

The Canadian Bee Journal

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JULY, 1908

Whole No. 521

We regret to report that Mr. Matthew Gardiner, of Millbrook, owing to age, giving up bee-keeping. We trust that he may long be spared to enjoy a ripe old age in his retirement.

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We beg to acknowledge with thanks the receipt of a very able paper on Bee Diseases in Massachusetts, by Burton N. Gates, expert in apiculture, published by the U. S. Bureau of Entomology—Bulletin No. 75, part III.

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Rubberoid quilts! Have you used them? We have had no experience. Have any of our readers had a similar experience to that of Jacob Haberer? In another column he says the bees were working it up into their comb-building operations. Rubberoid wax! Something new under the sun at last!

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We would urge all our readers to fill and return promptly the enquiry cards sent out by the Department of Agriculture in reference to the honey crop of this year and the approximate amount for sale. This will enable the price committee to get together early and announce prices for the season. All bee-keepers should find it in their interests to do this.

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"A Beginner," in his Notes and Pick-ups, remarks upon the very few reports received in. His criticism is quite in order. There are far too few spring reports sent in. We believe if this practice were increased in to a much greater extent it would have good results. In the last two or five years very heavy winter losses have taken place. We believe that

at least 75 per cent. of these losses were preventable by proper fall management. More spring reports, with a few brief comments, would prove very educative and helpful. We will receive all reports thankfully.

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The Australian Bee Bulletin for May says (page 23) that "seventy per cent. of the Ontario bee-keepers are said to have perished in the past two years." Alas! According to this rate of compulsory retirement, there will be none left to read our bee wisdom in the C.B.J. Our contemporary does not say what they died of. Perhaps some got stung to death and others starved to death, or mayhap got froze to death; perhaps some died from indigestion as a result of eating wax without first melting it with hot air; perhaps others died as a result of the recent elections. We heard such dull thuds in North Brant, South Brant and North Norfolk that it was with great difficulty we survived the shock ourselves.

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Before going to press we have received further information from Mr. P. W. Hodgetts in reference to the appointment of fowl brood inspectors. He says: "The Minister of Agriculture has decided to send Mr. Homer Burk, of Highland Creek, to look over the apiaries in the eastern counties. He has instructions to spend considerable time there during the buckwheat flow, and to visit as many places as possible where apiaries are to be found. Two more inspectors have been appointed for the west. Middlesex and Elgin have been placed under the charge

of Mr. John Newton, of Thamesford, while Huron and Perth have been given to D. Chalmers, Poole. It was felt that as the season was already well advanced, that one man could not properly cover the four counties, and it was therefore decided to divide it in this manner."

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In another column will be seen, printed in French, a report of a meeting of the bee-keepers of the Province of Quebec. A resolution was passed, asking the Minister of Agriculture, Hon. Jules Allard, to appoint foul brood inspectors, and recommended that Arthur Comiré, Onésiphore Fontaine and Michel E. Dufault be named as such. A motion was also passed asking the Minister of Agriculture to publish in French the Ontario College of Agriculture Bulletin No. 112, by Prof. F. C. Harrison, on the treatment of foul brood. There appears also the circular sent out by the society to all the bee-keepers of the Province, pointing out the advantages of becoming members of the association on the payment of the nominal sum of \$1.00 per year. We hope the society will see its way clear to arrange for the C.B.J. being sent to all its members.

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Mr. Deadman, in his letter on Coöperation, remarks that very few, if any, bee-keepers advertise their honey for sale. The advertising appears to be left entirely to those wanting to buy. This is not as it should be. The man who has something to sell should make the fact known, then those who are wanting to buy can address them promptly. Many bee-keepers could dispose of their whole crop quickly and economically, and with a minimum of time and worry, if they got in touch with some one who would take their whole crop. We are pleased to announce, however, that the above charge can no longer be made, as an advertisement appears in this issue from Mr. Angus McLellan, of Mille Roches,

asking for bids on his honey crop. We venture to say he will get many offers. It would pay other bee-keepers to do likewise.

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We have received several letters in praise of Mr. E. F. Robinson's article which appeared last month. Elsewhere in this issue will be found something further from his pen, which will be found of equal value. One correspondent writes as follows: "The writer was greatly interested in that article in this month's issue (June) re 'Fertilization,' particularly that part referring to largest amount of honey gathered in one day by a single colony, and the number of bee-loads necessary to gather eleven pounds two ounces. In connection with this matter I would like to ask one question: Do bees from a certain colony ever visit a particular blossom twice or oftener during the same day? If this is worth answering through your journal, our curiosity will be satisfied." The strong feature of this question is no doubt curiosity—its importance a very minor one. We see no reason, however, why the same blossom may not be visited again and again. We believe they are. A clover blossom is constantly secreting the nectar day after day until its bloom has been spent. A blossom in its full strength ought to yield nectar to the bees several times during one day. Where there are many thousands of bees visiting a clover field, it is but natural to conclude that many blossoms are visited many times not only by the bees of the same colony but by the bees of other colonies. Perhaps Mr. Robinson has some definite data on this point.

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We commend Mr. Byer's remarks to Mr. Geo. Ott. That a man of his age should still retain such a juvenile spirit is a great tribute to the moral and strenuous life which he has lived. There are very few men who would take the

great interest in the bee industry at Ott. He has the C.B.J., and it. Only a few dollars for two bee-keepers in writing him that remarked that hundred more make the C.B. hope he will lose sting of his be

We beg to disad. of Gunn, I real, buyers an firm has a go over thirty-five dealings. Our mistake in doin

Are bees a n This question v Livingston, in t Friday, June 26 against the Bee L Bayless, 46 ately for Mr. thought they w tion oft discuss so often that s have been reac believe Mr. Ba by the Higher against the ruli this connection the plan adopte Association. Th solicitor of son cases of libel th its members. V plan for our On ation to follow! circumstances ca Membership in a however, to be petty prosecution to see to it that

great interest in all that pertains to the bee industry as has been shown by Mr. Ott. He has shown a great interest in the C.B.J., and we feel very grateful for it. Only a few days ago he sent us two dollars for two new subscriptions from bee-keepers in his neighborhood. In writing him thanking him for same, we remarked that if there were a couple of hundred more like him we could soon make the C.B.J. second to none. We hope he will long be spared to enjoy the sting of his bees.

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We beg to direct attention to the page ad. of Gunn, Langlois & Co., of Montreal, buyers and dealers in honey. This firm has a good reputation, extending over thirty-five years, for honest and fair dealings. Our subscribers can make no mistake in doing business with this firm.

