The Canadian Bee Journal

Devoted to the Interests of Bee-Keepers

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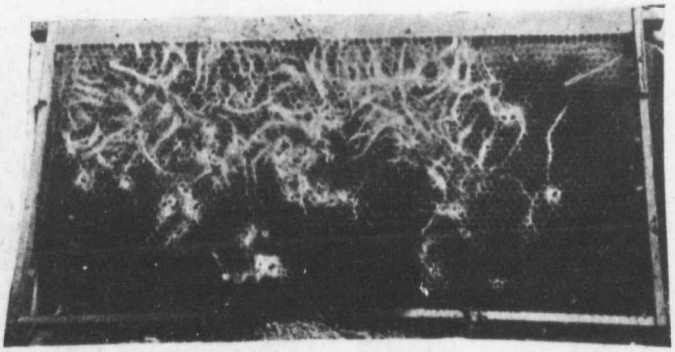

SHOWING THE WORK OF THE WAX MOTH.
Photo by Geo. W. Tebbs, Hespeler, Ont.

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The Canadian Bee Journal

Devoted to the Interests of Bee-Keepers

JAS. J. HURLEY, Editor

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The Canadian Bee Journal

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The Canadian Bee Journal

PUBLISHED MONTHLY

[JAS. J. HURLEY, EDITOR, BRANTFORD, ONTARIO, CANADA

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Towards the latter end of the convention a discussion arose about honey pails, and what they should hold. Some held that 10 pounds of honey was ten pounds gross—pail and all. A few others thought that a pail should hold 10 pounds net; that those who bought ten pounds of honey should get ten pounds. It was easily to see that these latter were in the minority. The writer was one of the minority, and suggested as a compromise that the pails be made big enough to hold ten pounds net. They would then be available for both purposes. Those who wished to give ten pounds net could do so, while those who wished to give only gross weight could put a little less in the pail. This was strongly objected to on the ground that it did not look well to have an empty space at the top of the pail. We were tempted to ask if pails were sold by their appearance with the top off—but we allowed the matter to pass, as it was a matter of indifference to us personally. There is much to be said for the dealer in honey who wishes to sell the gross weight of ten pounds, as it compensates him in some measure for the cost of the pail. Where a quantity of pails are bought it is certainly a very big item. A small dealer supplying a local market can easily get so much for his honey, plus the cost of the pail; but the large dealer must sell the whole as one item, at so much money, and if he is to get paid for his pail, it must be included as so much honey. Here you have the two sides of the case. It was finally left to a committee to decide what the pail should hold. It is pretty safe betting what the decision will be. There is one point here, however, that might escape observation, that ought to be considered by the committee. The specific gravity of all honey is not the same. A pail intended for gross weight might fall short in weight if the honey was light and thin, as against a very heavy and solid honey. There ought to be a little allowed for come and go on this point. We would like to hear from some of our readers on this matter. Our only interest is the interest of the honey producer, but we cannot get ourselves away from the idea that ten pounds of honey ought to be ten pounds of **HONEY.**

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The Experimental Apiary, of which Mr. Pettit is the head, is about to be moved to the Guelph Agricultural College, and become part and parcel of that institution. This is as it should be. There is no reason why apiculture should not have reached the same place of importance at the college as poultry keeping and butter making. The start is being made very late, but it is never too late to get right. The professor in apiculture should be a necessary part of the college staff, as is any other professor there. Bee-keeping offers a career as inviting as poultry, and can often be combined with it. If Mr. Pettit is given his proper place at the college, he will have no time to go out hunting for foul brood.

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The flower show was very fine as usual, the apple display being exceptionally fine. It is a great pity, however, that there are not more bee-keepers who take advantage of this great opportunity to exhibit their honey. The exhibitors are far too few. Those who did exhibit, however, made a very creditable showing.

Since writing our reply to Mr. D. M. Macdonald, which appears elsewhere in this issue, we have come into possession of a book written by M. Quinby, published in St. Johnsville, N. Y., April, 1865. It would appear from this book that Quinby knew that the foul brood disease was in the honey, and he adopted as the plan of curing, the separation of the bees from all old comb and all old honey. He did not formulate a cure as thoroughly as Mr. McEvoy has done, but he appears to have come prety close to it. He recommended driving the bees from the diseased combs, and putting them in an empty hive and applying the starvation cure. He says: "Keep them in the empty hive until the honey taken with them from the diseased hive is consumed —thirty-six or forty-eight hours." On Page 215 he says: "The fact, that when I had pruned out all affected comb from a diseased stock, and left honey in the top and outside pieces, and the bees constructed new for breeding, led me to suppose that it was a contagious disease, and the poison was contained in the honey. Some of it being left in the hives, the bees had probably fed it to the brood." Of one thing he seemed certain; that the disease was conveyed in the honey. But in solving the problem in other particulars he was not quite so successful as Mr. McEvoy.

SCIENTISTS SOMETIMES MISTAKEN.

Professor Cheshire staked his reputation that the honey in foul brood colonies was not diseased, and pushed his drug treatment.

I persistently maintained that part of the honey in foul brood colonies was very badly diseased, and said that nothing short of a thorough cleansing process would cure an apiary of foul brood when it becomes badly diseased. This dispute over the honey and my methods of treatment lead to the putting of Dr. Howard, of Fort Worth, Texas, to work. He had been a practical bee-keeper, having kept as many as 300 colonies at one time.

Dr. Howard wrote to me to send him diseased comb with honey in it. I expressed to him two large pieces of comb which contained foul brood in all stages and honey unsealed and capped. When Dr. Howard uncapped the honey and found the foul brood germs in it he wrote to me saying: "McEvoy you are the Moses in the wilderness that held up the serpent while the children of Israel sat by the stream and wept."

My methods of treatment, when properly carried out will cure any apiary of European or genuine foul brood.

European foul brood will be a thing of the past when the bees in every apiary are changed into pure Italians.

It is the greatest of folly for any person to advocate disinfecting empty hives, because diseae was never, no never, spread through using any empty hives that foul brood had been in.

WM. McEVOY.

Mr. McEvoy asks us to publish the following leter received by him from U. S. Inspector W. D. Wright:

Dear Friend McEvoy:

Your favor of the 25th ult., came to hand. I am continually recommending your method of treatment for either American or **European foul brood,** as the best in most cases, and it has been very effectual when properly carried out.

I have in mind now several good sized apiaries, which were thoroughly treated a couple of years ago, and which are giving substantial returns each year, with little or no disease appearing since. However, these bees were also thoroughly Italianized, a measure which I always recommend in the case of black, Carniolan or hybrid bees, as after thorough treatment they are otherwise liable to reinfection, as long as any disease exists in that locality."

W. D. WRIGHT.

Nov. 8th, 1909.

FOUL BROOD CURE IN CANADA.

D. M. Macdonald's Criticism in British Bee Journal.

Mr. D. M. Macdonald writes as follows in the British Bee Journal of October 28th, 1909, in reference to our criticism of the disinfection of hives, and the methods of foul brood cure in Great Britain:

"More in sorrow than in anger" I revert to this unsavory subject. Mr. Hurley has devoted a large part of several issues endeavoring to put an extinguisher on me and my plea for disinfecting hives, and sad to say, he has been partially supported by two other editors. It appears to me that they are referring to something else—some other disease than virulent foul brood. In support of my original statement I will quote two or three leading Canadians. Mr. Holterman has put on record that frequent outbreaks follow the orthodox mode of cure, which was just my contention. Mr. McEvoy, in the August issue, (page 294),, writes: "My method of treatment is a thorough cleansing process, and where it is fully carried out will cure any apiary of any kind of disease." That phrase **thorough cleansing process,** reads as if he had repeated my very words. Mr. Byer, in the American Bee Journal, reprinted in The Canadian Bee Journal (page 344), lets in some light on the subject, and proves the virulence of the disease I dealt with, and incidentally tears his editor's arguments to tatters. His words are: "Under this disease's insidious methods of attack we are almost entirely helpless. What we knew in the past is a mere bagatelle compared with this disease, which while it yields temporarily, is liable to break out again." Let me quote yet another authority of Mr. Hurley's—viz., Dr. White, of the Apicultural Bureau: "We shall expect that disinfectants will be much more readily effective."

