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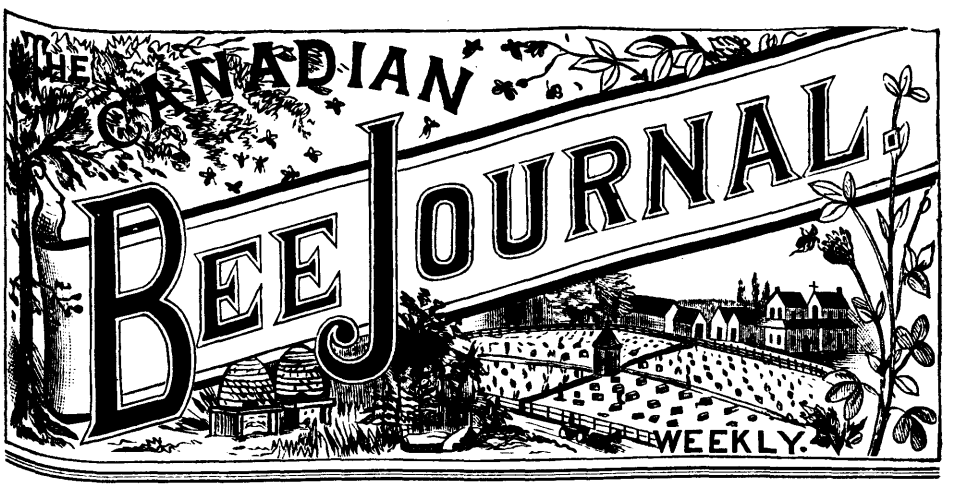

"THE GREATEST POSSIBLE GOOD TO THE GREATEST POSSIBLE NUMBER."

VOL. I. BEETON, ONTARIO, DECEMBER 9, 1885. NO. 37

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Communications on an subject of interest to the Bee-keeping fraternity are always welcome, and are solicited.

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When sending in anything intended for the JOURNAL do not mix it up with a business communication. Use different sheets of paper. Both may, however be enclosed in the same envelope.

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THE CANADIAN BEE JOURNAL.

PUBLISHED BY

D. A. JONES & CO., BEETON.

WEEKLY - - $1.00 PER YEAR

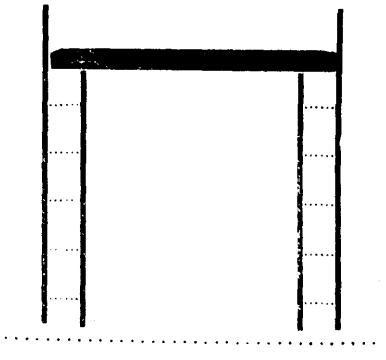
OUR OWN APIARY.

THE WALLWIN BEE YARD.

Now that the bees are quiet in their winter quarters it may not be amiss to occasionally give a description of some of our bee yards, especially as some of the friends have asked us to do so. The "Wallwin Yard" lying about four miles north-east of Beeton contains one acre. We have this yard rented for a long term of years. When we first rented it we levelled the ground nicely, which by the way is a nice sandy soil, in fact it is almost too light. We built a board fence around it setting the cedar posts four feet in the ground. The west and north sides are about ten feet high, south and west seven or eight feet; scantling is nailed to the posts and the boards run up and down. A poorer quality of lumber answers for this purpose just as well as a more expensive. We have two entrances to the yard about the centres of the south and east sides. The land slopes slightly to the south and east. After the fencing was done we planted thirty apple trees and one hundred and fifty grape vines; these we planted in rows arranged so as to form shades for the hives. Of course both trees and vines produced fruit but the owner of the yard seldom harvests any, the students and visitors saving him that trouble. Near the north-east corner we built a dwelling house, further west a bee house is built, standing 12 feet from the north fence so that the sloping roof from the top to the fence against the gable end of the bee-house forms a comfortable place for making and painting the hives with which the assistant in charge usually occupies his spare time. From this work shop he can watch the yard that no robbing occurs and that swarms do not escape to the woods.

THE BEE HOUSE.

Is 20 ft. square outside and 16 ft. inside, making a hollow wall of 2 ft. which is filled with sawdust. We levelled the ground where the sills were to rest, then we laid inch boards (using them as sills) side by side until we had formed the 2 ft. in width all around, next we took strips of boards about 4 inches wide and 2 ft. in length and laid these across what we had already laid, placing them 2 ft. apart from centre to centre and nailing them to the bottom boards with 2 inch nails, this holds the boards or sills to place and forms a solid foundation to which is fastened the foot of the studs of each bent. Bents were then made, using joists 20 ft. long, these were nailed to studding 2x4 in. x 12 ft. and 2 ft. from the top of the studding down, then studding 10 ft. long were nailed 2 ft. in from the outside. The drawing given here shows one bent nailed together.



Strips 1 x 3 inches x 2 ft. are nailed across the rows of studding, and at intervals of 2 ft. right up the rows as shown in drawing, beginning within 2 in. or 3 in. of the bottom; this prevents the studs from spreading when the sawdust packing is put in. After all the bents are raised and fastened in position the building is sheeted outside and in, the roof is put on and the walls packed with dry sawdust as also over the joists,

the floor being laid on the top of the joists; the house is then perfectly frost-proof. Treble doors are arranged on the south side, the inside one having glass in the upper part set in a sliding sash which gives sufficient light for extracting purposes during that season. It will be observed that this bee-house rests on the ground with only inch boards for sills, and yet it is frost-proof. The cheapness of the construction will, we think, commend itself to anyone wishing to build. Similar houses have been built with logs by simply building one log house outside of another. In rural districts this plan could be adopted for bee-house or root-house purposes.

A sub-earth ventilation pipe (6 x 8 inches) passing from the centre of the bee house down to a depth of about four or five feet and then away a distance of two hundred feet at that depth, carries the air into the bee-house, while another pipe 12 x 12 inches runs from the ceiling up through the roof to a distance of ten feet above the gable. Slides in this pipe enable us to control the draught as we choose. By the way, we have not as yet said anything of the sun flowers we have sown in this yard; not for shade so much as to aid us in handling bees and prevent robbing in the fall of the year. We find at that season when bees are inclined to rob, that rows of sunflowers planted between the rows of hives not only form a shade but apparently prevent the bees from seeing so readily from one hive to another. We can go to any part of the yard, open a hive and perform the various duties before many robbers find us out; then pass to some other part and do the same. By this arrangement of sunflowers we can handle bees all day where there are two or three hundred colonies without being bothered to any great extent by robbers, whereas in an open yard they would swarm around us in a few minutes.