* * *

Are bees a nuisance to our neighbors? This question was up before Magistrate Livingston, in the City of Brantford, on Friday, June 26. A complaint was made against the bees of our friend, Mr. Wm. L. Bayless, 46 Grand Street. Unfortunately for Mr. Bayless, the Magistrate thought they were. This is an old question oft discussed. It has been in court so often that something definite should have been reached by this time. We believe Mr. Bayless would be sustained by the Higher Court if he appealed against the ruling of the Magistrate. In this connection we would like to suggest the plan adopted by the Canadian Press Association. The Association employs a solicitor of some repute to defend all cases of libel that may be entered against its members. Would not this be a good plan for our Ontario Bee-keepers' Association to follow? Many men in humble circumstances cannot undertake law suits. Membership in a strong association ought, however, to be a protection against these petty prosecutions. The Association ought to see to it that the humblest and weak-

est of its members will have defence and protection. Magistrates are mostly town or city bred, and have the proverbial horror of a sting from a bee, and generally sympathize with the complainant. It is very seldom that bees will attack a neighbor if they are not molested. Every case of this sort before our police magistrates should be defended. We believe they could be successfully defended.

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Re-Queen! Requeen!! And again Re-Queen!!! This is the admonition given us by Wm. McEvoy, of Woodburn. He says: "During the last three years over eighty per cent of the bees in the Province of Ontario died through poor stores, old queens and unfavorable springs. Young queens and choice stores would have brought nearly every colony through the unfavorable springs. But choice stores cannot bring old queens back to the prime of life and cause them to build up the colonies like young queens do. No class of stock in our Province requires improving as much as the bees of Ontario, and none is so badly neglected." We have not the slightest doubt but friend McEvoy is right. Great losses might be prevented with good young queens. From August to October they would build up strong colonies of young bees, able to withstand the rigors of the winter season. This is more than half the battle.

* * *

It would seem almost incredible that during the year 1908 there have been imported into Canada 621,150 pounds of honey, valued at \$35,405. This, however, is the record, as shown by the Dominion Government's returns. This will give some idea of the possible development of this industry that awaits the bee-keepers of Canada if they will only rise to the occasion. That a magnificent agricultural country like Canada (more especially the Province of Ontario) should import this great quantity of honey, is a

startling rebuke to our farmers and others in allowing this opportunity to pass. The nominal protection we have in the matter of duty, together with the freight charges, ought to be inducement enough for us to at least supply our home market, to say nothing of exporting. Twenty thousand five hundred and ten pounds of the above came from Great Britain, and we have a suspicion that much of it is a trans-shipment of tropical honey. If this be true, it is a distinct violation of our British preference tariff laws, and the matter should be brought to the notice of the Government at once. There was paid for the above quantity from Great Britain \$1,172.00, a trifle over 5.7 cents per pound. We do not believe that British honey can be sold for this price. What have our friends of the British and Irish bee journals to say about this? We will await their comments with much interest. Let our Canadian bee-keepers be up and doing. In another column this matter is dealt with more extensively.

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In "Notes and Pickings From a Beginner" reference is made again to the Norfolk resolution. He seems to hit Mr. Beaupre rather hard, but we presume it is given more in the spirit of jest than earnest. We believe Mr. Beaupre is thoroughly honest in this matter. What we have criticized was the apparent lack of judgment and good taste in attacking another district in the effort to get more inspectorial assistance for themselves. If a request had simply been made for more assistance, we have no doubt our Norfolk friends would have received the help and sympathy of all. So far as the C.B.J. is concerned, we would be very glad to see the Government give them extra help this year. But we unhesitatingly say that it would be wrong to do so at the expense of another district. As will be seen in another column, Mr. Holmes has been dropped. We would be very sorry to think that it has been the result of

this agitation. It is more likely to be the result of Mr. Grosgean's statement that they had "no foul brood east of Northumberland County, with the exception of a few hives, and that was found to have been shipped in from the west." This, we believe, would have considerable weight with the Government. The Norfolk Association held another meeting at Delhi, May 28, a report of which has been sent us. As we expected, the justification of the resolution in question has dwindled down to an attack upon the late Inspector, Mr. McEvoy. And Mr. Holtermann was there, too, and reinforced what was said, by reciting a similar instance, wherein _____, etc. By private letter we have advised our Norfolk friends to bring their case before the O.B.K.A. and the Minister of Agriculture and have the matter disposed of in a judicial manner. The Canadian Bee Journal is published in the interests of the bee-keeping fraternity, to promote its best interests and make for harmony and peace. We cannot allow it to become the medium of quarrelling attacks. If any inspector, being an officer of the Government, fails to do his duty, there is a proper authority before whom to bring the matter. The washing of dirty linen will not be permitted in the C.B.J. We will publish nothing more in reference to this matter. Mr. McEvoy is not now the Inspector for Norfolk, and nothing can be accomplished by attacking him, unless it be to satisfy the spirit of revenge. An attempt was made to raise the same issue in our Brant County convention, but we gave it its quietus quickly.

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The July number of the Books News Monthly is a beautiful and valuable production. Its most interesting feature, however, is its review of the life and literary work of Mrs. Humphry Ward, the greatest living novelist of her sex. The illustrations are beautiful, and the whole number is well worth perusing.

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That lengthy in June C.B. and pleasure the author be of interest, an many of us that age and interesting let advice is good—a lot of it re matter what While I agree much smoking them, yet I th too strong who smoked when they will fill "will not leave day."

To-day I had and with Mr. opened up a probably a d closely to see i ence in their ing in rapidly, could be seen quent disturba Mr. Adrian G colony to expe quent disturba honey gatherin through the h opened up, as Getaz's apiary tion was alwa purposes. In s the stock store other in the cases cited are and, like the a of a man livin and had used ed: "Hard to would have liv So we might

Notes and Comments

(By J. L. Byer)

That lengthy letter of Mr. Geo. Ott's, in June C.B.J., was read with interest and pleasure by the writer. The fact of the author being 81 years old is in itself of interest, and I was led to wonder how many of us bee-keepers would live till that age and be able to write such an interesting letter. Taken altogether, his advice is good to prospective bee-keepers—a lot of it real good for young men, no matter what their prospective calling. While I agree with Mr. Ott that too much smoking of bees is harmful to them, yet I think he is making it a little too strong when he says that if bees are smoked when there is a flow of honey on they will fill their sacs with honey and "will not leave for the fields for a whole day."