Now, let me deal with another phase of the subject. Mr. Hurley reprints a letter written to our Journal on "Disinfecting Hives," by Mr. S. P. Soal, and in a footnote he jubilantly exclaims: "Our British friends seem hopelessly at sea in the cure of foul brood." Now our system must be misunderstood by some on the other side, because it is even more drastic than the American or Canadian plan. It consists in a destruction of all internal fittings by fire in a bad case, plus a thorough disinfecting of the hive. For a milder case we advise shaking the bees off combs and restarting them, after a period in quarantine, on new works in a new or clean hive. We take no risks! Yet this Canadian editor claims, "We can teach the British how to cure foul brood"! I hope as he grows in years and experience he will take a broader and more cosmopolitan view of apiculture. I have no desire to say one word against Mr. McEvoy. He has worked strenuously for the good of Canadian apiculture, and I respectfully doff my hat to him. But (and Mr. Hurley's "spread-eagle" foot-note leaves me no other alternative) we knew and practiced this method of foul brood cure before the present editor of The Canadian was out of leading-strings as a bee-keeper, and even before the existence of The Journal, and yet we were not its originators. Shirach, a German bee-master about 1760, practised the "shaking" method as a cure, and wrote in favor of it. Again, turn to an American author, writing in 1866, but of experiences extending back to 1836. At page 212 of Quinby's "Mysteries of Bee-keeping" will be found these words: 'The only effectual remedy is to drive out the bees into an empty hive." He found to his loss that milder measures cost him dear. Again, Mr. Alexander is recommended as the author of the plan of dequeening until a certain time has elapsed, although our Mr. Simmins has put in a prior claim. Let me supply the name of an earlier claimant. I quote the revered Dzierzon (page 274): "The queen must be kept caged until all honey has been used up. To put a stop to the evil, immediately catch the queen as soon as the foul brood cells have been observed." New-old theories and plans should be sifted, and possibly if the foregoing facts had been known to Editor Hurley he might not have crowed so loudly. When Canada produces anything original really good I for one will gratefully acknowledge it.

As other American editors seem to have hazy notions about the British plan for curing foul brood, I would respectfully refer them to pages 180-181 of the latest edition of the "Guide Book," by Mr. T. W. Cowan. There he advises in a bad case to "burn bees, combs, frames and quilts," plus a "thorough disinfection of the hive." In a milder case "make an artificial swarm, etc." What Canadian system is better? As the editor of Glean-

ings says in the last number to hand: "Foul brood is too terrible a disease to take any chance with." Therefore, we on this side disinfect hives and thoroughly cleanse them.

Drugs have been named in a condemnatory way. I never used a drug in any of my hives; but I believe in them, not as cures, but as preventives. That is why they are used in this country—not as cures, I repeat. It should be thoroughly impressed on bee-keepers that although there are two kinds of foul brood—a mild and a virulent (a fact known to Dzierzon nearly fifty years ago)—one should always guard against the worst. That is the sensible view taken by the Apicultural Department of Canada in a late circular.

My dear Macdonald, we trust that our discussion may be conducted neither in "sorrow nor in anger." Why should it be? In discussing this subject the writer sees and feels only the call of duty. It is a matter of small importance to us personally whether we be right or wrong. So long as we do what we believe to be our duty with the aid of the small knowledge we possess, we will rest satisfied. We approach the discussion with motives entirely altruistic and utilitarian, and with the one and undivided desire of bringing out the truth. Personal vanity forms no part of our motive. For being young and inexperienced we can only advance the plea of Pitt, in his famous reply in the British House of Commons, when charged with being a "young man." Without dwelling upon the fact that this is the "age of the young man," we will proceed to show that there was very little "spread-eagle"-ism in our footnotes, or in anything that we wrote on this subject.

Taking up the objections seriatim, we find him first making this statement: "It appears to me that 'they' "—myself and other editors who agreed with me—"are referring to something else—some other disease than virulent foul brood." This is his first error. He proceeds to argue from this false premise. No. We are referring to foul brood—American foul brood—bacillus larvæ—virulent or mild. Then he proceeds to cite what Mr. Byer said, (page 344) and says that he "tears the editor's arguments to tatters." This statement is also absolutely wrong. Mr. Byer was referring to the new disease that has afflicted the eastern part of the Province of Ontario this past year. It is not bacillus larvæ, but is known as "European foul or black brood," in which the bacteriologists have not yet found the germs of bacillus larvæ. This disease is, at the present time, giving us great uneasiness. If you will read Mr. Byers' previous writings in the American Bee Journal, you will notice more particularly the distinction he makes between this disease and foul brood, as we understand it—bacillus larvæ.

Now for the methods of cure. He quotes Mr. McEvoy: "My method of treatment is a **thorough cleansing process,** and where it is fully carried out will cure any apiary of any kind of disease." Then he claims that this is his very method (words). Very well, let us see if this is correct. We quote:

"Now our system must be misunderstood by some on the other side, **because it is even more drastic** than the American or Canadian plan. It consists in a **destruction** of all internal fittings by fire in a bad case, plus a thorough disinfection of the hive. For a **milder case** we **advise** shaking the bees off combs and restarting them, after a period in quarantine, on new works in a new or **clean** hive. We take no risks! Yet, this Canadian Editor claims, 'We can teach the British how to cure foul brood.' "!

This is destruction! We would respectfully draw our friend's attention to the fact that there is a very great difference between "a thorough cleansing process" to bring about a cure, and one of "destruction." The former cures, the latter destroys. We have been discussing CURE, not destruction. What would we think of a physician who killed his consumptive patient and then boasted of curing the disease! The McEvoy method has cured and will cure, the most virulent cases of foul brood—that is it will save

the lives of the bees that are found in the most badly diseased colonies, if there are enough bees left to make a fair-sized cluster. In mild cases, he says, "we advise shaking the bees off combs"; the inference here is that in a bad case (as stated in the clause above), the bees are also destroyed along with the "internal fittings." And then he shouts with glee, "we take no risks!" And he calls this curing! Then with proud indignation he exclaims "yet this Canadian Editor claims 'we can teach the British how to cure foul brood' "! Again, boastfully,—**"But we knew and practised this method of foul brood cure** before the present editor of the Canadian was out of leading-strings as a bee-keeper, and even before the existence of the Journal." That is a bit speedy, my good friend, and it will now be our painful duty to apply the curb-bit. Who was it that taught you that the germs of foul brood was conveyed in the honey? You are too sensible a man not to know that the knowledge of this fact constitutes the great philosophic and scientific principle of "shaking." Shaking previous to this was unmethodical and haphasard. It failed more often than it succeeded, and the reason was unknown to you. It could succeed only in very mild cases. And we think that herein lies the genesis of the attitude of the average Britisher to the cure of foul brood.

It is to a Canadian you owe this knowledge. Mr. McEvoy was the first who announced this fact. It was received with ridicule. But it was true! Impartial discussion and investigation proved the truth of Mr. McEvoy's discovery. It is the cardinal principle of the modern foul brood cure by shaking. It has been given to you by a Canadian—your quotations from ancient history to the contrary notwithstanding! Again, who instructed you to make a double shake? First on starters and then on foundation, after the lapse of four days? We would hold you to this: **Canada has taught you** how to cure foul brood!

The many instances that have occurred from time to time, as reported in the B. B. J., of bee-keepers trafficking with drugs in the hopeless endeavor to cure foul brood, must be our excuse for having said on a previous occasion "Our British friends seem hopelessly at sea in the cure of foul brood." And we are still of that opinion. Here is an example:

H. O. Morgan, Bristol, writing in B. B. J., of July 29, (7542) says: "Replying to Mr. S. P. Soal's remarks on above [disinfecting hives] I think most people will agree with him so far as he goes. He seems but to elaborate the 'Guide Book' instructions, only that he does not go on to say that the infected bees should be confined for forty-eight hours in a skip or box and then fed, on transfer to clean hive, with medicated food. Without this latter precaution all the foregoing scorching and disinfecting of hives, appliances, etc., may very probably prove lost labor."

Even the above would justify our statement. Mr. Morgan has a faint knowledge of the proper method, but his forty-eight hours should be ninety-six.

Mr. Macdonald quotes Prof. G. F. White. Listen further to what Prof. G. F. White says in Bulletin No. 75, Part IV.: "Some preliminary experiments have been made, but the results do not indicate that drugs, in the treatment of this disease, have the value advocated by some English writers." It is Mr. Macdonald who will have to revise his new-old theories, and admit the **new** that we have added to the old. We think that the Canadian and American editors are quite capable of taking care of themselves, and if their notions are "hazy" they are willing at all events to learn from those who can teach. In many matters Mr. Macdonald can teach. We have very much enjoyed and very much profited by reading his writings in the British Bee Journal and the Irish Bee Journal, and we hope he may long continue writing.—Ed.]

THE GREAT VALUE OF SLOW UPWARD VENTILATION IN WINTER.

(By R. B. Ross, Jr.)

At the risk of being frowned upon by older members of the craft I am going to get rid of some thoughts on the subject of wintering which runs counter to the ideas of those who advocate sealed covers.

In the first place the conclusions to which I have come are the result of experiments and observations covering a period of over twenty years, during which time I, particularly in the earlier years, paid more than I should have for the experience. I have now come to the conclusion that the man who neglects to try some of the other fellow's plans in a small way until he finds something suited to his own needs will without doubt throw away some money that he might have just as well kept. For years I, therefore, hammered away with sealed covers, in various repositories, until a strong article in one of the bee papers some years ago lead me to give a decent trial to slow upward ventilation.