For THE CANADIAN BEE JOURNAL.

THE "ANONYMOUS CORRESPONDENT" RISES AND EXPLAINS.

I frankly own that I was mistaken in my supposed identification of "A subscriber (seeking light.") My friend, whom I suspected, neither could nor would have written with the uncalled for asperity which characterizes the second communication.

"A Subscriber (now rejoicing in the light") disclaims the motive that I had charitably imputed to him. He is not pursuing "innocent fun," nor indulging in a harmless joke. He is using "weapons," taking "a shot at folly," rebuking "injustice" and "wrong." "Weapons" are for war. The "anonymous correspondent" has fired a shot, and it gives him satisfaction to think it has "struck home" and inflicted a wound. Yet he has no "desire to pick a quarrel." Oh! no! He is "distinctly for peace!"

I have met these amiable and peace-loving people before. They cause much contention. If a man cuffs you when you are quietly going about doing your own business, and on being asked to explain, says, "You don't wear your shoe properly, wear it more circumspectly in future," you will be very apt to resent it. Then there is danger of a "quarrel." I will not tamely submit to be hit even with such "legitimate weapons" as "irony," "sarcasm," "satire," and "ridicule," when I have committed no fault. There are other "weapons" equally "legitimate" with which it is proper to strike back again in self-defence.

I gave an explanation of my use of the term "the Canadian Bee-paper" which was sufficient to satisfy any reasonable person. The term was not of my choosing, nor was I free to use the title CANADIAN BEE JOURNAL in the columns of the periodical for which I was writing. The responsibility did not rest with me for employing the term which has been objected to. I had no option in the matter. Editors are absolute sovereigns in their own domain. For many years, and up to the lamented demise of the late Hon. George Brown, the *Mail* was never mentioned by name in the columns of the *Globe*. Having offended the autocrat of the *Globe* by patriotically doing my duty, my own name was rigidly excluded from mention in that journal for some time. During my editorship of the Winnipeg *Sun*, it was never mentioned by name in the other two dailies of the city, though they often alluded to it. There is no ground for imputing blame to *me*. Mr. Newman is both able and willing to assume entire responsibility in the matter.

When I have been free to speak of the CANADIAN BEE JOURNAL in my sole individuality, I

have uniformly used the name chosen for it by its proprietors, nor have I ever sought to "belittle" or "injure" it in any way whatever. In common with other Canadian bee-keepers, I hailed its appearance as supplying a felt want, I have written for it, and always, I think with becoming respect. It has had my warm commendation. An editorial notice of it written for the December number of the *Rural Canadian*, before the "anonymous correspondent's" second article came to hand, will testify of my good will toward it.

Matthew Arnold lays great stress on "sweetness and light." "A Subscriber" may be, as he says, now "rejoicing in the light," but he might easily have more "sweetness," particularly when writing honied words for the CANADIAN BEE JOURNAL.

WM. F. CLARKE.

Guelph, Nov. 27, 1885.

Well, friends, we think everybody knows now *who* publishes that "Canadian Bee-paper" and as that was principally the object sought, we will let the matter drop, as no good can come of its continuation and we must adhere to the resolution set out in our first issue "good feelings must rule us."

FOR THE CANADIAN BEE JOURNAL.

IS BEE-KEEPING A SCIENCE?

THE remark is often made, that "bee-keeping as a science is yet in its infancy"; but is this so? Is it either a science, or in its infancy? I hazard the statement that a negative answer is the correct one to both queries. I may be asked why? In reply, I will say, that nothing can be called a science that is not governed by fixed rules, always positive and certain under the same condition; and that nothing can be called an infant that has attained its majority so many years as has apiculture. As a matter of fact, the occupation is so far from being new, that it has existed as such for thousands of years; and I regret to say, we to-day are little, if any, in advance of the bee-keepers of the days of Virgil. True it is, that the late advent of frames has given us a certain amount of control over our bees, that the ancients did not possess, and the invention of certain appliances has made the business more lucrative and easy to carry on than formerly; but these points have nothing to do with the real question. It is true also that we have been enabled by means of our superior advantages to learn many facts not known to our ancient brethren, but these facts have nothing to do with the question of apicultural science. So far as there is any science in the business, the men of olden times knew fully as much as we. They did not, to be sure, know that the queen was the mother of the hive, or that the drones were simply lazy, good-for-nothings, except an occasional one, who died in the performance of the only duty of value he could perform. In this connection I have nothing to do with the science of entomology, for that relates not only to the apis, bnt to the whole insect tribe; the question with which I am dealing, is bee-keeping pure and simple—the raising of bees and queens either for sale, or for gathering a surplus of honey. If the business could aspire to the honor of being correctly called a science, the bee-keepers of to-day might well be ashamed of their ignorance, and that they have not progressed further in their labors. What are the real difficulties that any one even of less than average ability cannot overcome, save and except those that cannot be overcome, by the wisest and most experienced of us? In a good season, any one can obtain a fair quantity of surplus, and the novice will not fall far behind the most expert. In a poor season the expert will be fortunate if his bees gather enough stores on which to winter, and the novice will not fall far behind in this respect. The rearing of queens is a simple matter, and one in which the beekeeper of small experience will succeed; the one of the greatest experience can do no more. The wintering problem is the one that is yet unsolved, but the novice succeeds as a rule as well as the oldest of us all. Where then does the science come in? Losses in winter are as yet laid to many causes; too much and too little ventilation; too much and too little heat; too few stores, and too few young bees when prepared in the fall; but notwithstanding all these contradictions, bees do survive the severest winters if they have sufficient stores, and under any and all the conditions mentioned above. The latest proposition in the matter is the so-called "pollen theory;" as yet however this theory has no proof in its favor. It is true that something like evidence has been tortured into what is called proof, but the fact that bees do survive the severest winters with large quantities of pollen left in their hives, and do not survive at times when they have no pollen at all, is positive proof that the theory is not correct; and that surviving or not surviving is more a matter of accident than otherwise. To sum up the question from the standpoint I take, we find bees living and dying under the same conditions; and under conditions precisely opposite. If apiculture was and is a science, this could hardly be the case, for certain fixed and

positive rules would apply in all cases, and certain results would certainly follow; which results could be predicated as positive and sure. As a matter of fact, however, we are all at sea in regard to wintering, and no one has any advantage over the others. All are alike, groping in the dark, and I am sorry to say, I fear they are all alike so wedded to their idols, that they have become intolerant of the expressed views of others, if they perchance happen to differ from their own, or the general ideas of the multitude. Bee-keeping may perhaps grow to become a science in the bye and bye; but to bring about such a happy state of things, will require not only a large amount of study and intelligent experiments, but a large amount also of tolerance of ideas of others. Let us hope that this millenium is near at hand.

