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THE CANADIAN  
Bee Journal.

PUBLISHED MONTHLY.

NEW SERIES  
VOL. I, No. 6.

BRANTFORD, ONT. DEC., 1893.

WHOLE No.  
346.

In the discussion upon wintering, we are becoming more and more satisfied that a point not generally noted WINTERING yet which is important and should be brought out clearly is this. It is well to have bees cover their stores, temperature, size of hive, size of cluster must be considered. If bees cover their stores, which perhaps means cover the combs, dampness may be ignored in a way it cannot with large hives or with small clusters and stores towards the outside. Are we right, let us hear more upon this question.

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The Ontario Bee-Keepers Association according to a letter from the ONTARIO secretary S. Corneil, Lindsay, MEETING. Ont., will meet the first Tuesday after the 8th of January, that will be Jan'y 9th and 10th. The meeting is at Lindsay. we have asked for a copy of programme for publication as far as ready up to dates of writing this it has not appeared but it may before going to press. It is our intention to get out something a little special in connection with the meeting this will appear in our next number. Let every one who, expects to be at Lindsay, drop us a card as soon as possible, also give the names of any others that may be going, it will add interest to the meeting to publish such names

\*\*\*

The editor of the *Progressive Bee Keeper* says;—"Did you ever have a bee in your ear. We had an experience of this a few days since. While working in the apiary.

a bee crawled up the side of our face, and when she got to the ear walked in—yes, and kept walking in until nothing but her hind legs could be seen, and we had to have her pulled out with a pair of tweezers. We advise you to guard against letting bees crawl in your ears, as it causes a terrible sensation, even though it be but a tiny bee."

Considerereng that the *Progressive Bee-Keeper* has a hollow headed editor, the journal is decidedly good, we should never have suspected it.

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We had a very lengthy correspondence with the Dominion Government on British and foreign markets for honey, CANADIAN More of this will be given HONEY shortly in THE CAN- ADIAN BEE JOURNAL, as we have information which may prove of value to bee-keepers. We have pleasure in informing bee-keepers that the Dominion Government has just decided to exhibit honey, at the World's fair at Antwerp, Germany next year, here is the letter.

CHICAGO, Nov., 6 1893.

R. F. Holterman, Esq., Brantford.

DEAR SIR;—A selection has been made of honey, for the exhibition at Antwerp next year. The intention of the government is, to show there everything for which there is a chance of opening up a market in Europe, and I think honey is one of these lines.

I am very much obliged for your kind suggestion.

Yours very truly,

J. S. LARKE,

Executive Commissioner.

Our friend Strictly Business makes a remarkably enticing offer in his column.

The editor has almost to stand AN ART guard over the package because TOPIC everybody who gets a glimpse at the contents of the Portfolio wants a copy. It is a matter of regret that this fine premium can only be sent to Canadian subscribers because of the duty. Every new Canadian subscriber can have a copy free on conditions named, and every one in arrears can get one as well while the supply lasts, but you cannot do better than read Strictly Business for full particulars.

\* \* \*

The Experimental Union wants to get the results of tests with the THE LANGDON Langdon new swarming DEVICE. vice, will all who have tested it kindly communicate at once with the editor of THE CANADIAN BEE JOURNAL. Your name will be added to the report which will be printed by the Ontario Government shortly.

We should in the same way like to hear results from the Pratt Self-Hiver.

### THE TWENTY-FOURTH ANNUAL MEETING OF THE NORTH AMERICAN BEE-KEEPERS' ASSOCIATION.

(Continued from November Number, page 90.)

time and, if of a generous disposition, often loses more than he can afford to. while on the other hand, human nature inclines the shipper to think that he is treated unfairly by the other party. An unpleasant feeling is created between parties who should be friends, and often, would be the best of friends if they knew each other intimately.

Since a safe arrival is one of the preliminaries necessary for the success in our pursuit and of no minor importance than grading, please allow me this introduction.

The sale of all goods is promoted by their inviting appearance. Special care must be taken in the preparation for market of comb-honey because—a fancy article. All should be put up in neat glass cases with at least one glass front. Cases should contain no more than 20 to 25 pounds net, while smaller cases are often preferable.

Each one should be filled not only with combs of the same color but also of the same quality and the front row of each case should always be a fair sample of its contents. The sections must stand solid in their cases so that their extension are a fair protection for the combs they contain.

I speak from my standpoint as a dealer in the Cincinnati market where glassed cases are most popular. I am not prejudiced to the packing of comb honey in neat paper cartons, which has nothing against it in neatness of appearance and safety in transit.

When small shipments are made, it is well that the shipping cases are crated i. e. that a number of cases be put in crates of such shape as will not be apt to tumble over and which are not too heavy for one man to handle. The fronts of cases should always be exposed to view and the crates marked "comb-honey"—"handle with care" in plain letters.

When shipments of car loads are made, care should be taken in placing each case solid in the car. No vacant spaces should be permitted inside of the cars so as to prevent the sliding of cases to and fro in transit. All cases should be placed so that their combs stand lengthways with the cars. We can haul comb-honey safely on a rough transfer wagon over roughly boulder streets while the dropping of a case on a table from a height of six inches only, is apt to break every comb.

Shipments of extracted honey requires the same care in proportion as those of comb-honey. Since perhaps, 75 per cent or more of all extracted honey produced, is sold to manufacturers, good, stout vessels are most essential for shipments, Barrels and half barrels are most desirable for our trade, but 60 pound tin cans, two cans in a crate, are very acceptable. In fact any vessel will answer the purpose which is clean and safe in transit. No barrels require waxing or paraffining but all must be made tight when dry, then cleaned out and filled with honey. Especially is this the case with second-hand barrels. They must be made perfectly tight by having their hoops driven when dry, in order to prevent disappointment.

We had several times a most unpleasant correspondence with parties who had soaked their barrels in water in order to make them tight and who did not know that honey would absorb every drop of moisture from the staves gradually but surely, and the barrels become more leaky every day as the absorption of moisture would progress. By the time they had arrived at Cincinnati, the barrels were only partly full and some were empty entirely

I have written many letters on this subject, spoke about it at bee-keepers meetings and through bee-journals and whenever occasion would offer and I am surprised that so many of our friends, at this day, don't yet see the point. A general knowledge of the above would prevent soar disappointments, unpleasant correspondence and hard feelings between producers and dealers whose interests require that they should be friends.

The grading of comb-honey as adopted by the ruling of the last National Convention is, perhaps, as good as can be made and may stand. However, it amounts to nothing in the transaction of business and is of no practical value, but it assists giving employment to our theorists. I have no use for the word "fancy" in relation to dark honey. The fact of comb-honey being dark excludes all "fancy."

We prefer to call honey by its proper name such as White Clover, Alfalfa, Basswood, Mangrove, Sage, Golden Rod, Aster, Holly Honey, etc. These and other distinct varieties, we call by their proper names and make prices according to their qualities. Others we class as dark honeys. Buckwheat belongs to the latter of course, but being of a distinct variety, we call it "Buckwheat Honey." By these means we have succeeded in convincing our neighbors that the flavor and color of honey is determined by the source from which it was derived. The result is that none of our customers suspicion the purity of our honey when a strange flavor strikes his or her palate. Sugar syrup fed to bees tastes unmistakable like Sugar Syrup honey. It has no other flavor.

CHARLES F. MUTH.

Cincinnati. Oct. 0, 1 98.

C. C. Clemens, Kansas City, Missouri, followed with a paper on the same subject. In it he claimed that white comb should be No. 1 and No. 2, amber comb No. 1 and No. 2. The number one white should be good flavor, combs straight, of even thickness, firmly attached to sections, all cells well filled with white capping, except row of cells next to the wood, free from travel stain, wood clean.

In No. 2 white comb he would allow very light amber, good flavor, white or light amber cappings, sections not less than  $\frac{3}{4}$  filled and sealed, wood clean.

No. 1 amber comb should include all honey of good flavor, combs straight and even thickness, firmly attached to sections, all cells well filled and sealed, except row of cells next to the wood, slightly soiled from travel stain not barred from this grade, wood clean.

No. 2 amber comb should include all honey of good flavor, irregular combs, and any color, at least three quarters of the sections filled and capped.

He suggested three grades for extracted.

White extracted should be water white, good flavor and clean.

Amber extracted should be bright, good flavor and clean.

Dark extracted should include all honey of good flavor, and too dark to grade as amber.