Among the various wintering houses which I have tried are the following:

1. An underground root-house in a clay bank.
2. A hayloft.
3. A trench in the ground a la Townsend.
4. A cement-floored, stone-walled cellar under dwelling house.
5. A specially made bee-cave and vegetable house, combined.

My experiences with the root house and hay loft were both disastrous, but from different causes; the first, because I did not know anything about "upward ventilation," and the place was so damp that the combs were badly moulded. Both root house and bees should have been ventilated and I am sure the results would have been different. I regret that I cannot make further experiments with this style of wintering, as the root house is not now available.

The hay loft was not a success, because being inexperienced I did not make it sufficiently light-tight, and the bees wasted so that those remaining in the spring, although perfectly healthy were greatly reduced in numbers and succumbed to bad weather.

With the limited experience that I have had with the third method (a trench in the ground) I cannot speak with any authority, particularly as I made the experiment under unfavorable conditions such as one should not have usually to contend with. I don't mind hard work when it is necessary, but I found the labor such in my one experience with this plan that I don't want further trials with it except for experimental purposes. It is only fair to say that I did not provide the hives with "upward ventilation." Had I done so I believe I would have had better results.

For many years I have used the house-cellar described under plan No. 4, the temperature of which varies from a few degrees above freezing (about 34° or 35° F., when I forget to close the window during cold snaps, which makes apparently no difference) up to 60° F. or more in the spring. In this I have tried sealed covers, large and small entrances, hives raised on blocks, as well as the ordinary opening of 7-8 inch x 14 inch. I found that as long as I left the covers sealed on tight, just as the bees had fixed them, there was no uniformity of results. But since removing covers, and throwing a heavy gunny sack over the hive, I have had no apprehensions as to good wintering, and this during a period of several years past. Even weak nuclei, kept independently of each other for the preservation of queens, winter splendidly.

Lastly I came to the experience of using a bee-cave and vegetable-house combined, differing in almost every respect from the old root-house of my earlier trials. Having a small apiary in the country, I built what the French farmer calls a "cavereau" or cave in the side of

a small hill. When we had dug out part of the earth during construction we struck a cap of rock which prevented our going as deeply as we had intended for protection against frost. Fearing the cold might follow along the rock from the outside, producing too low a temperature, I determined to give the bees a little assistance while at the same time giving "upward ventilation." I, therefore, placed some newspapers on top of the bagging, over the centre of the frames, leaving a margin of about a couple of inches at the sides and ends of the hives protected only by the gunny sack. The following spring, although mould had developed heavily on the walls and refuse, the bees had wintered perfectly, as dry and clean as could be desired.

The advocates of sealed covers may say, "It's all very well for cellar wintering, any old way will do," but I have not found it so. As far as sealed covers are concerned, when outdoor wintering is practised, I think that it is even more important to allow a very slow current of air to move upwards and carry off the moisture. I have wintered bees packed in dry forest leaves with provision made for upward ventilation, when the temperature has hovered away down in the neighborhood of 25 to 30 degrees below zero for many days at a time. This was back in the mountains where I have my little out apiary. The results would make me practice the same methods again, did I not feel that cellar wintering, properly carried out, is the BEST way of all for cold climates.

"Gleanings" has recently been insisting on the advisability of using sealed covers and absolutely excluding upward ventilation. I cannot but think that Editor Root's experiments have been in some way faulty, for why should his experience be so different from that of others? Given a well-provisioned hive with an entrance large or small, deep or shallow, or even no entrance at all, as when the bottom board is entirely removed; then a covering in the form of a heavy gunny sack (with a newspaper laid losely on top if the cellar is likely to be very cold), and small or strong colonies will winter with almost uniform success in my experience.

Will Mr. Root not try say three colonies of differing strength, but with good stores, in this way, and report?

DENTISTRY AS APPLIED TO TREES.

State Zoologist Surface found a letter in the mail sent to the Division of Zoology of the Pennsylvania Department of Agriculture, asking how to prevent decay in a tree from making further progress. The wrier said: "We have a cherry tree whose trunk has rotted considerably. What can be done to save the tree? Is it a good plan to cut out the dead part and fill up the hole with cement."

Professor Surface replied: "The proper treatment for the cavity of your cherry tree is to clean this out, remove the decayed wood; then wash or spray the interior with an antiseptic, such as a two per cent solution of formalin, or a very dilute solution of mercury bichloride, which is corrosive sublimate; then paint it with ordinary paint of any kind, and finally fill the cavity with any kind of cement with about four or five parts of sand.

"This is practically nothing else than the principle of modern dentistry applied to the preservation of the tree. The dentist cleans out the cavity of a decaying tooth, applies an antiseptic to prevent further decay, and fills the tooth with some substance that by preservation will prevent further decay. We are coming to see that the treatment of all living things for ills and affections is based upon the same fundamental biological principle."

[Our readers will readily recognize in the above, our friend, Prof. Surface, of Pennsylvania, some of whose writings on apiculture have already appeared in the C. B. J. Prof.Surface is one of the best in his class in America.—Ed.]

HOW TO GET FULL CROP AND MAKE INCREASE.

(By Henry D. McIntyre.)

How can we produce a full crop of honey and make one hundred per cent. increase the same season. The above question will be of little interest to the professional bee-keeper, who has all the bees that he wishes to take care of, but is the hardest nut that a beginner has to crack. Many are the ways that I have tried, but they all meant a more or less reduced honey crop. If we form neucli in June and let them build up into full colonies, we have weakened the parent colony at a critical time. If we allow each colony to swarm once, we have cut out storing in the supers for the clover flow. The plan I now use is as follows, and if it is the means of helping any beginner, I will feel as much pleased as he. I do my best to keep all colonies together during the light honey flow, which ends here about July 20th, thus getting all the honey in the supers that is possible for the bees to gather. At this time, (July 20) I take the colony that I wish to divide and remove it to a new stand, some distance away, putting in its place a hive containing eight drawn combs (with just a little honey in them) and a tight-fitting division board in the centre. I next contract the entrance to about three inches in width, and have it exactly in the centre, so that when the old bees return there will be a part of them on each side of the division board. In about two days all the old bees will have returned (if the weather has been fine) and will be howling for a queen. I will now put a ripe queen cell in a protector and give one on each side of the division board. After the cells have had time to hatch and before the virgin is old enough to mate, I move the entrance blocks together, thus forming two entrances, one at each outside corner. By doing this each virgin when she returns from her mating trip will stand a better chance of getting into her own home. By this method we have two chances of getting a laying queen into each colony, and if one gets lost in mating I pull out the division board and give all the bees to the other. There is no question but that these two young queens will put up more brood than one would, after the main flow is over. After these young queens have got up a god-sized brood nest, I pull out the division board and take one from each colony that I made and requeen any colonies in the yard that has a queen two years old, as I find it doesn't pay to keep a queen through more than two winters. If I can't use them all in this way, I let them remain, that is, one on each side of the division board until next spring, as I sometimes lose a queen at that time, and it is very nice to be able to get one so handy by. What have we gained by the method? 1st, I have taken all the old bees from the colonies moved to the new stand and claim they are in better condition to go into winter than they were when they had all these old uneasy bees that would be only consumers if left with them. 2nd, Having these old veterans on the old stand by themselves with two laying queens to each hive they will go to work and hunt up nectar that they wouldn't think of gathering if they had not been divided. 3rd, I have taken these old bees that will all die before spring and have worn them out caring for brood that will hatch into young bees that will live until next fruit bloom time. It may be necessary to stimulate these old bees some seasons, but if I do have to, sugar syrup is only half the price of honey, and I have plenty of young laying queens to requeen my yard at all times and they don't cost me one cent's worth of honey each, as I don't have to split up good colonies into neucli for the purpose of getting them mated when the honey flow is on.

Galt, Ont.

[At first sight that looks like a capital method, Mr. McIntyre. We are very much indebted to you for your contribution, and sincerely hope you will write us again.—Ed.]

THE ANNUAL CONVENTION.

The annual convention of the Ontario Bee-Keepers' Association took place in Toronto, in York County Chambers, on Nov. 10, 11 and 12. There was a good attendance as usual. There is always a face or two that does not appear, while there is always some new face appearing for the first time. Thus the natural law holds true at bee conventions as in all else. The discussions were well sustained and harmonious. We were pleased to see our old friends from the U. S., Messrs. House, Clarke and Herschiser. Among the pleasing events of the meeting was the placing upon the carpet two good old reliables in the persons of Mr. Martin Emigh, treasurer for many years, and Mr. William McEvoy, of foul brood fame, to receive the thanks and blessing of the Association on their retirement from active work as officers of the association.