J. E. POND, JR.

Foxoboro' Mass., Dec., 1885.

There are many points *well* taken in in the above article. Your remarks are decidedly well worthy of consideration. Bees *do* winter well and badly under apparently the same conditions, and there are few, if any, who seem to be able to tell the exact cause of success or failure. Yet we think that great advances have been made. There are certain principles which, if lived up to, will bring us so near perfection in wintering that we need not feel alarmed as to future successes. We have so many scientists at work, so much experimenting going on, and so many valuable journals published, to keep all these matters prominently before the bee-keeping public, that it will be our own faults now, if we do not succeed in the business and make it indeed a "science."

FOR THE CANADIAN BEE JOURNAL.

BEE STINGS.

MR. Macpherson's painful experience recorded on pages 494, 495 of the CANADIAN BEE JOURNAL, recalls a similar one which befell the writer of this article in the autumn of 1873. He was inspecting a hive which had been fitted up for exhibition, when a bee buried its sting exactly at the point of the upper lip, right on the projecting tip of flesh from which the moustache marks its centre, and divides to the right and left. The pain at once became very great. The upper lip felt as if it were on fire, and swelled to an enormous thickness. Ordinary applications had no effect whatever. Mouth, throat, stomach and brain, were all powerfully affected by the subtle *virus*. Blotches appeared from head to foot, and the surface of the skin looked like a case of scarlet fever in its worst stage. For about an hour the pain was intense, and though it then began to subside, it left a general sense of nausea, weakness, and soreness which did not completely pass off for several days. Ever since, a bee sting in any part of the body revives the old symptoms to a greater or less extent, and, curious to relate, there is usually a small swelling from the size of a pin-head to that of a pea at the tip of the upper lip.

I had kept bees for a number of years then, and supposed I was well-nigh sting-proof. When I began bee-keeping, a sting used to cause considerable pain and swelling, but I had got over all that, and did not mind a bee-sting more than a prick of a pin. It is usually supposed, and is taught by apicultural authorities, that once inoculated with the *virus* of a bee-sting, you can submit to be stung by these little insects with impunity. But I know this to be a mistake. There are parts of the body which are more sensitive to bee-poison than others, and there are times when the poison of the bee is dangerously virulent. "Forewarned, forearmed." Mr. Macpherson will be wise to wear a veil and gloves hereafter in handling bees, as I have done most religiously since the fall of 1873. With these precautions, even, he will now and then get a bee-sting, if he meddles much with the "prying little fellows" as John Keys calls them. I spent the greater part of my time last summer among the bees, never putting on veil or gloves unless I was going to open a hive, and I got three or four stings on my hands, which renewed the painful symptoms of twelve years ago in a mild form, so mild as to encourage the hope that the effect is gradually and slowly dying out of the system.

I have queried much as to the why and the wherefore of the honey-bee being armed with such a formidable weapon. In addition to guarding its stores, I believe it is important that the busy little worker should be let alone as much as possible, in order to work to the best advantage. Even as it is there is a great proneness to interfere and meddle too much with the interior economy of the hive. I am studying how to manage my bees to the best advantage with the *minimum* of interference. My experience, though painful, has never operated as a deterrent from bee-keeping, but has been, like the blindness of Huber, a stimulus to the con-

quest of difficulties. The pursuit is too fascinating to be abandoned, so long as there are available precautions against danger. There is also a dash of the heroic about it, which gives it a charm for certain minds, my own among the number.

WM. F. CLARKE.

Guelph, Dec. 1, 1885.

We have before heard of friend Clarke's non-infallability to bee-stings. Have you ever tried the solution of ammonia as an internal remedy? We have a good deal of faith in it. Friend Root, in a late issue of *Gleanings* says he does not care very much for drugs of any kind used in this connection. The writer has not since the experience recorded on p. 494-5 been stung at all; when such does occur, however, the effects will be noted.—M.

FOR THE CANADIAN BEE JOURNAL.

THE PREVENTION OF AFTER SWARMS.

RECEIVING valuable hints myself in the CANADIAN BEE JOURNAL, I will contribute my own observations upon "after swarming and upon non-swarming." Considering as I do that the highest production of comb honey can be best secured by non-swarming hives, and increase not being desirable it has been my aim to manage to prevent all natural swarms.

I have not had less than 70 colonies in the spring for a number of years. Losses here in wintering and by spring-dwindling, so far as this writer's observations extend, are entirely traceable to neglect. Robbing can be prevented if seen, and queenlessness provided for, but not in time by the negligent dilatory master of an apiary.

We winter entirely on the summer stands and need no other protection than a tight roof and a good porous covering on the frames. Wheat chaff in a bag is the favorite, because handy and cheap. We need not have to restore and fill long lines of empty hives in the spring, lost by winter-killing.

It will be admitted, we think, that 40,000 bees will produce more surplus honey in one colony than if divided in two, and 60,000 more than two of 30,000, provided the proper conditions as to room and facilities are provided. It may be attempted to disprove this by *a reductio ad absurdum*, extending in the figures. but the practical point and practical limit is what we are after. We know that many apiaries swarm so much as sadly to interfere with surplus honey production. We also know that the old assertion—where it originated we know not—that bees will not swarm if they have plenty of room, is incorrect. In Mr. Langstroth's great work it is so stated.

If that were true in all cases we would have a *perfect* check upon swarming.

But in a majority of cases it can be relied upon, if care be taken that a good healthy queen is in the hives. For several years I have been able to keep down below one-fourth increase by natural swarms, and have not had an after-swarm in many years.

The 10 frame L hive is used by me and at the proper time they are contracted to 8 or 9 frames, depending upon the condition of, and amount of brood in the hive.

The contraction is done to force the bees into the cases and right here the superiority of the 10 frame hive is claimed — for it gives the larger area of storage room above—a vital point. Then no matter how fast honey flows, even as high as 17 lbs. in a day shown on the scales, room can be provided by tiering up and taking off the cases just as soon as capped. Now, supposing that when two or three cases full of section half filled with honey, and of course with bees, they lose a queen and swarm out, heavily, or if the case be such the old queen leaves, leaving say the equivalent of some sheets of eggs and brood in all stages of growth.

