better than the pure Italians; but they are much less amiable.

(TO BE CONTINUED.)

## THE CANADIAN BEE JOURNAL.

D. A. JONES.

F. H. MACPHERSON

D. A. JONES & CO.,

EDITORS AND PUBLISHERS,

BEEETON, ONTARIO.

WEEKLY, \$1.00 per Year, Postpaid.

BEEETON, ONTARIO, MAY 6TH 1885.

A. W. Humphrey, Parkhill, Ont., secretary-treasurer of the North Middlesex Beekeepers' Association, will take subscriptions for this JOURNAL in his section of country from members of that Association.

Foundation remains at the same price as last week, as also does beeswax with lots offering. A good many who have lost all their bees are, we believe, melting up their combs. This is a course we do not advise, as nearly any beekeeper in the same neighborhood would doubtless be glad to get hold of the combs just as they are, for use in his own apiary.

### BEEES BY THE POUND.

Some of our friends who have bees to sell by the pound could do quite a business now by advertising in the CANADIAN BEE JOURNAL as we have dozens of inquiries every day from those whose colonies have been decimated by winter losses.

### APICULTURE.

In this issue we publish a portion of the

article on the above subject, which appeared in the February number of the *Popular Science Monthly*, written by Allen Pringle, Esq., of Selby, Ont. Speaking of it the *American Bee Journal* calls it a "good" article, and we second its remarks very emphatically. Friend Pringle is one of Canada's best apiculturists, and not only is he a practical man amongst bees, but he knows also how to put his practice on paper for the benefit of his brother bee-keepers, and he is very generous about doing it.

### DISCOUNTS.

All through the winter we have been cutting hives and sections, making up extractors, comb baskets, honey knives, &c., in anticipation of a big rush this spring. On account of the great mortality amongst bees throughout the country we want to help those who were unfortunate, and therefore we will give a discount of 5 per cent. off all goods in our list, except foundation on which we can only allow 3 per cent. When our customers lose money by misfortune, we are anxious to share their loss by assisting them all we can and this is the way we take to do it. We will keep the offer open just as long as we can fill orders with our present staff. On odd-sized goods we will quote special prices. We have still a number of colonies which we can dispose of at prices advertised in this number, subject to these discounts.

### A.B.C. OF POTATO CULTURE.

We have just received from Friend Root, of Medina, Ohio, U. S., a book entitled "The A B C of Potato Culture, how to grow them in the largest quantity and of best quality, with the least expenditure of time and labor." The author has been careful to consider all the latest improvements in this branch of agriculture up to the present date. It is illustrated by 20 engravings, is written by T. B. Terry, Hudson, Ohio, U. S. The price is 35 cents, by mail 40 cents. The book is published by A. I. Root, editor of *Gleanings*, is a very valuable work and one which should be in the hands of every farmer and gardener. It contains over 40 pages, and is well printed on fine calendered paper. Hints given in some single pages are alone worth more than double the price of the book. The fact that Friend Root has issued it is a guarantee of its value. Any orders sent to us will be promptly attended to.

### BEE MATTER.

We were told by lots of good friends that we would likely find it difficult to obtain sufficient matter for a *weekly BEE JOURNAL* at first and to tell the truth we felt a little doubtful on the point ourselves, but we decided that come what would

we were going to have a *weekly*, and that we would fill it up with something every week, even if we had to do it all ourselves, though we didn't think it would be quite so bad as that. Well we have our desk fairly covered with good original matter, and it keeps coming in every day, which is exactly what we like to see. We hope our friends will not weary in well doing. Some of their letters may have to lie over for a little until we have space but we will try and have them all appear in good time. Most of our friends remember what we have said about writing matter intended for publication on a separate sheet, but a few still write business communications and matter for the JOURNAL both on the same sheet. It causes us a good deal of extra work when they come to us in this way, and it will be nearly as easy for our correspondents to write them on two separate sheets of paper thus saving us all this extra labor. They may both be enclosed in the same envelope. This will be another way of helping us, by lessening our labor.

## COMPLIMENTARY.

The following is from the *Rural Canadian*, the official organ of the Ontario Bee-Keepers' Association: Messrs. D. A. Jones & Co., of Beeton, have sent us the initial number of the CANADIAN BEE JOURNAL, a neat, well-printed periodical of 16 pp., Royal octavo, to be issued once a week at \$1 per annum. Mr. Jones, the well-known bee-keeper, is qualified, from ability and experience, to produce an interesting and useful journal for his brother bee-keepers; and we have no doubt this new venture will have the hearty support his enterprise deserves. We wish the CANADIAN BEE JOURNAL every success.

HILAS D. DAVIS, BRADFORD, VT.—The initial number of the CANADIAN BEE JOURNAL has come to hand. Allow me this favorable opportunity of expressing my pleasure in the contents of the JOURNAL. I would not only commend you for your very appropriately chosen motto, "The greatest possible good to the greatest possible number," but for your "Good feelings must rule us," also "The right hand" to those who furnish matter for the good of our bee-keeping interests. I trust your work may meet with the approval of all bee-keepers within the United States, and be a financial success to you.

### PRICE LISTS RECEIVED.

F. BOOMHOWER, GALLUPVILLE, N. Y., publishes a neat little pamphlet, supplies, bees, queens, etc., of 12 pages.

WM. CONNELLY, OGDEN, IOWA:—A four page circular relating to Poultry.

ABBOTT L. SWINLON, GOLDSBORO, WAYNE CO., NO. CA.:—Queens, bees, foundation.

W. C. R. KEMP, ORLEANS, IND.:—A four page circular about bees, poultry and supplies, also his revised price list.

C. M. GOODSPEED, THORNHILL, N. Y.:—Two circulars, one relating to bees, queens, poultry, strawberry plants, etc., and the other, his club list of American newspapers and magazines.

## CONVENTION NOTICES.

IN THIS DIRECTORY we will keep continually standing the names, dates, and places of meetings and conventions throughout the year, together with the name of the Secretary of each Association. Secretaries will please keep us posted as to the dates set for their Conventions, that this directory may always be kept complete.

ONTARIO BEE-KEEPERS' ASSOCIATION, at Toronto, during the Industrial Exhibition, between September 10 and 20, 1885. Exact dates will be given hereafter. Jacob Spence, Sec., Toronto, Ont.

NORTH AMERICAN BEE-KEEPERS' SOCIETY, at Detroit, Mich., on December 8th, 9th, and 10th, 1885. W. Z. Hutchinson, Sec., Rogersville, Genesee Co., Mich.

MICHIGAN STATE CONVENTION, at Detroit, Mich., on December 8th, 9th, and 10th, 1885. H. D. Cutting, Sec., Clinton, Mich.

LISTOWEL BEE KEEPER'S ASSOCIATION, at Queen's Hotel, Listowel, Ont., May 16th, 1885. Geo. Brown, Sec.-Treas., Molesworth, Ont.

EAST ELGIN BEE-KEEPER'S ASSOCIATION, at St. Thomas, at the Hutchison House, on the first Saturday in June—6th—at one o'clock. John Yoder, Sec., Springfield P. O.

WATERLOO COUNTY BEE-KEEPER'S ASSOCIATION will meet at Elmira on 11th May at one o'clock p.m. Anson Groh, Sec.-Treas., Hespeler, Ont.

NORTHERN OHIO BEE-KEEPER'S ASSOCIATION, meets in Council Chamber, Norwalk, Ohio, on Saturday, May 9th: H. R. Boardman, Secy., East Townsend, O.

## ADVERTISEMENTS.

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