Mr. Clemens justly claimed that at present every producer had a right to grade according to his own peculiar views on the subject. He did not believe in grading too high.

All honey not coming under the above system of grading should be put on the market as ungraded and sold on its merits.

He advocated for comb honey, the single tier crate, holding 12, 18 or 24 sections, with glass fronts.

For extracted honey, he thought the 60 pound tin with screw top, two in a wooden case, could not be improved upon.

In the discussion which followed it was thought the grading of comb honey too low, there was no grading for comb honey with a large proportion of cells filled and capped next the wood.

Again, the grading of extracted honey was too high, much of the choicest extracted honey was not water white in color.

The president, Doctor Miller, thought the question at issue had not been touched. This brought Mr. Muth to his feet with the statement that he had not touched upon it because he did not think it of any value practically.

A. N. Draper thought the same, when honey was plentiful grading was higher than when scarce, no fixed rule could be laid down. To this, Mr. Muth nodded assent.

Mr. Wilcox had the courage to insist that there should be a proper grading.

The discussion ended in the question being tabled.

Mr. G. R. Pierce followed with a paper upon

#### WINTER LOSSES THEIR REMEDY.

Success in every branch of industry is conditioned upon right management, which implies an intelligent conception of the fundamental principals relating to that particular industry. There are instances where men enter some occupation totally ignorant at the time, of the proper methods that should be used to reach the greatest results, with the least expenditure of labor and capital, and yet are fairly successful. Such instances however, are exceptional,

and usually only occur at the beginning of an industry before competition has entered; after this a tireless and relentless struggle for existence must be looked for, and intelligent, well directed methods must be adopted, or failure is inevitable. Bee-keeping may be said to have passed the primitive stage, and is now an industry in which more or less competition will prevail, and success will only attend those who strive to overcome all difficulties. No, every point of advantage and adopt those methods which have been approved by experience and experiment. Much loose talk is indulged in by Bee-keepers regarding the stability of Bee-keeping as an occupation owing to the product honey being used as a luxury. Oranges, Bananas, Rasins, and other products too numerous to mention are used by people of northern latitudes as luxuries, and the increase of importation of those articles is greater than the increase of population. There appears no valid reason why the consumption of Honey should not conform to the same law. During the last decade bee-keepers as a class, have not been as successful as we could wish. The last five seasons have been noted for the scanty flow of nectar; the pecuniary returns have been reduced to a minimum; the Bees have consequently been neglected and in that part of the Country called the Northern States, fewer number of colonies than there were 25 years ago. The are probably a greater number of specialities in bee-keeping than formerly, but among the farming community the number of colonies seem to be decreasing every year.

The fact that great numbers of colonies perish nearly every winter in the northern States has induced some writers to assume that Bees are not fitted or intended by nature to live in latitudes having almost Arctic severity; that their natural home is in the sunny south where the northern blizzard and snow-banks are unknown. We have localities no doubt where the soil is so barren that it will not support a nectar yielding flora, in such places the bees could not thrive whether the winters are cold or warm. Insects are very much like other animals in this respect they flourish wherever they can find suitable food in sufficient quantity for their needs. Even within the Arctic zone where it is popularly supposed "cold desolation reigns supreme" animal life is wonderfully prolific. These are mainly representatives of oil and fur bearing species, but members of the *Articulata* are also present, for we read that Lieut. Peary saw a humble Bee in Northern Greenland and found the labor of insects at the edge of one of the largest glaciers of

that abode of snow and ice. Capt. Peary the famous English navigator also found six species of insects on the island Melville, a point about 2000 miles due north of the northern boundary of Montana, Russia a land proverbial for its cold winters produces large quantities of honey and wax.

When we consider these facts, it seems absurd to suppose that that the magnificent tract of Country extending from Maine to the Rockies is not capable of supporting bees. We have here a country upon which nature has bestowed with a lavish hand a wealth of fertile soil and luxuriant vegetation which equal the most favored regions the globe. In view of the favorable conditions present for the support of animal life, it seems fair to presume that the winter mortality among bees in the northern United States is the result of crude and improper methods of protection and not of climate conditions. The cause of winter losses has been discussed by Bee-keepers from almost every conceivable standpoint, cold, impure air, moisture, pollen, lack of water, bacteria, have each in turn been held responsible for the trouble and yet the bee fraternity is not a unit in explaining the matter. This is not surprising, for the method of reasoning adopted has been mostly of the pre Baconian era of philosophy when causes were assured and facts were fitted in as found convenient. This method works well until we come in contact with a fact that is one of the stubborn kind; one that will not fit, no matter how it is turned or twisted, it will not even do for an exception to the general rule, but is continually intruding at every point and there is nothing for us to do but to assume another cause which in turn is overthrown by some other obstreperous phenomenon. The results of such a method of investigation are utterly unreliable as may be illustrated by the following incident.

Some years ago a gentleman who had lost nearly his whole apiary, wrote an article in which it was urged with considerable zeal, that winter losses were caused by the bees gathering and storing the juice of fruits which in turn caused the store of honey to ferment, thus naturally producing disease. This view had been so ably held by the gentleman that I resolved to test the matter. I therefore extracted all the honey from several hives and fed the bees a mixture of honey and cider, nine parts by measure of the former and one of the latter. Now if those bees had had any respect for human logic, they would have promptly died during the winter, but they did not. The fact is the case failed to fit when put to the test. Other experiments when put to the test

have convinced me that bees can live upon what they gather, store and seal, if they are properly protected. They will even tolerate stores of so called honey dew of the most nauseous character but will show the effect of such a diet in the spring, as they are less active than ordinarily, breed more slowly or not at all and rapidly dwindle in numbers unless supplied with other pure honey or sugar syrups. We may infer the cause and apply the remedy against winter losses by considering the following facts which experience has furnished or will teach us.

1st. Bees winter in good condition generally if they have sufficient food and can take cleansing flights every three or four weeks.

2nd. They do well in very severe winters if the period of greatest cold is experienced in November and December and January, but if the coldest weather is in January and February and March disease is almost sure to be indicated unless the hives are well protected.

3rd. A severe winter following a season that gave no fall flow of honey is usually fatal to the inhabitants of an unprotected hive.

4th. A normal colony of bees hived in a large box or gum and allowed to keep all honey gathered, say to the amount of 60 to 80 pounds will live and keep healthy no matter how severe or how prolonged the winter may be. Instances are on record where bees have occupied such hives from 10 to 15 years.

5th. A colony of fair strength as to number will endure the severe cold of our winters no matter how prolonged until a part or all of the cluster have eaten the honey stored directly above, if the cold continues after this there is danger ahead. By considering one or two of these propositions and ignoring others, one may assume any disturbing element to be the cause of winter losses, but to reach the true cause all facts and phenomena with which we are acquainted must be carefully considered. In northern climates all animal subject to man require virtually the same conditions to endure the cold and there are quietude a warm abode, and sufficient food of the proper kind to supply the nutritive functions of the body. Bees are no exception to the rule, though they are physically different from the vertebræ. They gather the food suited to their organism and when left to themselves will store it in such a position as to be available at all times. They are enabled to enjoy a reasonable degree of warmth by their mode of living at the ceiling of their dwelling instead of on the floor, thus en-

joying an atmosphere made temperate by heat evolved from the clustered colony.

In order to meet the requirements of a healthy bee hive in outdoor wintering, I would briefly suggest the following: 1st, a sufficient quantity of honey to meet the needs of the colony until the bloom of the following spring. This honey store should be so distributed that the combs upon which the bees are clustered will contain enough honey to feed the colony during cold weather reserving the side stores for breeding in the spring. Never put empty comb in the centre of the hive after the honey season has closed. 2nd, The cover of the hive should be a solid board sealed tight by the bees, and this covered to the depth of ten or twelve inches with some heat retaining substance in order that the top of the hive may be kept warm, protection to the other parts of the hive is also absolutely necessary, at least in the north western states. I have followed the discussion in "Gleanings" concerning sealed covers with considerable interest, and am not surprised that success has not attended some of those who have tried them. The reason is quite plain to my mind. Too much emphasis has been placed on one part of the method, that is the sealed cover, ignoring to a great degree the deep covering above, a most essential adjunct. In some regions as Central Ohio, Indiana, Pennsylvania, etc., the depth of covering indicated may not be necessary, but in colder climates the sealed cover will be a failure without it. Space does not permit of my explaining in full all the details of my method of wintering. In my work "The Winter Problem in Bee-keeping" I have stated these at length. Nor do I consider that all bee-keepers should understand what conditions are necessary and then provide for these in any manner convenient to his or her situation and surroundings. Since publishing "The Winter Problem" I have found by testing that an empty space below the hive is a valuable adjunct in wintering out of doors, not to let the foul air settle at the bottom as was first claimed but for the following reasons, 1st. It is an absolute safeguard against the entrance of the hive becoming choked when covered with snow. 2nd. The bottom of the hive is in winter the coldest part, this space lifts the cluster above the cold boards. 3rd. Bees are not apt to fly out on cold sunny days if the lower edge of the comb is three or more inches from the bottom board. The strength of the colony is thus conserved and early breeding encouraged.