Promptly at 2 o'clock on Wednesday afternoon, President Couse called the convention to order, and after the reading of minutes by Mr. Hodgetts, the popular and indefatigable secretary, read the following address:

President's Address.

As bee-keepers, as an Association, as citizens of the Province of Ontario, we have a great deal to be thankful for. We have been able to secure an excellent crop of honey of the best quality and realize on it a good price and with quick sales. From information gathered the greater part of the honey has gone out of the bee-keepers hands and much of it out of the province to the west, where there is such a growing demand. As bee-keepers we can well afford to increase our stock of bees to fill the want that seems beyond our present powers to fill, as from information gathered many bee-keepers sold short and have been trying to purchase from their neighbors, who are also short. This has not always been the case at this early date. The quality of our honey has had much to do with bringing this about. We must not be satisfied with the present standard, but keep on raising it to greater perfection. We believe it has no superior at present. To use the words of a very large buyer who is particularly fond of honey and has opportunity of testing the honeys of many different countries, none are its equal. As the production of honey is beneficial to other industries, such as fruit growing, horticulture and clover seed growing, bee-keeping may well be considered an asset and benefit to the province of no small amount.

As an Association we have every reason to congratulate ourselves on reaching the high level which we have atained. We have an Association of considerable importance, its members being drawn from all parts of the province, thereby raising the standard and increasing the knowledge of bee-keeping the province over.

We have a foul brood law, which is recognized and copied by other countries; which has been the means of keeping down, and we hope will finally eradicate this dreaded disease. To accomplish this we have now 14 inspectors of apiaries appointed from among the very best bee-keepers of the province, who are imparting a general knowledge of bee-keeping on every line, as well as on the foul brood.

We have now at Jordan Harbor a government apiarist, whose duty it is to make experiments in all matters for our benefit, and also to lecture and demonstrate to pupils on apiculture at the Ontario Agricultural College at Guelph. We believe that this appointment will help us greatly in reaching definite conclusions by experiments in many point. One of the things he might do would be to import queens direct from other countries and give us the benefit of their breeding by distributing them over the province, when the stock proves good.

We have a crop report committee which we believe has been of great value to the

the members of the Association, and to what extent some have very little knowledge, particularly those who are not members of the Association. We feel that there are many bee-keepers who should be members of the Association and they are cordially invited to become such.

For six years we have joined with the Fruit, Flower and Vegetable Growers' Association in making a combined exhibit of our different products. This may not seem of very great importance at first sight, but we believe that Toronto is the greatest honey consuming city in America as at present almost all wholesale and retail grocers of any importance handle it, whereas twenty-five years ago the druggists handled the greater part of it. We believe this has become so from the fact that the honey has been exhibited here as no where else for all these years.

All this has been accomplished not only by the officers and members of the past one, two, three or more years, but by the assistance of the original promoters of the Association, and we are now reaping what they sowed; therefore, let us do something for those who follow us.

As citizens we feel that we are being treated fairly and liberally by the Provincial Government in the matter of financial assistance, greater than ever before, and if we do our duty, and prove our worthiness, we can hope that our worthy secretary, who is so closely connected with the Department of Agriculture, will care for our interests in the future as he has done in the past and greater developments may be looked for each year.

In holding the position of president for the past year. I have felt it a great honor conferred on me by the members of the Association, and I can assure you that in every particular all our Association work has been of the most pleasant nature.

There is one officer that I regret decided a year or more ago that it was his duty to resign, that is our old associate and friend, Martin Emigh, the treasurer, who has kept us afloat and in a direct line for so many years. I am sure you all regret this separation, and had you been as closely associated with him as I have been for a quarter of a century, you would know more of his worth personally, and as an Association worker. There is no record against him for kicking over the traces in all these years.

In conclusion you are all cordially invited to take part in the discussions at each and every session of this convention, so that we may be greatly benefited by being present, and this invitation is not only to our own bee-keeping friends, but to those from across the border, whom we are so pleased to have with us. We will be benefited by their presence in friendship as well as business.

REPORT OF DIRECTORS

Ontario Bee-Keepers' Association.

The membership of the Association for the year is 276. Of this number 174 came in from the affiliated associations, the balance in single subscriptions. There has not been much change in the membership from year to year, and it is just a question whether a special effort should not be made to increase it through the organization of local associations in other parts of the province, and also through soliciting single subscriptions from bee-keepers where there are not enough to organize associations.

The section of the Horticultural Exhibition devoted to honey, shows in the entries that there is very little competition from other than two or three of our large exhibitors. This is disappointing, and something should be done to effect a change. Last year there were entries received from quite a number of smaller bee-keepers, but this year there are practically none, except those who make a business of attending these exhibitions. The prize list was revised this year, so as to reduce the number of sections, but we increased the prizes with the hope that other parties would be induced to show.

This, however, has not had the desired effect. There is no doubt that the exhibition serves the purpose of bringing our product before the consuming public of Toronto; at the same time we should get as much competition as possible in our shows to keep up the excellent quality of our honey. The sections cut off were those calling for new inventions, packages, etc., and which were found to be of no value.

The foul brood inspection was again carried on during the year through the department. The districts were reorganized and fourteen inspectors in all appointed for the province. The grant was raised to $2,500. The full amount has been spent, and it is hoped that the reports of inspectors will show that some gain has been made in checking this disease. The inspection in the east has shown that Black or European foul brood has spread much farther than a year ago. The address by Mr. Scott, the inspector for one of the eastern districts will, it is hoped, bring out a full discussion on the best methods of treatment for this disease.

The department again prepared a report on the condition of the industry which has been sent to all parties interested.

After the reading of the above, the convention settled down to work. It will be impossible for us to attempt a detailed report of the meeting, with the space at our disposal, neither do we think it would be desirable. We prefer to treat the different subjects dealt with by the convention, under their separate heads, as space and opportunity permit.

The most important paper coming before the convention was undoubtedly that of the Provincial Apiarist, Mr. Morley Pettit, who has been busily engaged during the past year in organizing this new department. His work has given excellent satisfaction to all, and promises good things for the coming year. The following is the report:

PROVINCIAL APIARIST'S REPORT, 1909.

(Morley Pettit).

The Provincial Apiarist was appointed by the Ontario Department of Agriculture to promote the interests of the Beekeeping industry in the Province of Ontario. His duties began April 1st, of the present year, part of each week to be spent in experimental work and part in the inspection of apiaries and in lecturing in Apiculture at the Ontario Agricultural College, Guelph.

His first duty was to secure bees for the Experimental Apiary which was to be established at the Horticultural Experimental Station, Jordan Harbour. The points to be considered in selecting colonies of bees for this work had reference to the general condition of the bees and hives. The hives should be of standard make, preferably Langstroth, with straight combs. The bees should be pure bred Italian, free from disease, and in good condition as to queen and strength of colony. After considerable correspondence, twenty-five colonies of pure bred Italian bees in ten frame Langstroth hives with twenty-five extracting supers, containing new wired combs; also a number of comb honey supers, were purchased from Mr. F. P. Adams, Brantford. As Mr. Adams had wintered his bees out of doors and as their strength was considerably reduced by the exceptionally late spring, it was thought advisable not to unpack them for moving until settled warm weather, about the first of June. At that time they were moved to the Experimental Station, and worked for extracted honey and increase. The confusion of getting the bees moved and settled, getting the building up, and other things in shape left very little time for experimental work.

A start was made, however, by finding out what had already been done at experiment stations to avoid needless going over ground that had been fully covered.

For this purpose a circular letter was sent to all the Agricultural Experiment Stations in Canada and the United States. Most of these report that they are doing nothing with bees. A few had done some work with bees years ago but had dropped it through pressure of other things. The Central Experimental Farm at Ottawa did some work under the direction of Mr. John Fixter on which he has reported to this Association at former conventions.

The Michigan Experiment Station reports that a large amount of work had been done from 1870 to 1894. Since that time practically nothing had been done and the Institution has not been keeping a stock of bees for about ten years.

The Kentucky Agricultural Experiment Station reports that they have been experimenting with two varieties of bees, the Cyprians and the Carnolian, for some years, but have published nothing in the form of a bulletin.

Mr. G. M. Bentley, Assistant State Entomologist, Knoxville, Tenn., writes as follows: "We have kept bees at the University Farm for the past three years. Our main purpose has been to determine which honey bee would do the best in this locality and the amount of attention necessary to give bees in order to get the best returns. We have been handicapped in the work by the lack of means and time to devote to this kind of work. The apiary has been successful and has been the means of creating a great deal of interest in bee-keeping throughout the state."

At the Maryland Agricultural College, the State Entomologist has done some work on the subject and is trying to determine the benefit of bees in pollenization of fruits and other crops.