To-day I have been at the home yard, and with Mr. Ott's caution in mind, I opened up a strong, "gingery" colony probably a dozen times, and watched closely to see if I could notice any difference in their actions. Honey was coming in rapidly, and not a bit of difference could be seen as the result of the frequent disturbances. Some few years ago Mr. Adrian Getaz, Tennessee, kept one colony to experiment with to see if frequent disturbances would cause any less honey gathering. Nearly every day, all through the honey flow, this colony was opened up, as many visitors came to Mr. Getaz's apiary, and the colony in question was always used for demonstrative purposes. In spite of these disturbances, the stock stored as much honey as any other in the apiary. Of course, these cases cited are not positively conclusive, and, like the anti-tobacco user, when told of a man living till over 100 years old and had used the weed 90 years, retorted: "Hard to say how much longer he would have lived if he hadn't used it." So we might wonder how much more

this colony would have stored if it had not been disturbed. However, this is not written in favor of useless disturbances of the bees, as such a practice is unwise from different points of view.

Some stories are better never finished. This will apply to my experiment in putting a very weak stock over top of a very strong one. On my next visit after the one mentioned in May C.B.J. to the apiary where the colonies were doubled, I found the queen in upper storey had disappeared, so that report needs to be reversed and read 100% lost. As the queen was young and vigorous, can give no reason for her demise; perhaps my first examination may have caused the bees to ball her, but I hardly think that the case. While the system works all right for some, for what few very weak stocks that I ever have I prefer my old method of saving the stock. Find the queen of a strong colony and set aside, then carry frames of adhering bees and shake in front of weak stock; the old bees fly back and the young bees crawl into entrance of the weak colony. This plan is perfectly safe, and is **always** sure, and the **help** the weak stock receives is of the very best. No added brood to chill, but more bees to look after brood, and in my experience during the early spring a weak stock with a **good** queen nearly always has more brood than they can properly care for.

It is nothing so very unusual to find two queens in a hive when the old queen is, being superseded, yet a case in the Altona apiary this spring was so unique that I feel prompted to tell of it. During fruit bloom the queen of a strong colony was noticed to be failing, and the hive was marked to that effect, as in such cases swarming is very apt to take place early in the honey flow. Just when clover was starting to yield the colony was examined, and a single queen-cell

was found, the same nearly ready to hatch. A few days ago I again examined the stock, and on lifting out a frame covered with bees, a large circle of newly-laid eggs was noticed, and I at once knew the young queen was laying. As I was about to lower the comb into the hive the old clipped queen came from the opposite side of the frame, and immediately afterward along came the young queen. The two travelled around the comb never more than two inches apart and often touching one another. Not the slightest animosity was shown; in fact, where one went the other seemed to follow, as though there was some mutual attachment. After watching them for some time I reluctantly removed the old queen, as I was afraid her presence might cause them to swarm. At other times when I have noticed the old queen present, when a young queen had been reared to take her place, the former has always been in a secluded spot in the hive. In the case mentioned, the old queen seemed as vigorous as ever, and if the colony had been at home yard, would have liked to have seen how long she would have remained.

Prospects here in our locality (July 2) are for a rather light crop of clover honey. Hot, dry weather previous to clover bloom brought on the flow with a rush about June 17th. For first week flow was rapid; since then the nectar is only secreted in afternoons. By the looks of things now, one week more will finish the alsike, unless we should get rain, as the ground is hard and dry. Practically no swarming as yet; only three or four all told. However, as I write this evening my brother-in-law has just 'phoned me saying that at the Cashel yard there were two swarms out to-day, so perhaps next week may make us hustle.

Try a small ad. in the Want and Exchange column. They bring results.

THE HONEY BEE

Its Early History, Natural History and Place in the Economy of Nature

(By Mr. E. F. Robinson, Victoria)

It is with some diffidence I attempt the task of interesting you in this wonderful insect, so I ask a little forbearance on your part if I fail to fulfil my object as I would desire. To-night I propose to essay the wonders of that small and, to many persons, insignificant insect—the "honey bee," and presume to place it far above any other insect in its wonderful domestic economy and usefulness to man.

The value of most insects is doubtful, but with the bee the results of its works and usefulness continue on for many centuries. Man at the present day is reaping the benefits of its labors made many years ago—in the beautiful flowers and luscious fruits which he now so delights in, and which are so very essential to his health of body and gratifying to his sense of the beautiful. The remark may be ventured that no insect has rendered so valuable a service to man as the bee, and next in order, I suppose, is the earth worm; but the worm, with its drainage and pulverizing of the soil, can be imitated quite effectually by man with his improved implements, whereas, with the bee, it is quite impossible to carry out the important process of fertilization and the production of new varieties in the vegetable kingdom, to the immense extent, and at the exact time, as is so effectually and at such a minimum cost done by this truly wonderful insect.

The bee is a native of the Holy Land, and we find the Assyrian bee referred to in Scriptures over 3,700 years ago. The Orientals call it "Deborah"—meaning song, singing, or "she that speaketh." "Bee" is mentioned in the Old Testament four times, but "honey" is there mentioned 52 times, and in the New Testament four times. "Honey-comb" has

eight references and one in the is mentioned for ment. Is there with such beauty either to itself the following:

We read of Solomon of Man to eat good, at the same not to eat too

We find Jacob best fruits of Joseph.

Samson regaled of the lion's car he gave his family his domestic helper eater came forth sweet

We find it Christ Himself honey, "that is good."

These passages value and significance was held by the earth, and the bee in connection of various honey-gathering, of view, is only tion.

Honey ranks in Egyptians with spices, myrrh, et indicating a beautiful flowing with man really is so—ever accompanying mi produce grass and long way deficient climate necessary honey; it indicates and that fruitful necessary for the production, it has referred to as some earthly produce

History and Nature

(Victoria)

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is doubtful, of its works r many ceu- y is reaping many years and luscious ghts in, and o his health his sense of may be ven-ered so valu- he bee, and is the earth its drainage can be imi- an with his as, with the to carry out ilization and eties in the immense ex- ne, as is so inimum cost il insect.

Holy Land, e referred to rs ago. The h"—meaning it speaketh." e Old Testa- ey" is there the New Tes- y-comb" has

eight references in the Old Testament, and one in the New Testament. "Wax" is mentioned four times in the Old Testament. Is there another insect, I may ask, with such beautiful similars of reference, either to itself or product, as we find in the following:

We read of Solomon advising the "Son of Man to eat honey," because it was good, at the same time cautioning him not to eat too much.

We find Jacob sending honey with the best fruits of the land as a present to Joseph.