In conclusion let me say that winter losses are not caused by poor honey, by fruit juice, by pollen, or by bacteria, it is simply

a case of *Protection and Food*, this supplied and the Bees can be wintered in the North as well as in the "Land of the cotton and the cane."

Blaevstow, Iowa, Oct. 11th, 1893.

Mepis, Dadant and Hilton, followed with papers upon the same subject which will be given later. As time would not permit no discussion took place upon this subject.

The following questions were taken in hand.

Has anything been found to be applied to the face that would be obnoxious to the bees, in so far as to keep them from stinging?

Carbolic acid, and apifuge.

Does the age of brood comb lessen their worth or desirability for breeding purposes. A sample was shown over 20 years old partly torn down by the bees and rebuilt.

The discussion which followed appeared to leave no doubt that the bees would tear down comb when old and rebuilt it, at the same time it was thought it would not be advisable to leave comb until the bees would be compelled to do this.

What is the cause of the short life of queens as generally raised and sent out?

It was suggested that we often do not know when queens are superseded, those that were bought were watched more closely and if they were lost we noted the change. Another Mr. C. P. Dadant, stated that queens were often accepted by the bees under protest and there were later superseded, never having really become reconciled to the new queen introduced. Another thought the queens often suffered owing to hard usage during long transit in the mails. Another said queens were often older than represented.

Did any one ever make first class vinegar of honey, how is it done?

Doctor Miller stated excellent honey vinegar could be made from honey, directions could be found in bee-books.

Mr. Muth stated excellent wine could be made from vinegar.

Who uses honey in manufacturing?

Bakers, tobacconists, a few brewers, pork packers.

Where did the golden Italian bees originate.

Doctor Miller—In America probably.

C. P. Dadant—In Germany you can get Italian bees brighter than here, they have bred there as in America for color, which is a great mistake.

Should the duty on honey be removed?

With one exception our United States friends said no.

Are we making a success of rearing queens in the upper story with a queen below?

Three present said yes.

What is the best way to bleach wax?

Expose to light.

Should unfurnished sections be used next season or discarded?

Many javoied using them.

Mr. Crane used those clean, he shaved the comb down to  $\frac{3}{4}$  inch for whole thickness of comb.

J. A. Green—would use two or three in each super.

Another found old comb objectionable the wax was tough.

Another thought if the sections were carefully cared for and shaved down they were not objectionable.

Mr Aiken,—some years ago used 1600 sections, old ones, he put 16 of these in each super. the flow was free and full, no swarming, the colonies were strong, in 4 days every cell in the brood chamber and 16 sections were full, he thought he had 1600 lbs more honey. In such a case he would use them. The comb in old sections was not so good and inclined to granulate.

Mr. Arken was asked how he dequeen hives?

Mr. Arken stated they had a medium flow which began about June 15th and lasted 40 to 60 days. He dequeen just before the honey flow began by removing the queen the best he used for nuclei the others he destroyed. He permitted them to raise a new queen, there must be not more than one queen cell, 8, 9 or 10 days later he again goes over and cuts every cell but one or leaves them hopelessly queenless. In a day or two in the latter case he gives a cell or a young queen.

The bee must be hopelessly queenless so the swarming fever will be gone otherwise a few will swarm out even then.

In 5 or 6 days if queenless fertile workers will develop.

#### CONVENTION NOTICES.

##### NORFOLK BEE-KEEPERS ASSOCIATION.

Annual meeting Norfolk Bee-Keepers Association will be held at the Queen's Hotel, Simcoe, Ont., at 2 p. m., Dec. 2nd. All bee keepers are requested to attend. Election of officers will take place.

C. W. CULVER, Sec'y.

Simcoe, Ont.

##### HALDIMAND BEE KEEPERS ASSOCIATION.

The Haldimand Bee-Keepers Association will meet at Cayuga Ont., Saturday, Dec. 10th, '93. A large attendance is expected. The question of what shall be done with the grant from the Ontario Bee-Keepers Association will come up.

E. C. CAMPBELL, Sec'y.

## THE WORLD'S FAIR.

## List of Exhibitors, awards etc.

The immortal Columbian Exposition being over the, process of disintegration is going rapidly on, and all is bustle, disorder and confusion. Exhibits are being taken down and removed with a rush, especially among the natives, which the Yankee alone can properly illustrate. Foreigners are going a little slower with the exception of the dusky Denizens of the equatorial regions who do not care to stand around shivering in a Chicago climate instead of basking in a tropical sun at home. The bee-keepers are as busy as anybody, if not busier. Their pet insects seem to have taught them a lesson to "hustle" as well as to be patient over details and difficulties. If the beemen of Jackson Park are not at present making things "hum" with saw, hammer and nails, as well as with limber tongues (count this scribe out—he never was a talker) then that word has no meaning outside a bee yard of a June Morning. But while there is so much physical and material disorder, harmony reigns in the upper regions. A better natured, more sociable and obliging lot than than the "bee men" in the East Gallery of the Agricultural Building could nowhere in Jackson Park or elsewhere be found. There is one Characteristic of human nature, however, which seems to run through them all here, and that is they are all "Stuck up" not exactly with conceit (though what they don't know about bees is hardly worth the knowing) but with honey *stuck up* with honey. As their tongues are *melifluous* with fluent speech, and limpid with licking their fingers and other things, so in the genuine mel itself everywhere and on every thing. It is "sweetness long draw out", and very much of it grown in and around as well. Everybody is happy as well as in a hurry. The Doctor that sings "Dot Happy Bee-Man" is unfortunately gone home, or we would have him up in the corner near the "roosts" mounted on the Pasteur Filter Fountain singing for us, while we would betimes hand him a bottle of catnip and hoarhound honey with a "*straw*" to suck it through to clear his throat; but the other partly doctor is here all right, and if he is not quite "in it" in singing he is in talking. With equal facility this genial, and Jocular and rotund, doctor can talk his patient subject blind or talk his eyes wide open to the mysteries of bee-keeping. And if anything is the matter with anybody among the happy and healthy family in the Gallery either outside of the four "roosts" or

inside them, the doctor is always ready and willing to right him (or her) up as quickly as a little harmless medicine and a good deal of potential personal Magnetism can do it. But these happy days are drawing to an end! The parting must come, and one feels sad at the thought. I venture to say that no lucky or luckless bee man who has had the fortune or misfortune to participate in these last days in the wind up in the Gallery can ever forget the proceedings and reminiscences, or look back to them with anything but pleasure, mixed with sadness that they can never be repeated. As the great world's Fair was but once in a life-time, so these esoteric experiences and inimitable incidents are but for once in a life-time. Of course the roads out of the Honey Gallery and the Exposition is not all smooth any more than was the road in. But the annoyances and troubles are laughed off by some, such as the Doctor, or taken philosophically. When a thief gets away with a bottle of honey, or a bottle of wine, (this latter *sotto voce*) or a hammer, or saw, or packing box, or the doctor's coffee pot, or some other man's stool or stew pot, nobody cries, but nearly everybody laughs, except, perhaps, the victim, and he tries to. It is only when a big Jar of honey, containing may be 10, 20 or 30 lbs. unaccountably divides its individuality, and unceremoniously lets its precious contents out in the tank of warm water during the process of liquification, that anything like gloom reaches the alcove where the gas stoves are going, and overspreads the charmed circle, but especially the face of the unlucky man who had the Exhibitor's lost honey in charge. With all possible prudence and care the little glass jars will occasionally break, and the big ones semi-occasionally. But where an aggregate of thousands are to be heated it is only in accordance with the inflexible and inevitable law of accident percentages that we must expect some to break. Here is where the philosophy that leads to resignation comes in. But while in the aggregate, the percentages must and do according to law come out all right, they often provokingly fail to distribute themselves evenly or justly. For instance, the writer has perhaps 12 to 15 times as many large Jars as his nearest neighbor on one side but one in the Gallery (Michigan), while each has lost so far one large Jar with contents. But it is not safe to whistle before one gets out of the woods; the writer has still a lot of jars to melt, but only a few large ones. But the large jars have a queer and provoking habit of parting with their big flat feet when in the hot water. While this spoils them commercially the honey is saved. As for the loss