Mr. E. E. Scholl, Assistant in charge of Apiculture at Texas Agricultural College writes as follows: "The work under way at the College Apiary at the present time consists of the following: A study of the bee diseases of the State conducted by Louis H. Scholl, District Foul Brood Inspector. A study of honey yielding plants in different localities. This is done principally by our travelling assistants. The production of honey vinegar from the poorer grades of honey and washings. The method used is that followed out in Arizona by Professor Vincent. Comparing the different strains of bees as to the best honey gatherers is another line of the work. The study of the value of concrete bottoms in localities where the wooden bottom boards will not withstand moisture and other conditions. The planting of various honey plants to determine the value of such plants in a barren locality. We have tried buckwheat, Rocky Mountain Bee Plant, Cow Peas and Sweet Clover. They all have proven successful. Besides we have made tests of bottling honey in different temperatures to determine the exact temperature at which the honey will keep from granulating. These are some of the experiments we are trying now. I will give you the results at a later date. Yours very truly, E. E. Scholl."

Several of the states have issued bulletins on the status of bee-keeping and bee diseases; but by far the most extensive work is being done by E. F. Phillips, Ph. D., in charge of Apiculture, United States Department of Agriculture, Washington, D. C. In reply to the circular letter, Dr. Phillips sends a six-page letter outlining his work from which the following has been condensed:

"Dear Mr. Pettit,—I am very glad to hear that a new Experimental Apiary is to be established by the Ontario Government and I congratulate you on your appointment as Superintendent. I may say first of all, that I shall be glad to co-operate with you in every way possible and if I can help you any it will be a pleasure. It will be an advantage to both of us if we can co-operate in the work.

To give you an outline of our work is something of a task, but I shall summarize the various projects from my last Annual Report and add explanatory remarks as they may present themselves.

Bee Disease Investigation—The causes of the two contagious diseases have been studied and it has been definitely established that bacillus larvæ IS THE cause of American foul brood. The cause of European foul brood is not known, but various micro-organisms found in brood dead of this cause have been studied. We expect to continue this work and this summer particularly to study the distribution of the diseases in the United States. A bulletin is in preparation giving a summary of the work in bacteriology that has been done here and elsewhere. Last summer extensive experiments in treatment were carried on and this will be continued this season. The object is to find the cheapest method of successful treatment and if shaking proves to be the only effectual method, then to find the most effectual time and method of shaking. The results so far are very significant.

Races of Bees—The Bureau formerly distributed queens of various races of bees. This has been discontinued and I do not believe that the work is at all valuable. We keep on hand lists of breeders of various races and in case of inquiry give the names of at least four nearest the applicant. No partiality is shown any breeder.

Honey Analysis—In co-operation with the Bureau of Chemistry we are having analysis of honey made and this is now being done on honeys imported into the United States.

Wax Analysis—The same thing is just being begun with wax. Market conditions are also being studied as well as wax production, uses of wax, etc.

Activity of a colony—Last year we had a hive on scales for an entire year with weighings every hour during the day and all night for three days a month. Readings were also made of five thermometers inside the hive, one at the entrance (inside) and one outside. The results are now being tabulated. It is remarkable what all can be gathered from such data.

Study of the Status of Bee-Keeping—I enclose some blanks which were used in gathering and tabulating reports of bee-keepers. Our work in Massachusetts is now in press and similar work is being done in Maryland, Pennsylvania and Virginia. This is the means of sending out great quantities of our literature and locates lots of diseases. It also enables us to find out the conditions of bee-keeping quite well. The labor of this work is enormous.

Anatomy—The anatomy of the bee has never been described in a satisfactory manner and the books in common use are full of errors. We expect soon to publish an extensive bulletin on this subject, illustrated by about one hundred drawings made from the bee and not copied from some other book.

Embryology—The development of the bee is very imperfectly understood and seems to me to be of great importance. For this reason this is being studied by a man thoroughly trained in his work.

Behaviour—It has long seemed to me that the greatest need of the practical bee-keepers was a more intimate knowledge of the behavior of bees. Too many of them work by rules that some one else has laid down. Too many of our manipulations are not fully understood. We propose, therefore, to make a very detailed study of bee activity and shall try to find out the basis outlines of bee behavior.

Bibliography—The literature on bees and bee-keeping is so extensive that it is very difficult to cover the ground. To aid in our work here we are making a bibliography by books and papers on this subject. This has been going on for about a year and a half and we now have at

least 15,000 titles arranged according to authors and subjects.

Translations—When an article in a foreign language is important, and will be needed frequently for reference, it is translated, copied and filed.

There is so much to do that we welcome help from Canada,"

Truly Yours,

E. F. PHILLIPS."

Work along some of these lines has been begun by the Ontario Provincial Apiarist and as the equipment grows some really valuable results can be obtained for the benefit of Ontario Bee-Keepers.

Two hives of bees were placed in the windows of the office at the Experiment Station with flight opening through the window sash, one small colony on a Root observation hive and the other a good average colony in a ten-frame Langstroth hive placed on scales and weighed morning, noon and night for about two months beginning the 24th of June.

These weights have been tabulated in parallel columns with morning and evening weather report of the Experiment Station. A series of such record covering a term of years would give some idea of the influence of weather conditions on the working of bees and the nectar secretions of blossoms. Of course no definite conclusions can be drawn from the records of one season. It might be said in a general way that the greatest daily increase of weight was 13 1-2 pounds on June 28th. The day was fine and clear with some breeze and a temperature rising from 60 degrees to 81 degrees during the day and dropping to 60 during the next night.

On the night of July 2nd, a thunder storm followed by strong north wind and a fall of temperature to 56 degrees on the 3rd, cut off the honey flow so it was only spasmodic until it dropped to practically nothing after the 9th of the month. The eight days preceding July 2nd, gave an increase in weight of eighty pounds.

Another feature of these results is the fact that the morning weight was always less than that of the night before. This might be ascribed to the evaporation of nectar, but the loss of weight was not found to be in proportion to the previous day's gain; in fact it continued to range between one and two pounds nightly until the night's loss was greater than the previous day's gain, and the hive was found to be weighing less from day to day.

Comb Building—It is of practical interest to bee-keepers to know how much wax from the foundation is built in the cell walls of the comb. To test this 5 pounds of medium brood foundation were secured from Messrs. Ham & Nott which they had colored black with a vegetable dye. It was placed in wired frames and given to the bees, some in extracting supers and some in brood chambers. The results varied according to the strength of the colony and the honey flow. In some cases the resultant comb was colored clear to the ends of the cells. In others it was shaded off to white at the outer ends of the cells. Apparently about one-half of the cell was composed of the original foundation wax.

Testing Appliances.—In comb honey production, samples of the following were received: The Bachmann Comb Honey Super, The Crane Cellular Paper Shipping Case, The Wire Cloth Separator, but owing to pressure of other duties, no comb honey was produced thi season and these could not be tested.

In extracted honey production the wire queen excluder manufactured by the A. I. Root Co. was found very satisfactory and an improvement on the old style perforated metal.

An uncapping knife received from Mr. W. A. Chrysler, Chatham, is a decided improvement on the beveled knife with offset handle in common use. It is nothing but a straight handled carving knife with blade about twelve inches long and an inch and a quarter wide. This will reach across a Langstroth comb with handle clear to uncap with one strong

stroke. The blade should be very stiff and not too wide.

Uncapping Machines—An effort is being made to secure samples of uncapping machines but so far the correspondence has been one of hopes deferred. The Canadian machine invented by Mr. William Bayless, of Brantford, is not being manufactured for sale.

Mr. A. C. Miller, who has extensively advertised a decapper promised one of his machines to the Experiment Station early in the season, but so far the correspondence has ended in promises. The other inventors in the United States were corresponded with but were too busy to make machines for use in Canada at present.

Capping Melter.—Two machines were tested. One made by Mr. Behune, of Australia, and the other by the A. I. Root Co. The former consists of square tin steam pipes placed horizontally with their corners together, one-eighth inch apart on which the cappings are placed. When melted the liquid is expected to pass down through these one-eighth inch spaces into separating pen which is kept warm. The other machine is built on the double boiler principle with outlet through coarse and fine wire cloth strainer for the wax and honey to run off as fast as liquified. The rendering of wax and honey from cappings is a difficult matter.

The problem is to separate them in a practical way without injuring either. The only known method is to apply heat until both are sufficiently melted to separate by gravity.

The simplest device for this purpose is the solar wax extractor. It separates the wax and honey most successfully, but it injures both the color and flavor of the honey. It is also rather slow on account of the uncertainty of sunshine, and requires attention at a time when other apicultural work presses the heaviest. Another method which has not the latter objection is to drain the cappings well and pack away in barrels till winter then wash out the honey with water and melt down the wax into a cake. The objection to this is that the honey either is lost or must be made into vinegar. The later is a line by itself into which most apiarists do not care to go.