Samson regaled himself with honey out of the lion's carcass, from which incident he gave his famous riddle, which ruined his domestic happiness: "Out of the eater came forth meat; out of the strong came forth sweetness."

We find it was promised that the Christ Himself was to eat butter and honey, "that He might know evil from good."

These passages are quoted to show the value and significance in which honey was held by the early inhabitants of this earth, and the great importance of the bee in connection with the early formation of various vegetable products, for honey-gathering, from a naturalist's point of view, is only a secondary consideration.

Honey ranks in the estimation of the Egyptians with their choicest fruits, spices, myrrh, etc. It is referred to as indicating a beautiful, fruitful country—"flowing with milk and honey"—and it really is so—even in preference to the accompanying milk, for a country may produce grass and milk while being a long way deficient in that serenity of climate necessary to produce flowers and honey; it indicates warmth and moisture, and that fruitfulness not absolutely necessary for the production of milk. Consequently, it has in Scriptures been referred to as something above the average of earthly production.

All the Oriental countries have their native species of this insect, showing that the bee was associated with man in the early settlement of the world, and indicates, I think, that it was designed to fulfil some important work in the vegetating of this earth.

We also find that it follows man in the march of civilization—first in Asia, then in Europe, and lastly in America and Australia.

We have the Egyptian, Assyrian, Tunisian and the Cyprian bees, and as we march northward we have the Italians and Carniolians, and the Brown bee of Germany. The earliest bee-keepers, or people to domesticate the bee, were the Egyptians, who kept the bees in earthenware jars and cylinders, in a most primitive way. They are also kept in hives of bark, just as it is stripped from the tree, formed into cylinders, and placed on the ground in a horizontal position; the ends are stopped up with clay and cow-dung, with a hole for the bees to enter at one end. When the owner wants any honey, he knocks out one end of the cylinder and makes a dense smoke by burning dried cow-dung, letting the smoke drift into the hive, which subdues the bees; the honey is then taken from half the hive, the hole plugged up again and the hive turned round. The bees then start to build up again, and by this method half of the comb is renewed each year, keeping them whiter and of more marketable condition, the same as the native Cubans do to this day. The Egyptian authorities collect a tax of from seven to thirty cents per hive, according to size.

The second part of my paper will embrace the natural history of the subject:

Belonging to the order "Hymenoptera" or membranous-winged insect family, "Apheda," with several types of genera, the genus *Apis Mellifica*, or hive bee, is the one under consideration.

When the earliest white settlers reached the shores of America no honey bees were found, it not being a native of this continent.

Just when, and by whom, the first colony of black or German bees were brought to America, it is difficult to say. Some authorities say about the seventeenth century. These black bees were formerly kept in America in cylinders of bark, with a board on top, and in England in the old straw skip so typical of early English bee-keeping. It was not until 1850 that the Rev. Mr. Langstroth, of Butler County, Ohio, U.S.A., invented the movable-frame hive which has so revolutionized apiculture. Previous to this date the bees built their combs just as their natural instinct prompted them—about one inch apart from centre to centre, and attaching them to all parts of the receptacle in which the bees were placed. The next advance was the placing of slats in the top of the extemporized hive, to which the bees built their comb; but with the invention of the movable frame, in which the bees could build their comb and allow of its being moved from the hive and examined, came the great incentive to study the natural history of this wonderful insect, and turn its labors to valuable account, bringing apiculture up to its present high position as a science and commercial importance.

It was not until 1859 that the Italian bee was imported to this continent from Europe, and which has now entirely superseded the black or German bee, which by the escaped swarms and natural increase has become the wild bee of America. The Italians are far superior to the black, and when first introduced were highly valued, as much as \$20 being paid for a laying queen; now quite as good can be bought for \$1, but she will be raised in America from imported mothers.

You will notice that it is just forty years since the introduction of the Italian, and the honey harvested at that time

was small indeed. Now it has grown to immense proportions, and I shall quote you a few figures from the report of the United States Department of Agriculture:

Apiarian societies in United States	110
Apiarian journals	8
Steam factories for the manufacture of hives, etc.	15
Number of pounds of honey produced in 1869	14,702,815
Number of pounds of honey produced in 1889	63,894,186
Persons engaged in bee culture	300,000
Honey and wax value (wholesale)	\$7,000,000
Germany—	
Number of colonies of bees...	1,910,000
Number of pounds of honey produced annually	14,800,000
Spain—	
Number of colonies of bees...	1,030,000
Number of pounds of honey produced annually	22,500,000
France—	
Number of colonies of bees...	950,000
Number of pounds of honey produced annually	20,500,000
Average per colony	
Germany	7½ lbs
Spain	21 lbs
France	21½ lbs

I will now commence with the inmates of the hive and trace them from the egg to matured insects.

A colony of bees is normally composed of a queen, from ten to forty thousand workers, and, in the swarming season, from a few to many hundred drones; and sometimes under abnormal conditions a fourth party is tolerated, known as a fertile worker. The queen is the only perfectly developed female in the hive, and lays all the eggs which produce the workers or undeveloped females, the drones or males, and the queens which are to supersede her. In this insect we

(Continued on Page 269)

I wish the C. sible. It certain since passing i value for mone now. Sentimen in these days of no reason, while give as good, ahead of requir doing of late, w broad Canada of ally, reduce the erican journals, As regards bee think it must n country (B.C.) i ing lands patchy ered with bush. no native trees lasswood of Ont letting contracts of land on this will follow here, places; but just a few favored place profitable. No d accomplished whe for the would-be erland, Russia, British Bee-keeper county asociation respective countri spoken to our De culture on the sub Victoria seek aid with the bees frc nothing has been information been g has been given should see more h country. I shall be makin ive exhibit at ou sible. I had into

THE PANCREAS MAY DIGEST WAX

A Chatty Letter From Mr. Robinson, Victoria, B.C.

I wish the C.B.J. all the success possible. It certainly has improved much since passing into your hands. It is value for money that people are after now. Sentiment is out of the question in these days of strenuous effort. I see no reason, while the C.B.J. continues to give as good, sound teaching, rather ahead of requirements, as it has been doing of late, why it should not hold this broad Canada of ours to itself, and gradually, reduce the subscription to the American journals, good as they may be.