and annoyance of theft to the bee-men there seems to be no spot in Jackson Park possessing the attractions and temptations to the amateur pilferer, as well as those not naturally thieves, as the same Honey Gallery we are writing about. The professionals go for the Jewelry, Diamonds and other valuables and would disdain to stick up their light and nimble fingers with honey. This Gallery is also the place *par excellence* for the Souvenir hunters and beggars. And it is a not little amusing to hear the arguments presented by some of them (and the cheek by other) why they should get the sweet souvenirs of the great Columbian Exposition. One Columbian Guard at my case when a glass door was open, noticing that the proprietor was a British subject from Canada, gave as a reason why he should get a souvenir that he had actually the day before "arrested a man" who was trying to tear down a British flag from some place or other in the Park. As the said proprietor had himself two Union Jacks flying from his case in the breeze (from the windows) his hard hearted avareiciousness melter before that patriotic appeal even as the Candied honey was melting on the gas stoves! The guard went away with a souvenir with the admonition to tell nobody. Anyway it is better to give away a little jar than to have a bigger one stolen.

By the way the editor of the C. B. J. says in last issue that he does not know "who is responsible for the selection of the glass but the packages are too large to show the honey to best advantage." I may say that I (with inevitable circumstances) am responsible and would do exactly the same thing again under similar conditions. The best evidence that the Ontario honey was fairly well bottled up, and put up, and arranged, and installed, and managed if you please, is to be found in the fact that it has taken two awards as a collective display and exhibit, besides the fifteen individual awards; and the other fact that the press of Canada and the U. S. both, as well as visitors, interested and disinterested, have spoken in the highest terms of the display of Ontario honey at the Exposition. Let it be remembered in the first place that this was not a county show but a world's Fair. The small-potatoes, small bottle work which would therefore be excusable or justifiable at the former place, or even at a Toronto Industrial, would be inexcusable and inappropriate here. I had glass holding from one to two ounces up to 65 lbs having the buckwheat Extracted Honey and other dark honey in the latter and that was in my opinion, the way to make a display especially the quantity I had to display. More-

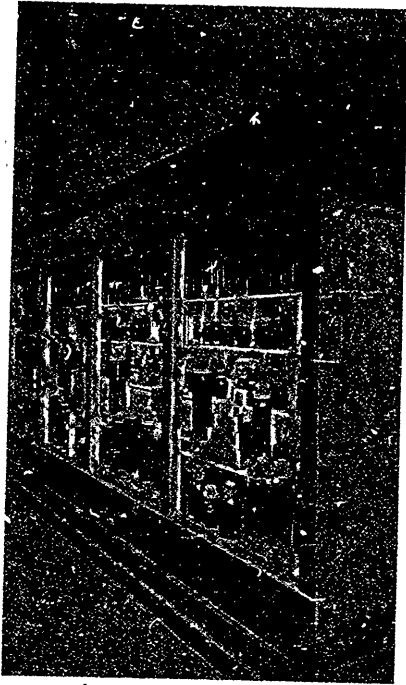
over, when the glass was selected we expected to be able to exhibit only collectively as a province. This assurance came from head quarters. And as bunching up every man's exhibit by itself in the case in small bottles tagged would have utterly spoiled the appearance of the exhibit collectively, I refrained from doing so absurd a thing. Suppose that method had been followed, and the surplus left out in the packing boxes where would have been the provincial awards or the numerous individual awards, or the verdict of press and visitors that the Ontario honey case display was the best in Jackson Park? The Judge himself remarked when he looked the case over that we knew "not only how to produce honey but how to display it." But I not only got in my application to the Bureau for collective examination and awards, but for individual awards; and in the vascillating confusion and muddle of the Bureau of awards this right was secured only by persistent effort.

And I may say here that no individual exhibitor suffered any injustice in consequence of a part of his extracted honey being in large jars and having his exhibit distributed instead of bunched; because each exhibit was apportioned in both small and large jars and could be seen in both; and the judge was duly apprised of this fact, and carefully, and I believe, conscientiously examined and tasted each man's honey. I had never met the honey judge before, but I believe he was not only painstaking and competent but anxious to do right by all. The original intention of the fair regulations in this department was, I believe, to individualize the exhibits in the show cases with the exhibitor's name attached to his exhibit. This was not carried out, as the superintendents would have been greatly hampered in their efforts to make the most of their chances for their countries and their exhibitors. With the scattering of the individual exhibits went in a measure the desirability of the personal tag. Moreover, when the state borrows or buys the honey from its individual citizens and becomes responsible to them for its return or its equivalent in cash, and does this at great trouble and expense, then the State has the right to manage and exhibit the goods as it sees fit in the interests and for the credit of the Country as a whole. When the Exhibitor foots the bill for exhibiting his own goods then his right to do the work in this way or to suit himself becomes manifest. Canadians instead of finding fault ought to be proud of the results at the Exposition in the apian and all other Departments. To secure them the Country must in the first place be a good one and

the management from top to bottom also good.

Below is a list of the Ontario apiarian Exhibitors at the World's Fair; and following it a list of the awards made, which, in default of its timely publication by the Bureau, I succeeded in getting from the books of the Department:—

In looking at these awards it must be remembered that other exhibitors had first class honey besides those receiving the awards; and that some of the exhibitors did not expect any award, and wrote me when sending it that they were merely sending the best they had to help make up a provincial exhibit not intending it for competition. And moreover, it is well to also



THE CANADIAN HONEY EXHIBIT.

remember that while an exhibitors honey might be excellent and reported as such by the Judge the Jury might nevertheless fail to make an award on it. The Judge is not to blame for that. I believe that a few more of the Exhibits in my charge ought to have received awards; but the Jury know best why they were not made. I noticed it hinted more than once in the papers that the medals Mr. Thacher had ordered at Washington for the World's Fair were likely to prove quite insufficient. It may be that the "docking" had to be done all

over. However, Ontario as a whole has no reason to complain in the Department of apiculture. We have two provincial Awards and 15 individual. This is more than all other foreign Countries combined; and in the matter of honey (if my count on the books was correct) more than half as many as the whole of the United States together. Apiculture in Ontario is to the front—in the fore-front.

LIST OF AWARDS ON ONTARIO APIARIAN EXHIBITS.

The Goold, Shapley & Muir Co., Brantford, Clover Comb Honey of 1892.

The Goold, Shapley & Muir Co., Brantford, Clover Comb Honey of 1893.

Allen Pringle, representing the Province of Ontario, collective exhibit of Extracted and Comb Honey.

J. B. Hall, Woodstock, Ont., Clover Comb Honey of 1892.

J. B. Hall, Woodstock, Ont., Clover Comb Honey of 1893.

D. Chalmers, Poole, Ont., Thistle Extracted Honey of 1892.

Allen Pringle, Selby, representing the Province of Ontario, collective exhibit of Extracted Honey.

The Goold, Shapley & Muir Co., Brantford, Ont., Reversible Honey Extractor.

S. Corneil, Lindsay, Ont., Bee Smoker.

R. McKnight, Owen Sound, Ont., Linden Extracted Honey.

A. E. Sherrington Walkerton, Ont., Linden Extracted Honey.

Geo. Wood, Monticello, Ont., Linden Extracted Honey.

Aber Picket, Nassagawaya, Ont., Linden Extracted Honey.

Geo. Harr's & Son, Dungannon, Ont., White Clover Honey.

J. Newton, Thamesford, Ont., Clover Comb Honey.

J. B. Aches, Poplar Hill, Ont., Clover Comb Honey.

The Goold, Shapley & Muir Co., Brantford, Ont., Brood Foundation.

TOTAL.

Two Provincial awards and fifteen individual awards. 17 awards in all.

All foreign Countries exclusive of Canada and U. S. combined 14 awards.

ALLEN PRINGLE.

NOTICE.

Owing to lack of space we are compelled to withhold until the next number the table of experiments in connection with the Michigan apicultural station also the list of Chicago Honey Exhibitors received.—Ed.

## FIRST STEPS IN BEE-KEEPING.

"Keeping Everlastingly at it Brings Success."