It is most desirable to save both honey and wax in their commercial form uninjured. Honey is injured by heat in proportion to the number of degrees of temperature and the length of time heat is applied. Hence the question is to devise mechanical means for getting the liquified mixture away into the separating pan as quickly as possible. The obstacle in the way of accomplishing this easily is the refuse matter always contained in the cappings. If all would melt it would be comparatively easy to draw off the liquid as fast as it forms. The Behune melter for example would answer the purpose nicely, but as it is, the spaces between the steam pipes soon clog with refuse which tends to hold back the liquid until the honey is injured. The same difficulty is found with the Root melter. The strainer soon clogs. Another great trouble with the later is the comparatively small melting surface and the very small outlet. The great mass of cappings does not touch the heat, and the liquid that forms is held back from the outlet by what is yet unmelted. Further the outlet is into cold air which can come in and cool the whole strainer.

For melting cappings in bulk the Root capping melter is perhaps the best that has been brought before the public as yet. Still it will be greatly improved when these objections can be overcome. To use it according to instructions as an uncapping can with a heated oil stove in the extracting room is not pleasant in hot weather. In fact many would not use it for this reason except on real cool weather. In fact many would not use it for this reason except on real cool days. This work will be continued with the hope of discovering some practical method of sep-

arating the honey and wax without injury to either.

Returns from the Apiary.—The 25 colonies with which the season opened were increased to 36. The honey crop amounted to 1,750 pounds of extracted honey, all of which, except about 100 pounds, is white clover and Alsike. About 200 new combs were built on wired foundation.

Expenditure.—About $780, have been spent for bees and equipment at the Experimental Apiary.

Races of Bees.—The Inspector on his rounds is asked every day where good queens can be secured. The Inspector is not supposed to be an advertising medium, yet he should be able to give expert advice in all such things. The Provincial Apiarist has received queens from two different Canadian queen breeders and introduced them to nuclei. In another year he will be able to report on their merits.

Problems to Be Worked Out.—The greatest problem which confronts the practical bee-keeper are wintering, spring management and swarm control. Another question which has been taking a prominent place in the Bee Journal during the past season is one which is worthy of consideration and that is: "What conditions affect the working of colonies of normal strength."

Some of the conditions are:

1. The race of bees.
2. The strain of bees.
3. Numerical strength of colony.
4. The age of working bees.
5. The age of the queen. (By age of queen we mean the amount of egg laying she has done).
6. Nervous condition of bees.
7. Honey bearing flora of the neighborhood.
8. Weather conditions.

There are many others which only patient observation and experiment will discover.

These lines of work will be taken up as rapidly as time and equipment will permit.

The Library.—The nucleus has been formed of a library of bee literature with all the standard works on the subject and complete files of all the magazines published in the English language. These are in process of collection, and the leading articles are being indexed. Besides the magazines published in English, a number of standard French magazines are being received. As some of these files are incomplete in back numbers, contributions by members of this association or others would be greatly appreciated. It is proposed to continue the work of collecting and indexing until the Provincial Library of Apiculture is made most complete.

Status of Bee-keeping.—A great deal of assistance can be rendered the bee-keepers of the Province if their names and addresses are known at the Department. The Provincial Apiarist is making it a part of his work to compile a card index of all the bee-keepers of the Province with the name of their postoffice, township and county with the number of colonies of bees kept and any other information of value. These cards are in duplicate. One set indexed according to the names of bee-keepers and the other according to counties and townships.

There is a movement on foot in the Department of Agriculture to transfer the experimental apiary to The Ontario Agricultural College, Guelph, leaving a commercial apiary at the Horticultural Experiment Station, Jordan Harbour, centralizing the provincial work in apiculture where the other agricultural work is centralized and where the students are.

Work at Ontario Agricultural College—It is one of the duties of the Provincial Apiarist to deliver a course of lectures in apiculture to the students of the O. A. C. At present this is confined to two lectures per week to the first year class during the fall term. This class is composed of men of all nationalities and degrees of

educational training up to college and university graduates. Most of them know nothing of bees. The majority do not expect to engage in bee-keeping. Yet no agricultural education is complete without some knowledge of the habits and management of these useful insects. As this is the only work in the subject the students get in their whole course it is necessary to decide carefully what phase of the subject which can be presented in a short lecture course will be of most value to them. The following plan was decided on:

First the attention of the class was secured by showing the practical value of the subject in hand. Bee-keeping is one of the most pleasant, healthful and profitable of all lines of agriculture. Pleasant because of the mysteries and problems of the teaming insect population of the hive with their varied interests and ambitions, because duties connected with it are mostly out of doors in pleasant weather, and indoors when the weather is bad; because it is mostly clean light work. It is healthful for the same reasons and because the product is the purest and most wholesome of sweets. The greatest value of bees is without doubt the ferailization of fruit and seed blossoms. Also the apiarist with the expenditure of some labor and considerable experience receives for his cash investment, dividends of from 50 to 75 per cent. On the other hand, a large percentage of those engaged in bee-keeping fail for lack of experience and good management. This can be overcome only by thorough education and training in the subject. These young men who have given their labor in the apiaries of successful bee-keepers, sometimes even paying their own board, have found it most profitable to them in after years, when managing their own apiaries as some of the members of this association can testify. It is now fully time that an opportunity for such instruction and experience should be given the students of the O. A. C. A four year course in apiculture with the right man in charge and fully equipped apiaries, laboratory, class room, winter repositories, etc., etc., would put men in the way of becoming successful apiarists, assistants, and foremen in apiaries, inspectors of apiaries, queen breeders, instructors, experimentalists and experts in all lines of apiculture.

After showing some of the advantages, the attention of the class was called to some of the difficulties of practical apiculture. In beginning any study one must first of all see that it IS a study.

(a) See that it has problems.

(b) See clearly what the problems are.

(c) Learn what has been done by others towards solving them.

(d) Test the conclusions of others by experiment and experience.

(e) Draw original conclusions and build whatever solid foundation has been laid by those who have gone before.

To direct attention to the leading problems of the business, an imaginary visit was paid to an apiary in early spring and the varied conditions of the colonies was used to illustrate the difficulty of wintering bees with uniform success. This showed the class that the wintering problem is a very real one. Then the changing seasons were brought into rapid review and each shown to have its special difficulties in management. The most important ones were mentioned, and the remaining lectures are being devoted to a discussion of these, and some of the established rules of management in each case. Owing to the total lack of apiary and equipment at the College no practical or research work can be attempted by the students this term. It is expected, however, that this handicap will be removed before another college year opens.

Before the lectures could proceed it was found necessary for the class to gain a working vocabulary, with definitions of the more common terms, such as, colony or stock, apiary, hive, swarm, queen, worker, drone, larvae, etc., etc., also

names of the parts of the hive and other things about the apiary.

To obtain any intelligent idea of the subject the underlying principles of bee-nature must be mastered. Bees are not demesticated in the same sense as the cow or horse. Through all the centuries that men have profited by their labors they have retained their wild nature quite unchanged. The insects that occupied the carcass of Samson's lion would have filled fancy, tall, no-bee-way sections worth $2.50 per dozen if given the opportunity. Bees are simply wild insects kept in willing captivity by supplying them with the conditions under which they will thrive and produce honey. It is the purpose of these lectures to give the students some idea of what these conditions are and how to provide them.

In the time allotted to this work it is only possible to give the barest outline of facts with which every beekeeper must be acquainted. The text book which seems best suited to the purposes, "Langstroth on the Honey Bee, Revised by Dadant." The students were advised to get copies of this work, and two copies of the latest edition were placed in the college library. Most of the students have their own copies now and the lessons are based on selected paragraphs with marginal notes by the lecturer, where his experience differs from that of the author. The subjects taken up are the general physiology of the bee, including external organs, and the respiratory, digestive and re-productive systems; the life history of the bee and something of the economy of the hive; honey and pollen gathering, and the ventilation of the hive; the requisites of a complete hive, handling bees, swarming and its prevention; queen rearing, feeding, wintering and spring management; pasturage and overstocking; honey production and marketing, and the diseases of bees.

Most of the students show a live interest and ask a great many questions, when given the opportunity. Some have asked for practical work, and expressed a desire to specialize in the subject

As bee-keeping is one of the most profitable lines of agriculture, it is hoped that in a few years it will take its place at the Ontario Agricultural College alongside of poultry, horticulture and other important departments. We trust the bee-keepers of the province will co-operate in every way possible in this work.

O. B. K. A. FINANCIAL REPORT.

Receipts.

Cash on hand, Jan. 1st, 1909....	$ 9 24
Membership fees	198 90
Legislative Grant	425 00
Affiliated Societies dues	55 00
Balance due treasurer	64 26
	$752 40

Expenditure.

Grants to other societies, fairs, etc	249 98
Expenses for convention or regular meetings	43 50
Officers salaries	25 00
Directors' fees and expenses	50 80
Postage and stationery	14 57
Printing	42 25
Advertising	24 00
Periodicals for members	184 35
Cost of reporting	75 00
Services at Honey Show	9 00
Affiliation Fee, Fruit, Flower and Honey Show	5 00
Railway Expenses of committee	28 95
	$752 40

MARTIN EMIGH,
Treasurer.