If a large swarm it takes the great working force of the hive and the parent colony would not in that *honey season* finish the cases on the hive. We are working for comb honey, observe. If we take off the cases with the bees in them take out the brood combs below, and after cutting away all but one or two selected cells to remain in the old hive, take at least three combs of brood and bees to the new swarm, filling out to eight frames with foundation and then place the cases on the new stand, we have a honey producer of the first class.

By uniting two old ones in like condition as left above, we can in a very few days have another.

With long experience I have not known either the prime or united colonies to swarm again.

Others may have tried this plan and not have succeeded so well as the writer. Here it has succeeded well, and I have from each of several colonies taken 250 lbs. of honey.

J. W. PORTER.

Charlottesville, Va., Nov. 16th, '85.

You are right in maintaining that large strong colonies give better results than smaller ones. We would prefer 40,000 bees in one hive, if pounds of honey was the object to be gained, than

20,000 in each of two different hives. We know well that bees sometimes swarm no matter what the size of their repository, but if plenty of room be given them and the honey is extracted sufficiently often the swarming impulse will be reduced to a minimum. Where the production of comb honey is sought it is more difficult, and greater skill is required to prevent it. We have no doubt your system works well with you, but we find that different localities require different management. Your plan of contracting your ten frame Langstroth hive for comb honey is a good one. We would feel inclined to reduce the number to six frames, as we think even better results could be secured than from eight. It has been proved by careful experiment that no more comb than the brood will entirely occupy should be kept in the brood chamber if you wish to have all the honey placed in the sections.

FOR THE CANADIAN BEE JOURNAL

REMARKS ON QUERY 44.

QUERY 44 has caused the "doctors" to differ. Prof. Cook, Mr. Corneil and Dr. Thom in answering the first part of the query in the negative evidently base their conclusions on a comparison of the number of *atoms* of the different elements which go to make up the sugar in honey, The two former say the composition of honey (or the sugar in it) is 6 *parts* carbon, 6 oxygen and 12 hydrogen. The words "parts" as explained by their deductions means *equal portions either by volume or weight*, what they doubtless meant to say was *atoms* instead of *parts*, The formula for the sugar to which they refer is C 6, H 12, O 6, which means that the compound consists of these 3 elements uniting in the proportions of 6 *atoms* of carbon, 12 *atoms* of hydrogen and 6 atoms of oxygen. If the atoms of these elements were of the same size or weight their conclusion might be correct, but they are neither. Carbon being a solid and the others gases no volumetric proportions in the resulting compound body exists between the elements of which composed. Weight is the only correct principle upon which comparison can be made. If an atom of hydrogen weighs 1, one of carbon will weigh 12, and one of oxygen 16 therefore the sugar of which honey is composed according to the two first named gentlemen, will consist of 72 parts *by weight* of carbon, 12 of hydrogen and 96 of oxygen, or over 50 per cent. of oxygen. Dr. Thom's formula also gives over 50 per cent. oxygen in the sugar. I agree with Prof. Cook as to the second part of query.

J. A. MORTON.

Wingham, Nov. 30th, 1885.

FOR THE CANADIAN BEE JOURNAL.

KANSAS HONEY HARVEST.

SEEING you have asked for reports from your subscribers I will send you mine even poor as it is. In the fall of '84 I had 66 colonies, but doubled back to 53 which I thought would winter over. I had them in 8 frames Simplicity hives with a six inch case on the top filled with dry forest-leaves. During a moderate spell in February, some eighteen colonies answered to roll call. On examining the others I found them starved, some with fifteen to twenty pounds of honey in the hive, the bees dead on the centre combs where the honey was all consumed, showing plainly that the long protracted cold weather had prevented them from leaving the cluster till starvation ensued. But my losses did not stop here, they kept dwindling and dying with diarrhœa till *all* were gone save only *one* queen and about a teacupful of bees. Well I was resolved not to go into friend Root's column of "blasted hopes," so I sent to Iowa to friend Foster and got fourteen nuclei and more than doubled them and got $40 worth of good fall honey. I have sold bees enough to pay all the nuclei cost and have seventeen colonies left all in good condition packed in leaves on the summer stands.

HOW I LOCATED MY APIARY.

I last spring resolved to try an experiment in this matter of locating or shaping my apiary. I formed a complete hollow square setting the hives four feet apart facing *outward*, then if I had had bees enough I should have formed another square within the first facing *inward* leaving a space between the two squares of some six feet; then in passing round and doing the necessary work in the apiary I would all the while be behind each row of hives and not as I used to do be behind one hive and yet in the doorway of another. After trying it one season I am much pleased with the arrangement and cannot see any difference in the honey gathering of those facing north from those facing east or south.

J. W. MARGRAVE.

Hiawatha, Kan. Nov. 24 '85.

From your description of the way you arranged your hives one would

almost imagine that you had been studying the tactics of the British soldiers in the Soudan to prevent the Mahdi from annihilating them. During the honey season it makes little difference whether the hives are facing north or west, but in early spring or late in the fall we would much prefer to have them facing south or east. That your bees starved with plenty of honey around them shows clearly that they lacked the means of getting to it. Had you adopted the Hill device it would have enabled them to pass over the tops of the frames to their stores. The latter part of your report is certainly very encouraging, and is a further proof that proper management gives good returns. What other business could you have invested in that would have returned your money three or four fold?

Rural Canadian.

EXHIBITION GRIEVANCES.

THE CANADIAN BEE JOURNAL of September 30th, contains the following paragraph: "At London, because the directors could not or would not give sufficient space to bee-keepers, several loads of comb and extracted honey were driven right home again. If the directorate of the Western Fair expect to retain the interests of the bee-keeping fraternity they will find it necessary to use them a little differently, and to endeavor to meet their views in the matter of accommodation. For a certainty we know that their demands on the directors were extremely modest, and *should have been* acceded to."

A trifling error has crept into the above statement. The blame is attributed to "the Directorate of the Western Fair." This is a mistake. It was the Directorate of the Provincial Fair which had the control of arrangements, and the above is only one of many complaints as to bad management at the recent exhibition, so much so that the local papers have joined in a chorus of condemnation; and there seems to be a general wish that the Provincial may not be appointed at London again. The Toronto Industrial is the only one of our great exhibitions at which the honey product is properly appreciated. Usually, honey is dumped in among "Dairy Products," and a solitary prize offered for it along with butter, cheese and bacon. At the recent Guelph Central, there was a prize offered for comb honey only. No notice whatever was taken of the extracted article. Mr. J. R. Morison, a young bee-keeper who has recently started the "Royal City Apiary," was obliged to pay $1 entry fee for the privilege of making an exhibit of his honey, and was then taxed $2 for the additional privilege of selling. The sum total, $3, was quite a percentage to deduct from the small profit on his sales.