Questions Sent in Bearing Upon First Steps in Bee-Keeping Will be Dealt With in This Department By the Editor.



THE knowledge that our neighbors cannot prevent us from keeping bees, should make us all the more careful to avoid causing them any inconvenience. To act in this way is not only neighborly, just and right towards others

but we serve our own interests.

I shall briefly take up the various methods to be adopted.

## THE BEES.

There is as to temperament a great difference in the bees. When in close proximity to the house black, and bees mostly black, by that I mean German bees, should be avoided. Also Cyprian or Syrian bees and their crosses, not only to the third and fourth generation but to the eighth and tenth. Bees that can be handled without angering them upon the slightest provocation, are the kind desired in such a situation.

## TREATMENT.

Bees are fortunately subject to methods of treatment so contrary to natural laws, that many apiaries are kept in a chronic state of ill will, and no one but the apiarist to blame.

Bees should be examined at the right time of day, when not too cold, the crushing of bees should be avoided. This crushing may be due to careless handling or owing to badly constructed hives, having bee space either too small or too large. Get only hives carefully and accurately made, do not get the impression that anything will do for a bee hive, smooth work is desirable, but far more so is accurate work, avoid then killing bees in every way. Have a good smoker and use it sparingly,

much smoke angers the bees, to have a smoker standing in the yard for hours blowing its fumes about the apiary is not in accordance with good management. Again bees should not be handled any more than necessary at any time. The way some bee-keepers keep pulling the brood chamber to pieces, during the spring of the year, reminds me very forcibly of the time when I was eight or ten years old, and used to pull the sitting hens of the nest, to see how the eggs under them wese getting on. The results are about the same in each case *disastrous*.

## AT THE CLOSE OF THE HONEY FLOW

bees should never be examined; at this time, they are peculiarly irrestible. In a week or two they will settle down to a quiet condition, and what handling must be done as far as possible arrange after this time. Comb honey or even extracted honey supers which require to be removed after the honey flow, should have the bees taken out of them by means of the bee escape boards.

When honey is not coming in, do your preserving, and tell your neighbors to do their preserving after dinner. Avoid putting out any king of sweets, in short avoid exciting the bees in any way. The children at our house play close to the bees, sometimes right amongst the hives, even when honey is not coming in they rarely get stung, when they stay from amongst the hives. Last spring our little girl in the neighborhood of two years, sat down in front of a strong colony, and commenced poking at the entrance, when we saw her she was fighting the bees and crying, if she had not been noticed the bees would have killed her and as it was she received between twenty and thirty stings. To avoid such accidents a fence should be kept, between the apiary and the play ground of small children.

Give your neighbors to understand they should not strike at the bees. Take what they may say quietly and kindly, they may be sincere in their convictions, try and dispell their fears, and let kindness and consideration for others mark your course, I have been placed in unpleasant positions in regard to this matter, and my course has not been to assert my rights, and stand on my dignity at first, only when I knew a gentler and kindlier course would not work, did I point out that the law was on my side, and whilst I would regret a neighbor taking action in court, I did not fear it.

## ANSWERS TO QUESTIONS.

Thanks for the full and prompt way in which you answered my questions in THE CANADIAN BEE JOURNAL, the answers

gave much satisfaction amongst us bee men here. One thing I omitted, nor is there any reference to it in the journal, so far as I have noticed. It is this. Do you put *slots*, or any other device under the cloth to raise it from the top of the frames, when preparing bees for winter. Here it is generally done to help bees to cluster in in the winter. I am a beginner and have Thomas' book which do you recommend kindly answer in the next C. B. J.

Mount Forest.

J. M.

For outside wintering we put sticks over frames, simply to make a passage for the bees over the combs.

As to the best book it is a difficult matter to decide, a number of books have their strong points. We will mention two or three, all of which may be read with profit. "Langsbroth on the Honey Bee," "A. B. C. of Bee Culture," "A year amongst the Bees." They can be purchased in Canada, at United States prices, apply to dealers who advertise in these columns.

#### MOVING BEES.

I have a number of hives of bees to move thirty-two miles. Please let me know how and when will be the best way to move them, in the autumn or spring, or will I wait till sleighing, and how will I give them air?

Mrs. R. M.

Bees have been moved with success in all the ways you mention, but we strongly advise moving them in the spring. If wintered in cellar clean entrance well before taking out, and after first cleaning flight move to new locality, let it be, as far as you can judge, the morning (early morning) of a fine fairly warm day. We would put wire cloth over entrance, the cloth, nailed not flat against the hive, but shaped like a drone guard. Unless very strong the quilt left on the hive will answer, tack the quilt on by means of thin strips of wood, fastening the quilt between hives and their strips. Fasten your frames with wire nails, driven through the quilt and only partially sent home. This avoids stinging in driving and drawing nails. Take a spring wagon, or a lumber wagon with straw in bottom, to break jar. Load the hives carefully, combs same way as wagon box: The every thing on well, see that entrances are guarded from rubbing, and quilts will not be injured from hives on top of lower ones. Have a good careful driver, moving along smartly when road is good, checking horses the moment he comes to a bad spot. Unhook horses if any accident should happen to let out bees.—Ed.

#### Work At the Michigan Experimental Apiary.

Hon. R. L. Taylor has been conducting an experiment with bees hived upon comb foundation, starters and full combs, the result is as per table connected herewith.

Numbers one to four inclusive were supplied with comb, and described as A. Those with foundation, numbers five to eight inclusive described as B, and those described as C, were hived on stretchers in the brood chamber. The supers whether taken from the old hive at the time of swarming, or supplied subsequently, were carefully weighed.

Other data for table A were obtained by weighing the several hives, bees, supers and all upon three different dates, viz. the 6th., 12th., and the 19th of July, and by weighing the cases separately on July 19, this enabled Mr. Taylor, to state the exact gain of each colony, in the amount of comb honey, together with the gain in weight of the hive for the entire time. From these he deducted the gain per pound, of bees of each colony for each of the three periods, as well as the entire time, and also the gain in weight of the hive, and in the amount of comb honey for the whole time.

3A and 2C were disregarded in table B, one lost its queen, the other persisted in swarming out.

Mr. Taylor carefully warns bee-keepers not to accept this experiment as conclusive, he says, the results must be verified repeatedly, before they can be accepted as the rule. Yet the multiple character of our experiment with the results so nearly uniform, gives strong assurance that what seems to be disclosed, is in the direction of the truth. Those hived on combs, gained in all more than 11 per cent., over those hived on starters, and those hived on foundation, gained more than 13 per cent. over the same. With reference to comb honey only, those on comb honey gained less than 5 per cent., more than colonies on starters, while colonies on foundation gained more than 17 per cent over those on starters. Those on starters had an undue proportion of the weaker colonies, yet if we consider in table C only the strong colonies in each group of, A gained 9½ per cent. more than C in comb honey, and B against 42 per cent. more than C. Take the light swarms in the same table and column, and the positions are reversed, A gains nearly one-half of one per cent. over B, while C gains nearly thirty-two per cent. over B.

In table B from the figures given in the third column where the gain for the first

period is given, we deduce that B gains during that period more than 53 per cent. over C, while A gains more than 68 per cent. over C, during the second period, the figures show that portions are exactly reversed, while for the third period the positions as to relative gain are again changed, A leaves B in the rear. In table C the strong colonies, invariably gain more in the first period, whilst the light ones take the lead in the second and third periods. In the amount of comb honey for the entire time in each group, the strong colonies have the decided advantage, and so in group A and B in the amount of total gain, but in group C in this point, the weaker ones are far in the lead. Mr. Taylor admits that time is an essential element in the experiment. The colonies strong in numbers and those aided with comb or foundation, appear to lose their energy and ambition sooner, those in straightened circumstances whether from lack of numbers or of resources, arouse vigor and persistence. We can only guess what the result would have been had the test covered the whole of the honey flow, instead of the last half.

In the summary as elsewhere, when gain is spoken of it is not gain per colony, for colonies vary in strength, but per pound of bees. If the table then can be trusted, they show for the last half of the summer honey season.

1. That for profit, foundation for the brood chamber has a decided advantage, in point of surplus comb honey, drawn comb stands second, and starters last.
2. That in point of total gain, in both brood chamber and surplus, the same order holds and to nearly the same extent.
3. That fairly strong colonies, show a very decided advantage over light ones, in point of comb honey, and a slight one in the total gain.
4. Light colonies sustain their rate of gain better than fairly strong ones.
5. That swarms on starters sustain their rate of gain, decidedly better than do those on comb or foundation.
6. That of the light colonies, those on starters are decidedly more profitable, than those on either comb or foundation.