The Toronto News has attained a first position among Canadian daily newsapers, through its extensive news service, interesting cartoons and sane editorial comment.

The Canadian Bee Journal has succeeded in closing a clubbing arrangement with The News, under which the two papers may be procured by subscribers for one year for $2.20.

ILL EFFECTS OF BEE STING.

(By Dr. Burton N. Gates)

Dr. Zander—Münchener Bienen-Zeitung, Vol. 31, Pt. 10, October, 1909. Page 232:

A short time ago, an experienced gardener brought to me, within a few days, more than half a dozen young ducks, which, having been stung on the bill by bees, died not five minutes afterward. Examination showed in each case, a bee's stinger plunged into the duck's bill. In spite of this fact, I was not satisfied that the stings were the cause of the death of the animals, so I requested the surprised gardener to fetch me a marketable duck upon which I could study in the laboratory the effects of a bee sting. The results were surprising Immediately after the sting was implanted, the duck, as if paralyzed began to breath heavily and laboriously. Within ten minutes it was no longer able to stand up, but lay stretched out on it s side. Four hours later it was dead. These animals consequently are frequently very sensitive to bee stings and caution is necessary.—Nov. 10, 1909. —Translated by Dr. Burton N. Gates.

China Values Honey As Food.

The old Chinese statesman, Wu-Ting-Fan recommended the following for a long, healthful life: (1) Desist from breakfast and satisfy yourself with the two chief meals; (2) Eat little meat, but on the other hand, rice, white bread, vegetables and fruits; (3) avoid coffee, tea, cocoa, keen spices and alcoholic drinks; (4) Never eat highly seasoned foods; (5) Carefully chew all morsels before swallowing them; (6) Do not drink with the meals, but an hour later; (7) Accustom yourself to breath deeply; (8) Fail not to take moderate exercise; (9) **Each day consume a cup of honey.**—From the Australian Bee Bulletin in Rheinische Bienenzeitung, Vol. 60, No. 10, October 1909, Page 197.—Translated by Dr. Burton N. Gates.

LAY WORKERS.

(Thomas S. Gill).

This season just closed I discovered a small colony with fertile workers. In looking over the combs to see if the young queen had commenced to lay, I found eggs in abundance, some cells with two or three and some laid on top of the bee bread. The queen had been lost in her mating flight. I had plenty of queens to spare, so thought I would try to introduce another. I gave them eggs and brood; they formed queen cells but later abandoned them. I gave them virgins at different times daubed in honey —these they treated kindly for several hours, but in the morning they were on the alighting board, dead. Next I tried a young laying queen between two combs of her bees. On investigating a few hours after, found she was balled. In releasing her I saw another queen in trouble. After disposing of the first I went back to save the second one. In doing so she flew and disappeared too quickly for me to follow and locate her. Next day I found her in an adjoining hive at home. She had missed her way home after her mating flight. When about to admit defeat I remembered reading an article in the Journal that the best way to treat a lay worker colony was to take the hive outside the yard and scatter the bees to the winds. My colony contained a lot of young bees that might not find their way back so I tried this plan. Just before the evening I smoked and drummed them to induce them to fill themselves with honey, moved the hive from its stand some distance, took one comb at a time and shook the bees off on the ground about four or five feet in front of strong queen-right colonies, A few bees returned to the old stand but soon disappeared into other hives close by. Those on the ground commenced a procession into the nearest hives leaving a few in bunches about the size of walnuts clustered on the ground. I tried to persuade these to go in, but they

refused, concluding they were the lay workers with some faithful attendants, I poured water into the combs containing eggs and unsealed brood and gave them to other colonies to clean out.

The experiment was a complete success. All the bees of any value, no doubt, found employment to their liking in their new homes. The hatching of the worthless drones stopped.. The lay workers had received proper treatment when they tried to cause trouble.

In November issue of Gleanings, Page 674, by E. J. Hurlebough: "The plan is to form a nucleus and place under the lay worker colony on the old stand, with a wire cloth screen between. A bee escape in top hive or super. The bees that come out cannot return, so find entrance below."

This plan seems all right, but I imagine a lot of the young bees will remain in the top part, hatching and nursing a lot of worthless drones, wearing their lives away.

Cranbrook, B. C.

BREEZY NOTE FROM MANITOULIN.

Having seen Mr. More's leeter in the October number of the C. B. J., it prompted me to write a few lines. Mr. More might have told us how the honey crop was with him at Little Current this year. It is the yield of honey that interests me most, especially as we have a good local market for honey in Manitoulin, and our customers tell us that our honey is the very best, even much better than the honey brought in from old Ontario. Of course there may be something in the loyalty of the Manitoulins to the island brand. I have had a very successful season this year. From 35 colonies spring count I harvested 5,645 pounds of honey or an average of about 161 pounds per colony. Now I hope that Comrade Moore has beaten that, but if he is not located in a raspberry locality I don't think it possible for him to do so this year; about 60 per cent. of our honey is raspberry.

The bees worked in it up to the 8th of August, when all at once it stopped. A week later I took supers off, and the bees were just as nice to handle as they were in the middle of the honey flow. I have not always found them so. I am almost a beginner. I commenced with two colonies about seven years ago, and one of them was queenless, and I did not know it until the middle of June.

I read an article in one of the recent numbers of the C. B. J. on testing honey to tell if it was pure, and I must have mislayed it. It also stated where to send samples for final test. Would like to see it in the next issue of your more than up-to-date C. B. J.

WM. ROBINSON.

Poplar, Manitoulin, Ont.

ADDRESS AND PRESENTATION TO WILLIAM McEVOY.

Dear Friend McEvoy:

The bee-keepers of the Province of Ontario, and the Members of this Association in particular, who feel themselves under great obligation to you for the magnificent services rendered through your discovery of a simple and effective remedy for the cure of foul brood, desire to take this opportunity of expressing their appreciation of your inestimable services, and as a token of regard, beg you to accept the accompanying purse. We consider it but a small return for what your skill and inventive genius have done for us.

To give an approximate estimate of the benefits resulting to bee-keeping in this particular would be quite impossible, as it will continue to be a benefit so long as time and circumstances endure. You have made the name of Canada famous throughout the world by your Apicultural triumph. This is the first opportunity we have had of meeting you since your retirement from inspectoral work, and can-

not allow it to pass without going on record in testimony of the great service you have rendered us and the bee-keeping fraternity throughout the world.

We beg to impress upon you that we are not unmindful of the great pecuniary sacrifices you have made in our interests, and take this means to at least express to you our gratification and admiration.

We trust that you may long be spared to continue your work with the bees, taking comfort in the thought that your altruistic motives have been recognized and appreciated, not only by your associates, but by the bee-keeping world at large.

Believe us, yours truly,

Nov. 11, 1909. M. B. HOLMES.

HONEY PRIZE LIST AT FLOWER SHOW.

Best thirty dozen of comb honey in sections, quality, finish, 50 points; artistic display, 50 points: 1st, Grainger & Co., $25.00; 2nd, D. Anguish, $20.00; 3rd, George Laing, $15.00.

Best one dozen of comb honey in sections: 1st, D. Anguish, $4.00; 2nd, Grainger & Co., $3.00; 3rd, George Laing, $2.00.

Best 300 pounds and not more than 500 pounds, of extracted liquid honey to be displayed in glass, artistic display to count 75 points, quality 25 points: 1st, D. Anguish, $25.00; 2nd, George Laing, $20.00; 3rd, Grainger & Co., $15.00.

Best 10 pounds extracted liquid clover honey in glass: 1st, George Laing, $5.00; 2nd, R. G. Houghton, $4.00; 3rd, Grainger & Co., $2.00; 4th, D. Anguish, $1.00.

Best 10 pounds extracted liquid linden honey in glass: 1st, Grainger & Co., $5.00; 2nd, George Laing, $4.00; 3rd, D. Anguish, $2.00.

Best 50 pounds of extracted granulated honey in glass, quality 50 points, artistic display, 50 points: 1st, D. Anguish, $6.00; 2nd, George Laing, $4.00; 3rd, Grainger & Co., $3.00.

Best and most artistic display of 200 pounds comb and extracted honey, suitable for grocer's window or counter (comb to be in sections, extracted in glass: 1st and 2nd, $20.00 and $15.00, divided between D. Anguish and George Laing; 3rd, Grainger & Co., $10.00.

Best display 100 pounds liquid extracted buckwheat honey in glass; quality 50 points, artistic display 50 points: 1st, Grainger & Co., $10.00; 2nd, George Laing, $8.00.

Best one dozen of buckwheat honey in sections: 1st, Grainger & Co., $4.00; 2nd, George Laing, $3.00.