Exhibition directors must be made to know that honey and bee-keepers' requisites are as deserving of premiums as a great many other things that figure on their prize lists. Bee-keepers have the matter very much in their own hands. Let them attend the annual meetings of the agricultural societies, and urge the claims of apiculture to more prominent recognition. The conspicuous place assigned to the honey department at the Toronto Industrial Exhibition was mainly obtained by the energetic efforts of Mr. D. A. Jones, and if other producers will go and do likewise, there will be fewer grievances of this kind to complain of herea ter.

If we have blamed the wrong parties we are truly sorry. That "someone blundered" is however not disputed.

Rural Canadian.

NOTES FOR NOVEMBER.

IN addition to the two most generally adopted modes of wintering which I gave in detail last month, I will give a third, which often proves successful in sand or gravelly soils. Some bee-men of experience, indeeed, prefer it to either of the methods already given. It is called the clamp method, and consists in burying the bees beyond the reach of frost. A peculiar modification of this has existed in Russia for generations past. There perpendicular pits resembling wells are dug, which they fill in the fall with hives placed one above another, commencing about twenty feet below the surface. After the pit is filled in this manner as far as the frost line, it is covered by a platform perforated by a ventilating shaft, the interval between the platform and the surface of the earth being filled up with straw or leaves, trodden down. There the bees remain undisturbed during the long and severe Russian winter; and the fact that Russia produces a very large amount of wax and honey is sufficient to attest the efficiency of this method of wintering in a severe climate. The mode generally adopted in America, however, is by excavating in sandy loam a trench two feet in depth, and the same in width, and as long as will accommodate the number of hives you wish to bury. Make a drain sufficient to draw off all the water likely to accumulate; fill the clamp one foot in depth with dry leaves or straw well trodden down; place a few boards over this at inter

vals sufficient to afford a resting-place for the hives; place them in rows close togrther, giving ventilation by removing either tops or bottoms (if tops cover with cotton quilt). In this mode of wintering I prefer the removal of bottom boards, not only for the purpose of giving the necessary ventilation but also that all dying bees may drop free of the combs and thus prevent the accumulation of filthy mass of dead bees among the ranges of comb. Having placed the hives in position, place a saucer or two containing a mixture of equal parts of powdered arsenic, sugar and flour in the trench to destroy any stray vermin that may find their way in. Place boards at a slope from the sides of the clamp to meet over the hives; cover all thoroughly with one foot in depth of straw and one of earth, and the work in done.

You may now leave them to undisturbed repose until the return of the warm settled spring weather. When appearances indicate that we may expect a day or two of sunshine open the clamp at night, disturbing the hives as little as possible, and carry them to their summer stands in the darkness.

If it is objected that no sufficient provision has been made for ventilation to the clamp, one tube may be placed for the purpose in the middle of it,especially if the number of stocks buried be large: but beware of creating a draught, this having often proved fatal. Choose a rather cold day toward the end of November for making the clamp.

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.

DO BEES PROMOTE HEAT BY EXERCISE.

QUERY No. 46.—We read that "bees add to the heat-producing method of consumption of oxygenated food that of producing heat by exercise." In what way does exercise contribute to the production of animal heat?

S. CORNEIL, LINDSAY, ONT.—Muscular exercise is often resorted to in winter by some of the higher animals as a means of increasing the bodily warmth. But muscular labor or exercise is transformed heat whose source lies in the combustion of the food by respiration. It is just so with the bees. They have only one "heat producing method," namely, the combustion of the carbon in the honey by the oxygen of the air which they breathe. When the cold becomes inten se they increase the rapidity of their respirations, or in other words, they increase the draft of the furnace, to increase the production of heat.

This reply was not received along with the rest of friend Corneil's and so was not inserted with the other replies to the same query.

DAMPNESS IN HIVES.

QUERY No. 47.—A great deal has been said in connection with the wintering question as to the advantages and disadvantages of dampness in hives and in the air surrounding them. (1) What is the point at which air may be said to cease to be damp and become dry? (2) How is the degree of dampness or dryness correctly ascertained?

G. M. DOOLITTLE, BORODINO, N. Y.—Have no instrument for testing it.

H. COUSE, THE GRANGE, ONT.—Not possessing a hygrometer could not say.

JUDGE ANDREWS, MCKINNEY, COLLIN CO., TEX.—These questions do not apply "Way down South in Dixie."

M. EMIGH, HOLBROOK, ONT.—Can't say just at what point it would become dry. I have noticed when my bee-cellar was fifty degrees or above everything seemed dry. If it gets much below forty degrees the cloths will be damp and water will drip from the hives.

PROF. A. J. COOK, LANSING, MICH.—(1) It is governed wholly by the heat. (2) By examination with a thermometer with a wet bulk. Do we know that dampness hurts bees, except that it condenses in the hive and gives them a shower bath? Condensed moisture in the hive must be bad.

DR. DUNCAN, EMBRO.—The simplest test for for an excess of moisture is a decanter full of cold water placed in the room; the moisture will collect on the sides and run down in drops of water. If any one wants to test it accurately according to chemistry they would require a dry and wet bulb thermometer or the hair hygrometer of Saussure.

O. O. POPPLETON, WILLIAMSTOWN, IOWA.—This, and the three preceding questions are evidently asked by the same person, and while they are questions of much interest to practical bee-keepers, it requires a much better knowledge of chemistry to answer them correctly, than bee-keepers usually possess. I hope to see them

fully answered by some one who can give facts not theories.

P. H. ELWOOD, STARKVILLE, N. Y.—(1) At Philadelphia the average humidity of the air is 73 degrees, that is, it contains about three-fourths of the vapor required for saturation. At St. Helena the average humidity is 88 degrees; At Madrid it is 62 degrees. Madrid has a dry climate, St. Helena a moist climate, and Philadelphia neither, as far as the air is concerned. You will do well if you keep a bee-cellar as dry as St. Helena. (2) By the hygrometer.

G. W. DEMAREE, CHRISTIANSBURG, KY., U.S.—If you undertake to fix a point in temperature where dampness will give place to dry air, I think you will find that theory will not square with facts to your satisfaction. Dampness is not always the result of the same combination of causes. Hence each case must have the remedy applicable to itself. To illustrate, build two cellars just alike so far as you can see and you will find one showing more dampness than the other.