As regards bee-keeping in the West, I think it must necessarily be slow. Our country (B.C.) is young, our good farming lands patchy and in many places covered with bush. On the coast we have no native trees yielding nectar, as the basswood of Ontario, but the C.P.R. is letting contracts for clearing large tracts of land on this island, and bee-keeping will follow here, as it has done in other places; but just at present it is only in a few favored places where it can be made profitable. No doubt much more can be accomplished when our Government does for the would-be bee-keeper what Switzerland, Russia, New Zealand and the British Bee-keepers' Association (with its county associations) are doing for their respective countries. I have before now spoken to our Deputy Minister of Agriculture on the subject, as so many around Victoria seek aid out of their troubles with the bees from myself; but so far nothing has been done. Had as much information been given on bee-keeping as has been given on fruit culture, we should see more hives scattered over the country.

I shall be making a rather comprehensive exhibit at our Fair this fall if possible. I had intended to make a de-

monstration of live bees if I can find the time to attend. We are to have a new exhibition building, and it will be incumbent upon us all to make a good show under the circumstances.

Now as regards the food qualities of wax as eaten with comb honey. The question of digestion is very complex. I had always assumed that wax would be indigestible, but friend Hutchinson's remarks set me thinking, well knowing that wax was a hydro-carbon, like honey, fat, starch, etc., its composition being 80.20 carbon, 13.14 hydrogen and 6.36 oxygen; nearly as heavy as water, being .960 to .965, and melts from 145° to 150° Fah.

Not knowing the exact function of digestion regarding hydro-carbons, I turned to an excellent work I have on Food, it being four lectures delivered before the Society for the Encouragement of Arts, Manufactures and Commerce, by H. Letheby, M.B., M.A., Ph.D., Professor of Chemistry in the College of the London Hospital and Medical Officer of Health and Food Analyst for the City of London—quite an authority on such matters. There I find neither heat, the gastric or the salivary secretions necessary to disintegrate, dissolve or assimilate hydro-carbons like fat or wax. It is the pancreatic fluid, a secretion from the pancreas or sweetbread, that is chiefly concerned in the digestion of fatty matters, and I assume its action would be the same on wax. "The true action of the pancreatic fluid is to break up the large granules and globules of fat (hydro-carbon) into myriads of minute particles from 1.3,000th to 1.15,000th of an inch in diameter. In this way fat (may be wax) is emulsified and converted into a milky fluid, which freely mixes with water and passes through the tissues and is assimilated in the system."

A Dr. Dobell experimented in the laboratory of Messrs. Savory & Moor, of London, on the action of the pancreatic

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fluid, and read a paper before the Royal Society of London on the remarkable emulsifying properties of the pancreatic fluid on fats (hydro-carbon, same as wax).

Now, Mr. Editor, I don't know. I only assume that this same pancreatic fluid may act on wax the same as on the fats. It is this wonderful emulsifying action of this peculiar fluid that may counteract any ill-effects of wax eaten with honey, for no one seems to complain of indigestion through eating the wax, and it might have been this same emulsion that cured Mr. Hutchinson's friend of constipation by increasing the peristaltic action of the bowels.

But why concern ourselves about the digestibility of the small portion of wax eaten, when no ill-effects are reported. Comb honey is the perfection of creation as pertains to bee culture. No man who is interested in his bees and their works can but appreciate and admire a section of well-filled honey. Its aroma, its snowy capping, its wonderful fabrication, its secret origin from within the innermost recesses of the Floral Kingdom, should, and must, appeal to his finer sentiment and appreciation of Nature's works. It's an immaculate production, fit for the gods.

E. F. ROBINSON.

Victoria, B.C.

[We appreciate Mr. Robinson's opinion very highly in connection with this controversy re the digestibility of wax. What he says looks like a solar plexus blow upon our rash selves. However, we will await the opinion of others. It would appear that at present there is nothing absolutely definite known.—Ed.]

Honey Labels.—Place your order for Honey Labels, Letter Heads, Bill Heads, Envelopes, etc., with The Hurley Printing Co. Satisfaction guaranteed.

PRICING AND GRADING OF HONEY

Mr. Deadman Replies

If I thought your readers would like the discussion on Coöperation in the Sale of Honey continued, I would be pleased to reply more fully to Mr. Chrysler. I will only take space if possible to make it plain as to why the grading of honey becomes a necessity when handled by a Coöperative Association, and not when sold direct to either the wholesaler, the retailer or the consumer. We will suppose that Mr. A and Mr. B have honey to sell. Not belonging to an association, they sell it direct. Mr. A's honey may be better than Mr. B's, but no matter—each sell their honey and get what they asked. If Mr. A gets one cent or more per pound for his honey, it is no business of Mr. B's; each sell their honey on its own merits, and no grading is necessary, because the buyer buys it for what it is. We will suppose another year Mr. A and Mr. B join an association. Mr. A still produces the best honey. Now I would like to know how an association can do justice to Mr. A without grading his honey as better than Mr. B's, and the more there are that join an association, the more grading will have to be done, and it would become more and more difficult to do this satisfactorily. So in answer to Mr. Chrysler's query, Who grades it now? would say it is not graded except as between the buyer and seller, and no one but themselves need be concerned about it. I cannot see why this should be so hard for Mr. Chrysler to understand. It is because of this necessary grading of honey by an association that a coöperative association would be impracticable. A bee-keeper who produces only a first-class article would never be satisfied to have his honey put on the same level as some that was inferior, and for this reason there would be very few first-class producers to join.

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and an association that would have only second-class or inferior honey producers as its members, from the very nature of things, could never be a success.

If only the bee-keepers of this country would stop selling retail at wholesale, the retail grocers would handle honey same as other goods, provided they could buy or procure it as readily. For them to do this satisfactorily, they should be able to procure it from their wholesaler along with other goods. For example, when they want a dozen or more of canned corn, they do not have to order from the cannery and have a loss in freight when shipment is under so many pounds, but they can simply order it from their wholesaler along with other goods and pay for it in same way. The Honey Exchange Committee overlooked the wholesaler last year. Not only should the wholesaler be encouraged to stock honey by being able to buy it so he can make a margin of profit when supplying the retailer, but the fact that he buys in large quantities should entitle him to better prices. I would suggest before the Committee fix their scale of prices that they consult with both the retailers and wholesalers and find out what would be a satisfactory profit. I am just afraid that there are too many bee-keepers who are not willing to allow a living profit to those who buy to sell again. As a matter of fact, the bee-keeper himself would be the gainer by allowing a fair margin, because when he sells retail he would get the benefit of it. Honey is not always as satisfactory to handle as many other things, and unless the grocer can make as much as he does on corn, syrup or molasses, how can we expect him to handle it?