#### Death of Mr. and Mrs. Van Deussen.

A railroad accident on the morning of Oct. 20th, near Battle Creek, Mich., resulted in the death of some 30 people, among whom we learned with sadness, were Mr. and Mrs. Chas. C. Van Deussen, of Sprout Brook, N. Y. Mr. Van Deussen was a son of the senior member of the fine firm of J. Van Deussen

& Sons, the wellknown flat-bottom comb foundation manufacturers. All the bee-keeping world will read this with sincere regret, and extend to the stricken relatives their most earnest sympathy in this very sad bereavement.

Mr. and Mrs. Van Deussen were on their way, to visit the World's Fair, when through some carelessness of the railroad employees they were overtaken by death when two trains met in the collision referred to. Mr. V. was injured, and died within an hour or so after the accident, but his wife was burned to death in full view of those who tried in every way to rescue her, but could not, as she was pinned in the broken cars. The account of her martyr-like death, as portrayed by the daily newspapers, is so horrible for reproduction here. When she saw that death was inevitable, she gave one agonizing wail, and then her woman's weakness gave way to her martyr strength. "I can die; oh yes, I can die if I must," she said. "I am a Christian," she also said, and a moment later her voice was raised in prayer. Oh, it was a terrible death! Strong men wept at the heart-rending sight that they were so powerless to prevent. But at last the praying lips were stilled, and the soul of the brave Mrs. Van Deussen passed into eternal glory.

Ah, scoffers at the true Christian's faith, hide your heads in shame, and pause ere you again speak lightly of that which helps martyrs to bear up under persecution, and even welcome death by the torturing flames. Our brother and sister were called very suddenly and unexpected from their earthly existence, and none of us know when we, too, may be summoned. Oh, that we all might have that trusting faith, and abiding "hope" which we all can "have as an anchor of the soul, both sure and steadfast, and which entereth into that within the veil."

The Van Deussen comb-foundation exhibit at the World's Fair was at once appropriately decorated in emblems of mourning in memory of the departed member of the firm—American Bee Journal.

The above needs no further comment, we can endorse all Brother York has said.—Ed.

Two little Quaker children were one day playing together, and some little differences arose. One grew angry, and said passionately, "If thee doesn't take care, I'll swear at thee."

"Oh, oh!" cried the other one too shocked to say any more,

"I will!" exclaimed the other. "Oh thee little you, thee!"—Exchange

## Wintering Bees.

(For the Canadian Bee Journal.)

DEAR EDITOR.

Friend Pettit, on page 61, tries to help me out in the matter of wintering, and I think I, 'll let his kindness in that direction offset a grudge I have against him for not being at the Chicago convention. I fully expected to see him there, and his absence was very unkind.

I assure you, friend Pettit, that I have read with much interest your communication, and it may be of some interest to know wherein we agree and wherein we disagree.

Like yourself, I find I can do better wintering in cellar than out, although I confess to a continued banking for success outdoors. Winter before last I tried a few out with no protection — twelve I think. Just twelve of them died before spring.

I don't pack as much as you, for I have no packing on top. But I believe a top packing is a good thing. I have flat board covers, and it isn't convenient to put packing on top of such covers, but I'm sure it would be a good thing. Then moisture would not condense overhead and drops of water fall upon the brood nest. If I used packing anywhere it would be on top.

Following down, I find we agree till you say the ventilation must be regulated in windy weather. I seldom meddle with it. Possibly I might better do so on windy days. Still I try to keep up the temperature, which is much the same thing, for I suspect the only harm of too much ventilation is lowering the temperature.

I have no quarrel with you as to setting hives eighteen inches from cellar bottom, but as a matter of fact, for saving room, mine are a foot lower. Possibly it isn't so well, and yet I don't see the bad results that I formerly expected. But I'm sure it's no better, except the saving of room.

I'm agreed with you as to the undesirability of having anything like a reservoir of bad air under the hive. But I suspect you misunderstand what I do have. Formerly I had tight floors, [Yes, I like word "floor" better than "bottom board,"] and in winter the entrance was left entirely open. That made an opening of a half inch the full width of the hive. I thought that was not enough, especially as bees often clogged the entrance, and now have reversible bottoms, in winter closed on three sides and open in front the full width of the hive. As the whole front is open, that makes an opening two inches deep, and I have always supposed it was about the same as having no floor at all under the hive. True, this open-

ing is closed with wirecloth to keep mice out, but as the wirecloth has three meshes to the inch, I don't suppose it interferes materially with the free passage of air.

I don't think you need labor with me to make me believe in pure air, and if you convince me that my present plan keeps a lot of bad air stagnant in the hive, then I, 'll make a change.

As I said before, I believe your plan of having warm packing on top is good, but I, 'm not sure that it would be enough better to pay for the trouble in my case. The flat covers nailed down before they leave the out apiary—sometimes they are not nailed down, but are glued down—and the covers are not opened again till after they are taken again to the out apiary in the spring.

You say the temperature should be 38 to 42°, but don't say anything about how you would hold it at that if it should go lower. I use a hard coal fire, but I find bees will keep quieter at 45 than at 38. There is, however, a difference in thermometers, and in the part of the cellar where a thermometer is placed, so it isn't well to quarrel about the exact degree.

As to dampness, I let that take care of itself, and as a rule my cellars are tolerably dry. Although you are somewhat ultra as to your views on dampness, I suppose you would hardly take steps to make a cellar damp if it was dry.

Now if you think there should be a change in any part of my practice, I shall take it kindly to have it pointed out. Yet it isn't a bad plan to let well enough alone, and in the past I have had small loss for years in winter. It is possible that you may have had a different impression, and it is right that I should say that during the past two winters my loss has been much heavier than usual. But during those two winters I made a variation from my practice that may account for the variation in loss. Much has been said as to the badness of artificial heat, and winter before last I thought I would try natural heat and didn't make any fires in the cellar. The temperature was lower than usual, sometimes touching near the freezing point, and I think the harm came not only from the bees being too cold, but the air in the cellar was not so well changed as if it had been warmer. Last winter I tried the plan of putting in occasional fires. Bees outdoors have occasional warm days, and why shouldn't it be the same way in the cellar? But it didn't seem to work in practice as well as in theory.

I doubt if I can do better than to go back to the old plan and keep fire in the cellar twenty-four hours of each day, seven days

in the week. Yet I suppose I shall always envy those who can winter outdoors, and every year or two perhaps try it in some new way, only to lose the bees that are left out.

C. C. MILLER.

Marengo, Ills., U. S.

### Killing Angry Bees. The Prevention of Robbing.

(Written for the Canadian Bee Journal.)

I find that such men as Dr. Miller, G. M. Doolittle and even the Editor of "Gleanings in Bee Culture" advocate using "a paddle with which to kill bees that persist in chasing and scolding." Now my experience with bees extends nearly over the whole of my life, and with the movable frame 27 years and I have always found that if I should kill a single bee others would revenge the insult while I am at work in the apiary.

Again the Editor of "Gleanings" tells how he keeps robber bees from being troublesome by keeping them to work on "old combs containing much or little honey, placed in four or five hive bodies stacked in one tier an entrance at the bottom so as to admit but one or two bees at a time. Bees may behave differently under the Stars and Stripes but my bees would cover that tier of hives in a short time so that you could scarcely see them and the whole premises would be ransacked for more plunder, and my bees are mostly of the Doolittle strain of Italians.

Of course there are times when bees are gathering natural stores rapidly that a hive of combs might be allowed to remain anywhere, but the Editor is speaking of a time when robber bees are troublesome. Now I would like to know what the Editor of the C. B. J. thinks of the above subjects also the opinions of other bee-keepers of Ontario on the same.

ILA MICHENER.

Low Banks, Ont.

Now friend Michener this is very unkind of you to drag me into opposition to two such bee-keepers as yourself and friend Root, both of you have kept bees longer than we have and we must apparently disagree with one or the other. I say apparently, for when we look at the question closely there is perhaps not so much difference. A bee angry poisoning on the wing waiting for a favorable opportunity to sting is already doing all she can to arouse others to hostile action, she is throwing of the poison scent and under these circumstances the sooner she is killed the better. We are too lazy to carry any more than necessary and our hands are large enough and quick enough

to cover a bee. We turn away from the open hive to avoid disturbing them and with hands in position invite the bee to come within reach and make sure to drop her first attempt. Such bees will follow from hive to hive and the sooner destroyed the better.