DR. J. C. THOM, STREETSVILLE, ONT.—The "advantages" of dampness I have never seen particularly lauded in this connection. An ordinary hygrometor will answer your question, as to ascertaining correctly the degrees of dampness. In an ordinary way, where a hygrometer is not obtainable, "gumption" is a good guide. If the dust in a cellar is dry, no mould visible, walls not very damp, and a moderate amount of fresh air procurable, it does not require one to digest a treatise on Hygrometry before it can be decided whether a repository is dry enough to winter bees in or not.

J. E. POND, JR., FOXBORO, MASS.—(1) The answer to this query will and must be relative, for it depends largely upon the surroundings. Air is dry or damp as it is more or less charged or surcharged with moisture. I have never made a test and doubt whether any test can be made that will prove of practical utility. (2) The degree of dampness or dryness can only be ascertained by practical tests; these tests are easily made in the atmosphere ordinarily, but I am of the opinion that it will be exceedingly difficult to make such test inside the hive. Ordinarily a correct estimate can be made by careful examination.

S. T. PETTIT, BELMONT, ONT.—The air *always* has more or less water in it. When it has all it can hold it is said to be saturated, The warmer the air the more water it takes to saturate it. The air in a damp cellar is saturated, but if the cellar air be heated by any means it is not saturated because it will hold more water and in its desire to get more it will suck up or evaporate the water in and on every damp thing in th cellar. There is no exact dividing line between dryness and dampness. Air that is not saturated is always trying to get more water—a thousand and one things around us also have a thirst for water when not saturated; such as wood, hay, paper, etc. When air is fully saturated it is as damp as it can be and dry wood, paper, etc., having a greater desire for water take it out of the air and become damp. (1) When the degree of saturation of the air is such that its affinity for water is less than that of most substances around us is said to be damp—when greater it is said to be dry. (2) By means of an instrument called a hygrometer.

ALLEN PRINGLE, SELBY, ONT.—The first question is not properly stated and involves an absurdity. The terms *dampness* of the air and *humidity* of the atmosphere are relative terms, and do not in a scientific sense stand for the amount of vapour present in the atmosphere. They represent the proportion which the amount of vapour in the atmosphere bears to saturation. *Saturation* means the maximum amount of vapour which air at a given pressure and temperature is capable of containing. Thus 2 grains of vapour are sufficient to saturate a cubic foot of air at a temperature of 30°, the barometer at 30 inches, while 8 grains are necessary to saturate a cubic foot at a temperature of 70° with same pressure. It is, therefore, the temperature of the atmosphere as indicated by the thermometer and the pressure as indicated by the barometer which govern the amount of vapour the air can contain. The capacity for vapour increases slightly with increase of pressure, and increases greatly with increase of temperature. From the above premises it would follow that there is no "point at which air may be said to cease to be damp and become dry." Of course the aqueous vapour in the air affects our sensations very materially, as well as the health of our bees in winter repositories. If the vapour is in excess we feel oppressed, if deficient a dry roughness. Practically, the nearest we can come to the "point" the querist asks for would be I suppose the point or condition of the air most agreeable to our sensations and conducive to health, The average humidity of the atmosphere in the temperate zones would seem to range from 75 tc 90 per cent, of saturation. (2.) To correctly ascertain the degree of dampness or dryness of the air a hygrometer including a thermometer is necessary.

S. CORNEIL, LINDSAY, ONT.—*Damp* and *dry*,

when used to indicate the condition of air with reference to the percentage of saturation, are relative terms, relating to some percentage of saturation which we adopt as a standard of comparison. This standard may vary at different periods of the year, and, in different places ; but for every month, in every place where observations have for some time been regularly made, there is an ascertained percentage of saturation which is used as a standard. Air having a less percentage of saturation than the standard is properly said to be dry, and vice versa, Observations made at Toronto for 43 years show that the average percentage of saturation for the year is 77. January having an average percentage of 83 is the dampest month, and May, having an average percentage of 71, is the driest. Again, we may adopt some particular percentage as an arbitrary standard. For instance, a percentage of from 65 to 75 is found to be the most healthful for dwellings. If a greater or less percentage exists at any time, the air may be said to be too damp or too dry as the case may be, but whenever either term is used it should relate to some standard which all understand. (2) The degree of dampness or dryness can only be accurately measured by the use of a hygrometer. Of course if we find water standing in drops on the surface of some object and know that the water could get there only by being condensed from the air, we are safe in saying that the stratum of air in contact with that object was at some time saturated. When the percentage is below the point of saturation any guess that we may make is entirely unreliable. All admit the necessity of a thermometer to measure temperature, It is much more difficult to judge approximately of the degree of humidity without a hygrometer.

BY THE EDITOR.—The point generally indicated by the hygrometer in our bee-houses is from 65 to 75 degrees ; above 80 we find it beginning to get too damp. We would not care to have the humidity below 55. We know of no correct way to ascertain the exact degree of dampness or dryness except by the hygrometer.

DOES RUNNING WATER EFFECT THE AIR OF A CELLAR?

QUERY No. 43. —If a small stream of water runs through a cellar in what way does it effect the air of the cellar ?

ALLEN PRINGLE, SELBY, ONT.—It tends to its purification.

H. COUSE, THE GRANGE, ONT.—By giving an even temperature.

JUDGE ANDREWS, MCKINNEY, COLLIN, TEX.—Texans know nothing, from experience, about cellar bee-houses.

H. D. CUTTING, CLINTON, MICH.—Water will absorb gases and will deodorize and purify the atmosphere.

DR. C. C. MILLER, MARENGO, ILL.—I don't know. Some claim that bees winter better in such a cellar.

S. T. PETTIT, BELMONT, ONT.—It tends to purify it as well as to bring the air to its own temperature.

DR. DUNCAN, EMBRO ONT.—It keeps an even temperature and purifies the air : does not create as much dampness as stagnant water.

G. M. DOOLITTLE, BORODINO, N. Y.—My impression is that it would effect it but little in any way aside from helping to keep the temperature even.

P. H. ELWOOD, STARKVILLE, N. Y.—I should expect it would add a little to the moisture of the air and help keep the temperature more uniform A cellar can be dry (that is the air of the cellar) with a stream of water in it.