Mr. Chrysler took objection to my stating that I paid last year as much as three cents per pound more than some sold their honey for. I mentioned this as an encouragement for bee-keepers to advertise when having honey to sell. I do

not know what those must think who have been asked to assist towards finding a market for honey when the bee-keepers themselves are so slow to do anything. Mr. Chrysler thinks the buyer should advertise more. If you turn to the advertising columns of the Farmer's Advocate or any other stock paper, you will find advertisement after advertisement of those having stock for sale (not those who want to buy), and when one is wanting honey one would expect to find it advertised in a journal devoted to bees and honey, such as the Canadian Bee Journal. Was there ever such an advertisement in it? I cannot remember seeing it, and yet the cry has been to form a coöperative association and get the Government to help find a market! More than once I have been compelled to go to the commission house to get my supply. Surely there is a loss here, both in extra freight and commission, to some one. In fact, I have about come to the conclusion that unless I have less difficulty in securing a supply, I will either produce more or go out of the business, especially when so many in our ranks sell one pound to the consumer for about the same price as would be charged those who buy their entire crop.

In conclusion I would say, with Holtermann, keep up the retail price and also allow a fair margin to both the retailer and wholesaler.

G. A. DEADMAN.

NORFOLK BEE-KEEPERS' ASSOCIATION

A Further Attempt to Justify the Resolution

The Norfolk Bee-keepers' Association met at Delhi, May 28th. A fairly good representation was present from various parts of the county. President Trinder was in the chair. The editorial comments in the C.B.J. in reference to the "Norfolk resolution" in connection with

foul brood were brought up, and, from the statements made, there appeared to be ample justification for writing fully upon the subject of foul brood in the county. President Trinder stated that some seventeen years ago it was well known that there was considerable foul brood in the county. [Then follows charges against the late inspector, which, we believe, in the interests of all parties, had better be suppressed, unless judicially dealt with by the Department of Agriculture.—Ed.]

The resolution of the Middlesex beekeepers was endorsed, being as follows: "The Association would earnestly point out the need of a larger Government grant and more inspectors to stamp out the disease known as foul brood."

The spraying of fruit trees in full bloom was brought up, and it was thought that the word "full" should be cut out of the Act, as it gave a chance for spraying to be done when trees were half in bloom or bloom partly fallen. This was done here in our county this spring. The party defying the beekeepers said he was not breaking the law, because the trees were not in full bloom.

[After some further "facts" regarding inspection work of the past, the report closes as follows.—Ed.]

It is felt in Norfolk County that you in the C.B.J., and before the bee fraternity of Canada and the United States, cast a reflection upon the action of the Norfolk Association, and we feel that we should be set right in your journal. You wanted facts, and these are a few of them!

LEE BEAUPRE,

Sec.-Treas. N.B.K.A.

[In the short time that we have been conducting the Journal, we have found that the lot of an editor is not a happy one. We are between the devil and the deep sea—to use a time-worn metaphor. We have only to say this—that we made no reflections upon our friends in Nor-

folk. And if we did say anything that could be so construed, we humbly apologize. We did express our opinion upon the resolution passed by their Association, as we had a right to do, and expressed the opinion that they defeated the object they had in view in seeking the removal of one of the inspectors from another district. This was the extent of our criticism, and we cannot withdraw it. We would, and we will, willingly do all we can to assist them in securing the services of another inspector if he is needed. We asked for "facts" to show this need. Unfortunately, the "facts" that have been produced are not the facts we asked for. Give us the number of apiaries that are diseased and the probable number of diseased hives in each apiary. These are the "facts" that will count with the Minister of Agriculture, and are the only facts that are of use at this time. The "facts" that have been given us, and which, in the interests of the C.B.J., we are obliged to suppress, are old acquaintances of ours. It would appear that they have been carried about. They were presented in Brant County on one or two occasions by a very high-minded gentleman, whose altruistic and Christian principles prompted him to rid the Province of an incompetent Inspector for a better one. The aforesaid facts were rejected, but they appear to be now doing service in Norfolk. There are wheels within wheels. We have had a peep at all of them in this particular case. This is an old sore that has come to us as a legacy with the C.B.J. It has been festering for some years. The scab has been many times torn from it. If we are forced to perform a surgical operation, we will not shrink from the task. There are times when a man must do his duty firmly. We would advise our Norfolk friends again, therefore, to seek a remedy for their grievance without going after anybody's scalp. The peaceful, quiet way is the best way.—Ed.]

HONEY IN

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Scientific observation has with its struts puts the cleanliness in the thorough dishes and disinfected receptacles for the aroma-laden blossoms and, in the honey the hive, it is where the bees warmed by the continuously over it to the consumer in its marvelous various methods sugar manufacture unclean.

But this is gathering, storage to cell; the net loss and value is largely "in the consumer of honey required in its production. Many ways how expensive is

HONEY IN THE LIMELIGHT OF SCIENCE

It is perhaps well for the somewhat competitive lines of food that the majority of bee-keepers do not understand many of the merits of honey.

Those in the bee-keeping ranks know that choice honey is one of the most palatable of foods; that all of it can be digested, leaving no residue, and that honey is erroneously looked upon as a luxury. They also know that a jar of honey, unlike fruit, may be opened, partially consumed and, although unsealed (if kept in a warm and comparatively dry atmosphere), not spoil.

Science, however, has recently demonstrated many things of which the bee-keeper might well take note and use to advantage in popularizing honey.

Scientific investigations and close observation has determined that the bee, with its strong instinct for cleanliness, puts the cleanliest housekeeper to shame, in the thoroughness with which it polishes and disinfects the comb cells; the receptacles for storing honey. It gathers the aroma-laden nectar distilled by the blossoms and, in all its purity, places it in the honey sack, and, after reaching the hive, it is placed in the comb cell, where the bees, blowing a current of air warmed by the inmates of the hive, continuously over the open cells, evaporating it to the consistency of ripe honey and in its marvellous process making the various methods invented by syrup and sugar manufacturers appear crude and unclean.

But this is not all in this process of gathering, storing and moving from cell to cell; the nectar undergoes a marvellous and valuable change. The nectar is largely "inverted," thus saving the consumer of honey the digestive energy required in its preparation for assimilation. Many with weak stomachs know how expensive and valuable food prepara-

tions with pepsin are. The bee-keeper in his charge for honey has never yet taken this valuable feature into consideration, although, as far as is known, in this respect he has a monopoly in the carbohydrates.