As to the second question we have never tried the scheme mentioned and do not know, under these circumstances it would perhaps not be well to dispute the statement of one who has practical experience.

To allow room for only one bee at a time and greater space, we think would make a marked difference. You asked us would we recommend such a course to be pursued we would say no. We have never found it necessary to prevent robbing in such a way we have even two frame nuclei in the apiary in the fall some queenless; by keeping the apiary undisturbed we never have robbing. We should be pleased to hear from others along this line, many useful hints can be given and friend Michener let us hear from you again we have known you for years as a successful bee-keeper of long experience.—  
ED.

### Bees in Relation to Fertilisation.

By J. H. Panton, M. A., Prof. of Biology, Ontario Agricultural College.

During the process of fertilisation the contents of the pollen grains become mingled with those of the ovules, after which the latter develop into seeds. This takes place somewhat as follows: The dust-like substance (pollen) on the ends of the stamens falls upon the top of the pistil. The outer coat of the pollen grain bursts and the inner pushes out in the form of a tube which forces its way from the top of the pistil down through it until it reaches the ovary (the lower and enlarged part of the pistil) where the ovules are located. In the meantime a minute structure (germinal vesicle) has formed in the ovule. This point is reached by the pollen tube, and interchange of elements takes place, the ovule is fertilised and at once changes begin which end in the complete development of a seed.

The question naturally arises, How do the pollen grains get to the pistil? This effected, fertilisation will in all likelihood take place.

Observation shows that this may be done in several ways.

1. *By the wind.* Where this is the usual way we find the plants are rich in pollen, have no nectar grow crowded together, in some cases bloom before the leaves appear and are seldom attractive in appearance. The grasses, willows and some maples af-

ford examples of plants largely dependent upon the wind for the transport of the pollen to the pistil.

2. *By artificial means* Man can effect the same result by simply taking the pollen and placing it upon the pistil. This has enabled him to cross-breed and hybridise to such an extent that he has developed innumerable varieties of plants of great economic value, as is exemplified in our beautiful flowers and luscious fruits.

3. *By birds*, which to some extent aid in carrying pollen from plant to plant, especially such as the humming birds.

4. *By insects* This probably is by far the most common method in nature, and may be viewed as the chief use of insects.

Plants fertilised by insects present an attractive appearance, are rich in perfume, and above all supply nectar to the insects which frequent them. It can be readily seen how insects moving about in a flower will become loaded with the dust-like pollen, and in passing to other flowers aid much in transferring the pollen from one plant to another, and thus bring about a cross-fertilisation, or in other words, cross-breeding, which seems essential to the production of vigorous and fertile plants as it does in animal life.

Among insects which aid largely in this interesting process no class is more useful than bees. Where imperfect fertilisation has taken place fruit is incompletely developed in size and form, so that the quantity and quality are affected. Careful investigation has shown that the fruitfulness of many plants is largely influenced by bees and such insects as search for the nectar and pollen of flowers.

Although many flowers have both stamens and pistils in the same flower, still scientific observation has shown that even in these cross-fertilisation is favored by the structure of the flower. From observations made it is claimed that orchards with beehives in them have been more fruitful than those without hives. In some cases bees have been given access to greenhouses so that the flowers might be fertilised and thus develop more and better fruit under such conditions. Flowers have been covered so as to prevent insects reaching them, but light and air admitted. Side by side were others to which bees had access. An examination of the seed showed those of the former to be weak in vitality, those of the latter strong. In many instances it has been observed where fruit trees were covered with bloom and poor results followed, that the weather at the time of bloom was cloudy, wet and cold and thus unfavorable to bees working among the flowers.

Scientific investigation indicates more and more that bees are important factors in the production of fruit and thus become co-workers with fruit-growers.

## JOHN L. GROSGEAN.

Amongst the successful yet comparatively unknown bee-keepers are many from whom important information may be gained, men, who have been successful and men well known and esteemed in their own locality. To the subject of this article the above is applicable.



John L. Grosgean of the Township of Hamilton, County of Northumberland, was born on August 15th, 1840. He is of French descent his parents leaving their native home in sunny France in the year 1836 and settled in Cobourg, Ontario, the same year. In 1851 his father rented the Massey homestead, Mr. H. A. Massey going into the manufacture of farm implements. In a few years a portion of the farm was bought by Mr. Grosgean. Here young John lived working on the farm in summer and attending school in winter until manhood. In 1870 he married a lady of Irish descent. Mr. Grosgean, followed the noble pursuit of agriculture and owns a farm of 127 acres bordering on the shore of Lake Ontario, 4 miles east of Cobourg. In 1887 Mr. Gros-



gean, had his first experience in bee-keeping having 4 swarms in box hives, they were standing close together through the summer and in the fall he found combs of honey built between two of the box hives. The owner thought he was entitled to some of the honey, but the bees objected to his method of taking it. Mr. Grosgeau got some of the honey but does not know whether he or the bees felt the worst when the task was over. This little battle made the bee-keeper realize he knew nothing about bees and he subscribed for a Bee Journal and sent for all the bee-books he could hear of. Six years after his first experience he put 135 colonies in the cellar and took 131 out alive in the spring.

He keeps about 100 colonies spring count increasing enough for losses and sales.

Mr. Grosgean is esteemed in his own township, he is pointed to by his neighbors as one of their stirring and successful men, he takes a keen interest in municipal and agricultural affairs. He is serving his fourth year in the Municipal Council, he is president of the Farmers Institute and has been twice elected to represent West Northumberland at the Central Farmers Institute at Toronto.

#### Annual Meeting of the Ontario Agricultural and Experimental Union.

The next annual meeting of the above organization will be held at the Ontario Agricultural college, Guelph, Dec. 21st and 22nd next. This body is conducting the largest system of co-operative experiments in the world. It is spending over \$700.00 per annum in this work. The meetings are becoming better every year, Bee-Keeping will be taken up amongst other subjects, the afternoon of the 21st. Farmers and others interested are invited to attend. For further particulars address the sec'y,

R. F. HOLZBERMANN,  
Brantford, Ont.

#### To a Rose in January.

*By John Kendrick Bangs.*

I passed along a bleak and snow-bound way  
One bitter cold mid-January day,  
And on the glistening, ice-incrusted snow  
I saw, in full bloom, a rose.

In fragrance it was sweet, and in its hue  
Unto its own ideal it was true.  
The wintry woes by which it had been  
caught

No single change in it had wrought.

Indeed, it seemed to me a purer thing  
Than any rosebud in the early spring;  
And, like a human soul, it seemed to be  
Enabled by adversity.

## THE HOME.

### The Force in Each Day.

To live each day so that it ministers to the day that is to follow, is the unexpressed hope of every thinking mortal. In business we call this foresight, in education it is love of study, in religion we call it living like a Christian. Each day, whether we will it so or not, represents the highwater mark of attainment. The mistakes of to-day mark the development of business sagacity; the unlearned lesson is the test of intellectual ambition; the sin of to-day measures our strength to resist disease. In mechanics there is an adage that expresses a principle: "The vessel is no stronger than its weakest part." It is true of man. The measure of his strength is where he shows the least resistance; where he is persuaded by outward or inward forces to that act which results in evil in retarding of development, whether in purse, in mind, or in soul.

Men grow narrow because they do not live in sympathy with the times; they grow hard because they keep the world outside; they lose in spiritual force because they keep that force under in their daily life. Every day witnesses to the life lived the preceding day; this must be so, for life is cumulative either in good or evil; there is no blank. Consciously or unconsciously, this force is working for good or evil; stagnation is death. When we realize this to the full, we strive to compel attainment. When we look upon each as a period by itself, we become the playthings of time.

### CONVENTION NOTICES.

The second Annual Meeting of the Glen-gary Bee - Keepers Association, will take place in the Town of Alexandria, on Wednesday 20th of December, 1893. Forenoon session from 10 a. m., to 12 o'clock noon. Afternoon session from one to half-past four o'clock p. m. All are invited to attend.

ALF. DICKSON,  
Secretary & Treasurer.

### Leeds and Grenville Bee-Keepers Association.

The Leeds and Grenville Bee - Keepers Association will meet at the Village of Lansdowne on Tuesday, Dec. 19th 1893. All interested in Bee-Culture are requested to be there, and bring samples of honey or any appliance which might be of interest to bee-keepers.

M. B. HOLMES, Treas.  
F. WOOD, Sec'y.

Athens, Ont.