DR. J. C. THOM, STREETSVILLE, ONT.—Absorbs noxious gases. The most common of impure gasses, carbon dioxide and carbonic oxide being largely soluble in water. Sulphuretted hydrogen is also absorbed and removed by a running stream.

J. E. POND, JR., FOXBORO, MASS.—It reduces the dampness by attracting the superabundant moisture and carrying it off. It is easy to explain why this is the case, but I suppose the fact is sufficient, without giving a scientific explanation of the matter.

PROF. A. J. COOK, LANSING, MICH.—It modifies the temperature greatly and very likely sweetens the atmosphere by dissolving and bearing away foul particles. We all know what delicious sweet butter is made in those famous spring houses.

O. O. POPPLETON, WILLIAMSTOWN, IOWA.—The temperature of the air will be changed so as to more nearly correspond with the temperature of the running water, and will also remain steadier than it would otherwise do. This is the principal way the air will be affected.

G. W. DEMAREE, CHRISTIANSBURG KY. U. S.—A current of air issues from the ground with the

stream of water, of a much higher temperature than the air is likely to be in the cellar, and when it mixes with the colder air, the temperature is raised. And as this flow of warm air is perpetual it not only keeps up a higher temperature in the cellar than would be there without it, but it helps to keep the air pure in the cellar also. To satisfy yourself of the facts of the above, take a look at any "spring" on a cold frosty morning and you will see a mist like a fog rising at the mouth of the spring. This is caused by condensation which takes place when the warm air issuing from the mouth of the spring comes in contact with the external cold frosty air.

S. CORNEIL, LINDSAY, ONT.—A couple of years ago I asked Mr. Ira Barber, of De Kalb Junction, N. Y., to inform me of the reason why he thought the air in his cellar was very damp. He very courteously replied, stating that he thought so because the cellar was partly excavated in a rock and a stream of water dripped from the surface of the rock and ran across the cellar. My own opinion was that while such a stream might affect the humidity of the air slightly, saturation would not have time to take place if the ventilation were as good as it should be, but I had no opportunity to test the matter myself. Prof. Cook, being the only bee-keeper I knew of who was in a position to make accurate observations on this point, I asked him to do so and let me know the result. Soon after he kindly sent me the following reply: "When the ventilation is perfect the air in the cellar is not affected by water except to render the temperature more uniform. Water does not make air damp." The influence of a body of water in keeping the temperature of a cellar uniform is owing to its high specific heat. In warming it absorbs more heat and in cooling it gives out more heat than any other substance. Arnott says the quantity of heat which will raise one cubic foot of water 1 degree will raise 2850 cubit ft. of air 1 degree. In cooling through a certain number of degrees 113.7 lbs. of water of a given temperature will give out as much heat as 1000 lbs. of iron of the same temperature cooling through the same number of degrees.

BY THE EDITOR.—It keeps it pure and prevents mould, carrying off injurious gases; and if the water is colder than the air in the cellar it is believed by some to condense the moisture, leaving the air of the cellar drier. It also assists in keeping up a uniform temperature.

SUNDRY SELECTIONS.

BIND UP YOUR JOURNALS

S. CORNEIL.—I am pleased with the new binder for the C. B. J. No further binding is necessary as it preserves and protects the paper perfectly. I would willingly now pay fifty-five cents each, if I could have my back volumes of the other bee-papers restored to their original freshness. They have become discolored for want of being bound.

Lindsay, Ont., Dec. 2nd 1885.

THE COLONIAL EXHIBITION.

GEO. E. HILTON.—I have read with interest all that has been said in regard to the Colonial Exhibition, as I have been contemplating a visit to England, being an Englishman by birth and all my relatives living there, except my father's family, I should like to go during this Exhibition. Can you tell me how late in the fall or winter it closes and will there be reduced rates across the Ocean?

Fremont, Mich., Nov. 30, 1885.

The Colonial Exhibition opens in April and continues all summer and until late in the fall. We have not got the exact dates of opening and closing, nor do we think it has been published. As soon as possible we will give the dates, and other information asked for.

CORRECTIONS.

S. CORNEIL.—In the second line from the top my reply, page 555, "Prof. Miley" should be "Prof. Wiley," the mistake being the result, I suppose, of my careless writing. In the fifth line "one-third" should be "one-fourth," an inadvertance on my part.

The second and third tables, pages 567 and 568 should have the same headings to the columns as those in the first. It was so in the manuscript and the letter accompanying the proof stated that they would be inserted, but I suppose they were overlooked. I fear that without these headings the tables will hardly be intelligible.

In my reply page 571. in the 8th line from the top the compositor has left out "powers of grape sugar and cane sugar" after the word "calorific." The word "power" is also left out after "calorific" in the 10th line. "Lethby" should be "Letheby."

Lindsay, Dec. 3, 1885.

We are extremely sorry that in the hurry of making up the forms the "headings" of tables were not inserted. If in reading the tables the headings for Table No1. are read as at the head of each table, the meaning will be easily understood.

THE CANADIAN BEE JOURNAL.

D. A. JONES. F. H. MACPHERSON

D. A. JONES & CO.,

EDITORS AND PUBLISHERS,

BEETON, ONTARIO.

WEEKLY, $1.00 *per Year, Postpaid*

BEETON, ONTARIO, DECEMBER 9TH, 1885

The *Honey Marketer* by Geo. M. Gray, Medina, O., is at hand.

Note the advertisement of the *American Agriculturalist* in this issue. It is a *grand* paper for the farmer.

The *Texas Bee Journal* for November is to hand and is improved somewhat under the new management.

Mr. Chas. Mitchell, Molesworth, Ont. will take subscriptions and grant receipts for the CANADIAN BEE JOURNAL, in his section.

This issue of the JOURNAL will be in attendance at the convention at Detroit, where it will meet many of its old friends—and lots of new ones.

The Bee-Keeper's *Club List*, E. H. Cook, Andover, Conn. Friend C. does a large business in clubbing the leading American periodicals.

Thus says an exchange, "As busy as a bee" means just the right thing. The bee labors about three hours per day, and has a staving good time during the other twenty-one.

Ordere are coming in quite well for spring supplies, under the discount of 5 per cent. offered, but we can stand quite an increase yet. The five per cent continues as per advt.

The *Rural Canadian* for 1886 will be considerably changed in "get up." The size of the page will be smaller and the number increased from 24 to 32. The *Rural* is a first-class farmer's paper and deservedly ranks as the best of the kind in Canada. We wish it a successful continuation.