Late investigations by Gershorn Franklin White, Ph.D., expert in animal bacteriology, Department of Agriculture, Washington, still adds to the scientific evidence as to the value of honey as a food, and no doubt, if properly used by bee-keepers, will tend still more to give it a prominent place on the table as a daily and regular article of food.

In Bulletin Technical Series No. 14, Dr. White, after making careful bacteriological investigations "of many samples of honey," states of bacteria in a normal apiary "the number of species isolated is comparatively small."

It is not often that the people of wealth, moderate circumstances, and those comparatively poor, can for a moderate sum find a food which the chemist, the bacteriologist, the pocket and the palate, pronounce upon so highly.

REPORTS

I have called on a few bee-keepers in the vicinity of Winnipeg and Portage la Prairie, and find that while in most cases bees when taken out of the cellar were nearly all alive, there has been a heavy loss from spring dwindling. I would place the winter and spring losses at 40%. Bees are getting honey when the weather is favorable, but we are having a lot of cold, windy weather, and bees can only fly about half the time. They are working on Wolf Willow, which has been in bloom for over two weeks. Have had one swarm to date.

J. H. STONEMAN.

Bees are doing extra well in the County of Lambton, especially around the vicinity of Arkona.

GEO. OTT.

THE SELLING OF UNRIPE AND MIXED HONEYS SPOILS THE MARKET

(By Wm. McEvoy)

I see by Bulletin 145, which I received from the Inland Revenue Department, that the Dominion officials collected and inspected 253 samples of extracted honey in 1907, and from their reports, which are a credit to these gentlemen, I am able to place every sample in its proper class—a thing these inspectors did not do. I found seven first-class, 19 second-class, ninety-three third-class and seventy-three fourth-class honeys. The Dominion officials found sixteen samples adulterated, fourteen sold as compounds, and thirty-one "high water content" (unripe). These sixty-one samples, composed of adulterations, compounds and unripe stuff, all belong to the same class. Honey is shipped into our Province in large quantities from Mexico and Jamaica and is fast filling places where the Canadian honey once sold for good prices. The dealers and shippers will pay from two to three cents more for pure clover, well ripened, than they will pay for the Mexican or Jamaican honeys.

It is to every bee-keeper's interest to leave his clover honey with the bees until it is well ripened, and to be very careful and not let any buckwheat or any other off-colored honey get mixed into it. The best way to work up a market, increase sales and get better prices is to supply the people with well-ripened honey of the finest quality.

HITS AND HINTS

(By "Hitter")

Honey gets its density by the evaporation of some of the water it contains, and it is immaterial whether this evaporation is done by the bees or by some artificial process. How, then, can there be more honey obtained by artificial evaporation?

If it is brought to the same density as the bees evaporate it, I can't say that I approve of Mr. Hopkins' shallow tank system, especially if the climate be at all moist. During moist weather some honey will take up a great amount of moisture. I have known it to become as thin as water in a day through the moisture it absorbed from the atmosphere. Again, I don't approve of shallow tank evaporators in a dry climate, unless it is a very hot one that necessitates a very short exposure. This exposure for evaporation reminds me of bee-keepers allowing their honey to stand in tanks until the unripe honey comes to the surface and the denser portions sink to the bottom. They are mostly misled in this thin honey on the surface; it is more frequently due to the moisture absorbed from the atmosphere than a gravity separation of the honey.

We should be very careful how we deal with honey, and should aim at producing the finest sample possible. No unsealed honey extracted can, by any artificial means, be equal to honey properly ripened in the comb. It is wanting in aroma (Bouquet)—that fine quality that distinguishes honey from sugar and other syrups. I don't say every cell in the combs should be sealed before extracting, but I do say the more the combs are sealed the better will be the honey. Besides, "sealing" is not a guarantee of ripeness—combs may be sealed and yet the honey not be ripe, so a bee-keeper needs to use much judgment, the result of experience, when dealing with honey.

I would like to know for certain how bees reduce nectar to honey. I am not of the opinion they depend on temperature so much as is usually stated. Is not nectar **converted** into honey by a digestive process? Does not that digestive process extract most of the water, and during that digestive process do not the bees add an acid? Not from the sting, but from certain secretory glands situ-

ated in their raw nectar was moved. It is the first time you yielding heavily nectar out on orated nectar a

The process honey that I Mr. R. Beuhr described by you, tralasian Bee-ke The honey pass the honey gate gate is so regn extractor is run tinuous stream the time on to of tin heated b is thus heated flows straight in heating of the some of the moi ripe honey (bec ed), but it mak duces its specif particles, air b to the surface, the honey stand a few hours, the bright. The hor and sealed dow thin—while it w not be left expos flavor. Honey w beautiful, bright is very much mo not warmed. It vantage of not be late, as the honey short a time after el as above. It tanks and the ro As to whether h be strained, I an find no advanta honey; gravity de

ated in their heads? Honey is not only raw nectar with some of the water removed. It is something more. Have you tasted raw nectar? If not, do so the first time you have some of your trees yielding heavily, when you can shake the nectar out on your hand; you will then realize there is a difference between evaporated nectar and honey.

The process of ripening and maturing honey that I prefer is that adopted by Mr. R. Beuhne, of Victoria, and described by you, Mr. Editor, in the Australasian Bee-keeper some four years ago. The honey passes in a small stream from the honey gate of the extractor. The gate is so regulated that, whether the extractor is running or stationary, a continuous stream of the same size runs all the time on to about a two-foot surface of tin heated by hot water. The honey is thus heated to about 150° Fah., and flows straight into the honey tank. This heating of the honey not only removes some of the moisture from what is called ripe honey (because the combs were sealed), but it makes the honey so thin (reduces its specific gravity) that foreign particles, air bubbles, etc., quickly rise to the surface, and the result is, after the honey stands in a closed honey tank a few hours, the honey is quite clear and bright. The honey should be tinned off and sealed down while still warm and thin—while it will flow easily, and should not be left exposed to lose its aroma and flavor. Honey warmed in this way has a beautiful, bright, clear appearance, and is very much more attractive than honey not warmed. It also possesses the advantage of not being so inclined to granulate, as the honey can be tinned off in so short a time after extracting when warmed as above. It is a big saving in honey tanks and the room they would occupy. As to whether honey so treated should be strained, I am inclined to say no. I find no advantage from straining the honey; gravity does all the work. After

two or three days' work, and while the honey tank is full of warm honey, the froth and scum should be removed. Never empty a honey tank during the extracting season unless to wash it out, then the last tins drawn off should be kept separate, as they will contain a quantity of froth. Honey for market should not be drawn from the tank after froth commences to run from the gate. To recapitulate: Extract sealed honey, warm it to 150° Fah., seal it as soon as clear to retain the aroma; then you will have honey which is more than a syrup.