Best 25 pounds of beeswax, artistically displayed: 1st, D. Anguish, $7.00; 2nd, George Laing, $5.00.

Best display of bees and queen, which may be seen by visitors: 1st, George Laing, $5.00; 2nd Grainger & Co., $4.00.

AN IMPORTANT ADDRESS BY SIR WILFRID LAURIER.

Sir Wilfrid Laurier's recent speech on "The Constitution of Great Britain and the United States—a Comparison," given before the Woman's Canadian Club of Montreal, was an important one, and one which teachers and leaders of debating societies will find exceedingly valuable for readings and for discussion.

That it was an instructive address goes without saying, for matters of constitutional history form one of the favorite studies of the Premier. He was enthusiastically applauded when he declared that the British constitution was the pride of all British subjects. He showed how all other countries in search for liberty had to adopt the principles of that constitution in whole or in part, and remarked that the most illustrious example of all was that of the American Colonies, which, when they had wreched themselves from the Motherland, had paid her the compliment of adopting her constitution as far as the new conditions permitted. He showed why, in his opinion, the British Constitution was more elastic and more responsive to the public needs than the American Constitution.

Through the courtesy of Sir Wilfrid Laurier the full text of this address has been published in "World Wide" of November 6th, copies of which may be obtained at special rates from the publishers, John Dougall & Son, Montreal, Que.

NOVEMBER CROP BULLETIN.

The following statement concerning crop conditions during the first week of November, 1909, based on the returns of nearly one thousand correspondents, has been prepared by the Ontario Department of Agriculture.

Fall Wheat—While a few correspondents claim that the grain did not turn out as well as was expected from the start, the great majority of those reporting regard fall wheat as an extra good crop, the yield being large and the grain in most cases well up to or above the average. The straw, like that of all the cereals this season was short, but bright.

Spring Wheat—Each year farmers have less to say about spring wheat. The crop is described as from fair to good in both yield and quality.

Barley—The yield of barley was variable, and, taking the province over, will be a little below the average yield. The weight of the grain also ranges from light to plump, but the color is all that could be desired.

Oats—This crop may be described as being in most cases rather light in yield per acre and also light in weight per measured bushel, although a few correspondents send more favorable reports. The midsummer drouth was given as the cause of the shrinkage. Slight mention was made of rust and smut. Oats have a larger area than all the other grain crops put together.

Rye—This crop is raised in only small quantities in this province, and chiefly for green feed. Where grown it did well.

Peas—Opinions are much divided as to peas, reports concerning the crop running from "poor' to "very good." The weevil is still in evidence, more especially in the western counties, but not to such an extent as has been complained of in the last two or three years.

Mixed Grains—The growing of mixed grains appears to be gaining in favor, although some correspondents object to it. The favorite combination is late barley and early oats; then come peas and oats; and barley, oats and peas. Oats, peas and wheat, and barley, peas and wheat also figure as mixtures. Buckwheat and flax are added to some of the grains already mentioned. Several correspondents assert that by the growing of mixed grains a larger yield is taken off the ground than if the crops were grown singly. It is also claimed that peas mixed with oats or barley favorably shade the roots of the cereals, and also that the peas in the combination can be cut with the binder.

The New Fall Wheat.—The high prices which have been prevailing for wheat have resulted in a considerably enlarged area of the grain being sown this fall. The ground was rather dry and lumpy at seeding, especially on stubble land, with the weather rather cool, and as a consequence the catch was a litle slower than usual. The result is that the young plants are rather shorter on top than in most seasons at this time, but are otherwise vigorous and of good color, and most fields will enter the winter with good prospects. Sowing ranged from the last week of August to the end of September, but most of the crop was got in about the second week of the last named month. Only a few references to the Hessian fly were made by correspondents this year; white grubs and wire worms are the chief insects complained of. Dawson's Golden Chaff is still thee favorite variety.

Corn—Notwithstanding the backwardness of the spring and the consequent lateness of planting, has turned out well, especially in the eastern half of the province where it is grown chiefly for the silo. In some of the western counties the crop was slightly nipped by frost, and there are some complaints of softness; but so much well matured corn has been handled that the general report for the province may be classed as favorable.

Tobacco—This crop is only medium in yield, but the leaf is of good quality. Some plants were touched with frost, but most of the crop was well harvested, and is curing nicely.

Beans—From fair to good,both as regards yield and quality, covers the remarks describing beans. The crop suffered chiefly from the drouth in midsummer.

Buckwheat—A greatly increased acreage has been given to buckwheat this year, owing to the wet, cold spring being adverse to the sowing of the more standard grains. Although frost caught some of the late buckwheat, the crop generally is considered to be one of the best for years in both yield and quality. In short this will be remembered as the buckwheat year.

Clover Seed—The summer was too dry for the best results in clover seed, and added to this is the fact that the regular pastures were so closely cropped that in many cases cattle had to be turned in on some of the fields reserved for seed. The general quality of the seed saved ranks high.

Potatoes—Notwithstanding that the crop has suffered from drouth in some quarters, the general trend of returns indicates an unusually big yield of large, smooth, sound-looking potatoes. The best reports concerning the crop come from the St. Lawrence and Ottawa counties. The only mention of rot came from a correspondent in the Rainy River District. One peculiar feature of the season in connection with the potato crop is the manner in which the tubers have been attacked with white grubs, which have been identified by Dr. Bethune, Professor of Entomology at the Ontario Agricultural College, as the larvæ of what are familiarly known as May beetles or June bugs. This year these grubs have not confined their attention to the stalks, but in some instances have also attacked the potatoes, boring into some and rendering them unfit for market.

Turnips—Reports regarding these roots are variable, ranging from fair to good, but the average yield will be well above the ordinary. They were making good growth late in the season, and on that account some had not yet been pulled when correspondents wrote, although the bulk of the crop had been housed. Some reports were made of the louse or aphis, but not so great an extent as in the last two or three years.

Mangel Wurzels—These roots have not done so well as turnips, although some individual reports are favorable. Most of the crop had been put under cover as correspondents wrote.

Carrots—Returns relating to carrots are so meagre that they can hardly be considered as a regular field crop.

Sugar Beets—A fair yield of rather small size beets of good quality, summarizes the reports regarding this crop.

Fruit—Taking all classes of fruit together the year has been a fairly good one. The yield of late fall and winter apples has been up to the average, especially in the cases of Baldwin, Spy and Ben Davis, but earlier and less valuable varieties were rather scarce. There were some complaints of apples being small in size on account of midsummer drouth, and heavy winds in October shook off a lot of the fruit. There were the usual number of reports of wormy fruit, but the tent caterpillar had done less injury than usual to apple trees. On the other hand, apples have been remarkably well colored this season. Other orchard fruits did well, there being a surplus of most kinds, more particularly cherries, plums, apples, grapes, and small fruits The oyster-shell bark-louse is the insect most frequently complained of this season, and next to that the codling moth. It is also said that the vitality of many old apple trees had been affected by the drouth.

Live Stock—Some correspondents, more particularly in the eastern portion of the Province, speak favorably of the condition of fall pastures, but the majority of the

returns tell of rather close cropping. The result is that live stock as a rule are not in flesh, and there has been a steady culling out of poor animals, more especially among dairy cows. Good prices for all classes of live stock have also helped to lessen the number on hand. The general freedom from disease is a cause for satisfaction. Stockers have been scarce and dear, and young cattle are in good demand, but farmers generally are said to be a little slower than usual in starting stall feeding. Sheep raisers have done well this season, as there has been a good demand for lambs. Hogs have been steadily marketed all the season through, and notwithstanding top prices the demand cannot be fully met. Once more the corn crop has proved of great advantage to live stock men; silos are being erected in large numbers, both east and west, some of them being built of concrete.

The Dairy—The season, notwithstanding dry midsummer conditions, has been a good one for the dairy industry. Prices have been fair for cheese and high for butter, the later branch of the industry relatively making most advance this season. The general quality of butter was good, both in the creamery and dairy classes. While the milk flow was checked by the drouth somewhat earlier than usual, most dairymen have become wise by experience, and corn and other supplementary green feed helped to tide many over. The milk yield was beter in the east than in the west, owing to better pastures. Two things are preventing an increase in the number of dairy cows; the lack of suitable labor and the steady

(To be continued)

Want and Exchange Column

Advertisements for this column will be received at the rate of 35 cents for 25 words, each additional word one cent. Payments strictly in advance, as the amounts are too small to permit of bookkeeping. Write copy of ad. on a separate sheet from any other matter, and on one side of the paper only. Say plainly how many times ad. is to be inserted. Matter must reach us not later than the 23rd of each month.

WANTED—To correspond immediately with anyone expecting to have bees for sale next spring. Give number of colonies, name and size of hive, and number of frames and price expected. Address, X, Y, Z, care of Canadian Bee Journal, Brantford, Ontario.

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