At our present rate of increase per week the CANADIAN BEE JOURNAL will have over 200 more new subscribers before January 1st; but even that number will not satisfy us, we want another thousand, yes, two thousand if we can get them; and we hope to print such a paper as will do Canada credit—our aim is always *to excel*.

This number of the JOURNAL will be read by all in attendance at the Detroit Convention. Any who are not already on our list will be received with pleasure. $1.00 will get you the JOURNAL for 1886 and the balance of this year "thrown in" free. Our Mr. Jones will take the subscriptions.

THE CANADIAN BEE JOURNAL feels proud of the following at the hands of the *Poultry Monthly*: "An excellent weekly is the CANADIAN BEE JOURNAL, published at Beeton, Ontario, by D. A. Jones & Co. It is printed in good style, the matter is instructive and it reflects much credit on the proprietors for their enterprise."

GOOD WORDS FOR THE CANADIAN BEE FEEDER.

"Bees have consumed this fall an unusually large amount of their winter stores, and many stocks will require feeding. For this purpose the "Canadian Bee-Feeder," made by Mr. D. A. Jones, is certainly the best I have ever used. It makes a light task of what was a disagreeable undertaking with previous appliances."—Dr. Thom in *Rural Canadian*.

HONEY MARKET.

CHICAGO.

Without any material change. White comb honey in one pound frames brings 16 cents; very fancy 17 cents. Dark is slow sale. Extracted honey 6 to 8 cents per pound. Beeswax 25 to 26 for yellow, market steady.

R. A. BURNETT.

Chicago, Nov. 27, 1885

CINCINNATI.

There is a very slow demand from manufacturers for extracted honey, with a large supply in the market, while the demand is very good for clover honey in square glass jars. Prices for all qualities are low and range from 4 to 8 cents a pound on arrival. Supply and demand is fair for choice comb honey in small sections, which bring from 12 to 15 cents per pound on arrival. Good yellow beeswax is in good demand and arrivals are fair. It brings 20 to 22 cents on arrival.

CHAS. F. MUTH.

Cincinnati, O. Nov. 10, 1885.

BOSTON.

Honey is selling very well but prices are very low, and we are often obliged to shade our prices in order to make rates, We quote 1 lb. comb, 14 to 16 cents. 2 lb. comb, 12 to 14 cents. Extracted, 6 to 8 cents.

BLAKE & RIPLEY.

Oct. 21, 1885.

QUINBY'S NEW BEEKEEPING, by L. C. Root, Price, in cloth, $1.50.

THE HIVE AND HONEY BEE, by Rev. L. L. Langstroth. Price, in cloth, $2.00.

HONEY, some reasons why it should be eaten, by Allen Pringle. This is in the shape of a leaflet (4 pages) for free distribution amongst prospective customers. Price, with name and address, per 1000, $3.25; per 500, $2.00, per 250, $1.25; per 100, 80c. With place for name and address left blank, per 1000, $2.75; per 500, $1.70; per 250, $1.00; per 100, 50c.

FOUL BROOD, ITS MANAGEMENT AND CURE, by D. A. Jones. Price, 11c. by mail; 10c. otherwise.

BEEKEEPERS' HANDY BOOK, by Henry Alley. Price, in cloth, $1.50.

A. B. C. IN CARP CULTURE, by A. I. Root, in paper 50c.

ADVERTISEMENTS.

In purchasing articles advertised in the "Canadian Bee Journal" please mention in what paper you saw the advertisement. Advertisers always wish to know which advertisements are most effective.

J. P. CONNELL, Hillsboro, Hill Co., Texas, can fill orders for **Pure Italian Queens** by return mail. Untested Queens, $1.00. Tested Queens, $2.00. Send me your order and send for my circular of Queens, Nuclei and bees by the pound.

Queen City Oil Works!

The Highest Honors and Gold Medal For Our

PEERLESS OIL,

Manufactured only by

SAMUEL ROGERS & CO.

Toronto, Ont.

1842. A Proclamation. 1886

Know Ye! Know Ye All! Men, women and children—that the great staff of editors, headed by Dr. Geo. Thurber, have kept the American Agriculturist at the front for 25 years, are now re-enforced by Chester P. Dewey and Seth Green, the Fish Culturist. We propose to add to the hundreds of thousands of homes, in which the

AMERICAN AGRICULTURIST,

Is read, and revered from the Atlantic to the Pacific as an old friend and counselor. We are accordingly enlarging the Hearth, Household, and Juvenile Departments, and adding other features, so that it is to be, from this time on, a 32-page, essentially a Home Periodical, as well as being devoted to Agriculture and Horticulture. Every person who immediately sends us $1.50, the subscription price, and 15 cents for posting book, making $1.65 in all, will receive the AMERICAN AGRICULTURIST, for 1886, and The American Agriculturist Law Book, just published, a compendium of everyday law for Farmers, Mechanic, Business men, Manufacturers, etc., enabling every one to be his own lawyer. It is a large volume, weighing one pound and a half, and elegantly bound in cloth and gold. The American Agriculturist

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to yield bigger returns by increasing its great army or readers. We distributed 60,000 Presents to those who aided in the work last year, and we are planning to give 100,000 presents to workers this year. Send for confidential terms for workers, when you forward your subscription. Subscription price $1.50 a year; single number, 15 cts.

Send 5 cents for mailing you grand double number of the American Agriculturist, just out, and sample pages with table of contents of law book.

Canvassers wanted everywhere.

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Off all goods which may be ordered now for use next season we will give the above discount. This is to induce early orders and in case you need anything for this season, you could save freight charges and the discount by ordering ALL TOGETHER. Will be given till further notice.

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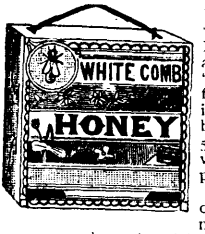
THAT HOLD SECTIONS OF HONEY 4¼x4¼ IN.



We call these in our price list "Honey Boxes for Sections." Each box has a nice tape handle and when adorned with labels "A" or "B," which are made to fit this package, they look exceedingly attractive. The price for boxes is: per 1000, $20.00; per 500, $12.50. The price of labels will be, extra, per 1000, $3.50; per 500, $2.00; per 100, 45c.

In the blank space at the bottom of label (see cut) is room for name and address of producer, and these may be printed in at the following extra charge. Per 100, 30c.; each subsequent 100 to 1000, 12c.; per 1000, $1.25. Sample boxes, labelled, sent on receipt of a 3c. stamp.

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Beeton, Ont

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We can guarantee that they will give satisfaction.

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