## CORRESPONDENTS.

Editor Canadian Bee Journal, Brantford.

DEAR SIR.—I notice your comments on my letter in last C. B. J. and may say that I agree with them *in toto*. If you have not changed your position any, you have at least enabled us to see it in an altered and more favorable light, and the wisdom of your position, put in this light, is, I think self-evident.

To change the subject.—Fire is a merciless destroyer and one usually regrets to learn of destruction of property thereby, but I must admit that when I learned by your paragraph, that old "Eli" had been cremated, and that you did not hope to see his like again, it was a source of pleasure and not of pain to me.

I always looked upon him as a horror so hideous that he should never have been seen except in the society of Ghouls, and should never have inflicted his presence upon the sight of that peaceful section of citizens known as bee-keepers. He was educating them into an appreciation of monstrosities instead of exercising a refining and elevating influence. May his ashes long be undisturbed and his place be given to a more worthy than he.

Yours truly, R. W. McDONNELL.  
Galt, 22. Sept. 1893.

Powassan, Ont. Oct. 18th, 1893.

Editor of C. B. J.

I have received your Journal three times and observe you require your yearly subscription for which you will please find enclosed, one dollar.

I have not considered myself a bee-keeper, as I know very little about them, and I have been very sceptical about their doing well in this latitude. Last year however, when I was asked to purchase a hive of bees with movable frames, I decided to have it. I packed it with chaff and in spring it came out in good shape and gave me three heavy swarms which I put in hives the same as the first so that I have now four colonies. The two last did not gather stores enough, so I fed them according to hints from your Journal. The other two are tremendous heavy for their looks, but I do not intend to take any honey from them this year. I was afraid of making some mistake and setting them to robbing,

My principal object is to find out whether bees will winter as far north as this. Last winter was as severe as any I can remember. I am therefore very hopeful. Other people here have purchased hives since I got these and some have had better returns than mine, but I am well satisfied, for if

the farm would do as well we would soon be all above hard times.

I sowed twenty acres of olsike, clover which made myself glad as well as the bees.

Yours truly, &c., A. H. CRAIG.

Sutton West, Oct, 12th, 1893.

Editor C. B. J.

X noted on wrapper of Journal, enclosed \$1.00. I wish you well. I work for extracted only, winter outside in double, walled hives on summer stands. Returns:—1890, 51 lbs per colony; 1891, 62 lbs per colony; 1892, 80 lbs per colony; 1893, 30 lbs per colony.

Yours very truly, JAMES FRAZER.  
N. B.—No Basswood, to-dry for Buck-wheat.

## Bits of fun.

"Mamma," said Johnny," if I swallowed a thermometer, would I die by degrees?"—*Boston Post*.

When the small boy starts early for the pantry it isn't to avoid the jam.—*Chicago Inter-Ocean*.

Different men have different mottoes. That of George W. Childs, for instance, is "Forgive." That of most other men is "For Get."—*Philadelphia Record*.

The following advertisement appeared recently in a French paper: "Wanted, a distinguished and healthy looking man to pe 'cured patient' in a doctor's waitingroom. Address," etc.—*Herald*.

Public Opinion.—"I wonder whether hanging is a painful death? Some people say it isn't at all so." "It must be. Doesn't everybody say that there's nothing so painful as suspense?"—*Pick-Me-Up*.

"Well, well," sighed the wife as she finished exploring her sleeping husband's pockets without having discovered a cent, "this is like one of those railroad journeys, 'going through without change.'"—*New York Press*.

"I thought you said your boy's nurse was a colored girl, Mrs. Hicks," said the visitor. "I saw her to-day, and she's white." "Oh, well, she looks white," said Mrs. Hicks, "but in reality she is very green."—*Harper's Bazar*.

"The other day I was walking beside a railway line with a man who was very hard of hearing. A train was approaching and as it rounded the curve: the whistle gave one of those ear-destroying shrieks which seem to pierce high heaven. A smile broke over the deaf man's face. 'That is the first robin,' said he. 'that I have heard this spring.'"—*Unknown Exchange*.

## Strictly Business.

I have a tempting premium morsel to offer our readers this month, but like many another good thing it is limited in extent. I suspect that the reader who is prompt in his actions will get ahead of the other who takes a month to decide and (if he does not forget) finally writes for the premium only to find it is gone.

\*\*\*

This premium is a work of art and so good that all we can get would be taken at one bite if you good readers could look upon it. It can be obtained by every new subscriber who sends us \$1 direct for a years subscription but will not be given where any other premium or special offer is called for. Even our good but slow friends in arrears can get this handsome premium by sending us \$1.10 but the extra ten cents must be included. It can only be sent to Canadians as the custom wall will prevent one sending it to the United States.

\*\*\*

But what is it? I hear some impatient soul exclaim. It is a portfolio containing eight handsome engravings all different.—Just remember eight beautiful pictures on strong card board size 11x15. They are in a neat cover and need not be framed but shown as a portfolio.

\*\*\*

This offer is only open until our supply is exhausted so exercise a little gumption and act without delay. Some of our friends have paid their subscriptions recently and to those who have sent their payment since October first we will send the Portfolio if they send us 10 cents. Any other subscriber paid ahead can secure the portfolio by sending us \$1.10 and we will credit his subscription one year beyond the time now paid to.

\*\*\*

That trial trip offer of the Journal for four months for 25 cents to new subscribers is open. It is a good way to get your friend interested in the magazine so persuade him to take it or order it for him. Just for the good of the cause.

\*\*\*

You remember I offered a beautiful copy of Longfellow's "Evangeline" for every new subscriber. That offer is still open. This is what one happy recipient says. "A few days since I received that "Evangeline" book premium. I silently watched how the book would take at home. What an attractive book. I love to read an illustrated story, the pictures are so many and so true one could read the story from them alone.

I'll gladly read that book, its so much more pleasant than our other Evangeline were some of the remarks. Many thanks for it."

Yours truly,  
STRICTLY BUSINESS.

## Renew, Renew, Renew.

Several subscribers to the Journal have neglected to send in their renewal, possibly because they did not know the subscription had expired. In order to let such know their standing we have this month marked the wrapper of every one in arrears with an

X

So if you find that mark on yours it means that you are in arrears and should send your dollar at once to secure the Journal at that rate, for the price after three months is \$1.25 per annum. Be prompt please and act on the principle of doing to us what you would want us to do to you if our positions were reversed. It is a good thing now and again to put yourself in the other fellow's place, try it. Send all remittances to the publishers.

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Notices will be inserted under this head for 25c. five lines or under each insertion; five insertions \$1.00. All advertisements intended for this department must not exceed five lines, and you must say you want your advertisement in this department or we will not be responsible for errors. You can have the notice as many lines as you please; but all over five lines will cost you according to our regular rates. This department is intended only for bona-fide exchanges. Exchanges for cash or for price lists or notices offering articles for sale, can not be inserted under this head, unless offering full colonies of bees or honey. For such our regular rates will be charged, and they will be put with the regular advertisements. We can not be responsible for dissatisfaction arising from these exchanges.

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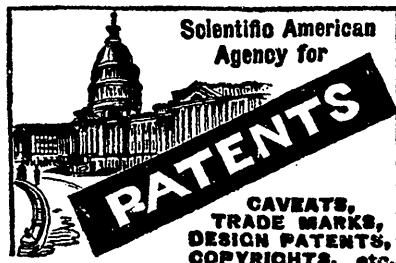
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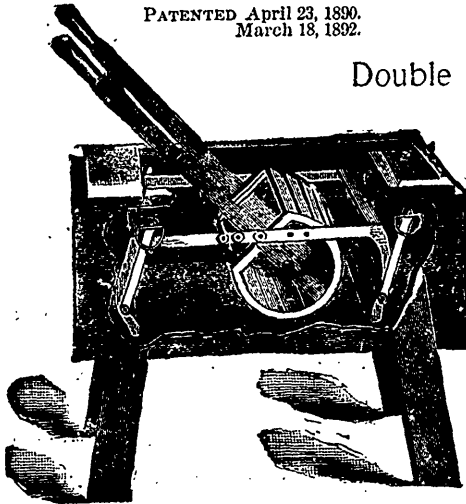
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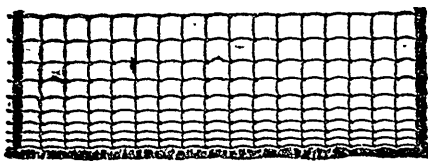
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