I also think the quantity of honey in the hive has little if any effect on deciding whether the bees will swarm or not; other conditions have more effect.—Australasian Bee-keeper.

NOTES AND PICKINGS FROM A BEGINNER

In my last budget of novelties I claimed the March number of C.B.J. was all right, as I thought perhaps it was specially gotten up as a sample number. But my friend Jock has again kindly lent me another one, the May issue, and I find it is also O.K. So if you think you will keep on publishing a nice little bee paper like that, and my friend still keeps lending me his paper, I might be induced to go in partners with him to get the paper between us next year, as I see by the Journal that coöperation is thought to be a good thing by that fellow Chrysler. But the Dead-man says not for him, and goes into facts and figures to prove his case that a man can do better alone, whether it would be to sell a pound of honey or to eat it (pages 182, 183, 184 and 185), and we might go on to 187 and be no further ahead. Excuse me, please, for beginning at page 182, for you see page 165 should have been read first. Well, I always had a sort of veneration for the man from Michigan and for everything he says, but when he undertakes to

digest beeswax without the aid of a Hershiser apparatus in his stomach, then I give it up.

It would be interesting to know just how many persons complied with the request of Mr. Hodgetts re the posting up of the spraying notices (page 166).

I guess that big fellow at Markham can take care of himself and feed his bees as he likes (page 167). The author of Notes and Pickings is very much interested in that fishing excursion to Fenelon Falls to see those fellows sprinting after grasshoppers, clipping queens on the wing, having a run on the Haliburton Express, pulling the oars on a ten-ton skipper, and helping W. E. to hive a swarm of bees on a hot summer's day, shaking hands with an old hand with a new glove on—and oh, what fun! But then, uninvented guests sit on thorns, so I am not in it at all (pages 168 and 169).

A pleasant event in connection with the Middlesex bee-keepers' convention was the election of Mr. R. F. Holtermann to honorary membership in the Association. We once knew a bee-keeper from Woodstock who got the same honors conferred on him, without his soliciting it, by another association, and he very politely refused the honor (page 170).

And so big Dan (not Daniel O'Connell) has once more dug himself out, like a spring chicken, did you say? I thought that was the way the hedgehog did it. We always like to meet the author of "Don'ts" personally and read his chirpy little Don'ts, and we would suggest one of these Don'ts for his own use and benefit—Don't get angry and hit others, even if you don't be elected President of the Ontario Bee-keepers' Association (page 170).

We like to read those spring reports, but surely there should be more sent in (pages 171 and 172).

That "Norfolk resolution," which we thought dead and buried, has been resurrected by the wail of Lee Beaupre, Sec-

retary of that Association. By the crocodile tears shed for the bee-keepers of the eastern portion of Ontario, and also the great pains he takes to clear the fair name of Holtermann, my comments to Mr. Beaupre must be very brief. I feel that he has only opened his mouth and put his foot in it. (I don't say the cloven foot). He says he has no ill-will against those down East. Then why does he wish to deprive them of their rights by asking the Government to remove the only inspector there is for nearly one-third of the Province? Then he plainly insinuates that McEvoy failed in his duty. He does not need to go back a quarter of a century to remember when certain bee-keepers in Norfolk County gave the officers of one of the largest bee-keepers' associations in Ontario quite a bit of trouble over foul brood matters. Now, when he has the man of his choice for an inspector, he should at least know enough to keep his head and let others alone. Live, brother, and let live. We feel satisfied, however, that had the County of Norfolk Bee-keepers' Association studied the matter for a moment, no such resolution would ever have been passed.

CENTRAL CANADA FAIR, OTTAWA

As previously announced, the dates for the Central Canada Exhibition at Ottawa this year are Sept. 18th to 26th.

The many patrons of the Fair from this district have been looking forward to the announcement of the special features arranged for the show, and, these having been announced a couple of days ago, we hasten to supply the demand for information. The directors, as usual, are endeavoring to make this annual fair more attractive and pleasing to its patrons, and have made changes calculated to attain this object. In the first place, the prize list has been increased to \$16,000, the premiums being greater in

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almost every department, with the view of having a grander display.

The number of gold medals as special sweepstake prizes has also been increased until now they number 45. The grounds are being improved and beautified, and, continuing the policy pursued in previous years, another new building is being erected. This building is for the display of Fine Arts and Ladies' Work. The new building is costing \$12,000, and will prove a splendid addition to the accommodation of the Association. The Pure Food Exhibit by Canadian manufacturers promises to be one of the most attractive displays ever made at the Central Canada Fair. This is an innovation which will no doubt be appreciated by visitors. Building is also sufficient to show that the exhibits will excel those of former years.

It is expected that in another month the complete programme will have been arranged. As usual there will be a Bench Show of Dogs in connection with the Fair, and, to signalize the opening of the new Fine Arts Building, the Ontario Society of Artists has accepted the task of preparing a magnificent exhibit of pictures, the work of leading Canadian artists.

In another column appears the Honey and Apiarian prize list.

A GOOD IDEA FOR WATERING

Take a bit of board about 8 inches square, 1¼ inches thick. Take a 3-lb jam jar, round thick neck; place jar upside down on board, mark it round; now hollow it out at 3-16th inch deep; now cut radiating grooves ¼ inch deep; now fill jar of water, place board on top, turn over quick; you will not spill the water, and you will have one of the best contrivances ever made for out-door feeding. The grooves will always remain full, and at the same time dry for the bees to stand upon.

FOUL BROOD INSPECTORS APPOINTED

Yours of the 29th inst. to hand. Five of the bee inspectors have been appointed, as follows:

J. L. Byer, Markham—Victoria, Durham, Ontario and York.

Wm. McEvoy, Woodburn—Halton, Wentworth, Brant, Haldimand, Lincoln and Welland.

Jas. Armstrong, Cheapside—Norfolk, Oxford, Waterloo and Wellington.

W. A. Chrysler, Chatham—Essex, Kent and Lambton.

H. G. Sibbald, Claude—Peel, Dufferin, Simcoe, Grey and Bruce.

You will note that there is a redistribution of the counties, and we have not as yet chosen a man for Middlesex, Elgin, Perth and Huron. This appointment, I expect, will be made at the next meeting of the Council, when I will send you the additional name at once.

In reference to the eastern district, it has been decided this year to send a man down to these counties who is thoroughly conversant with foul brood in all its stages to make an expert examination of the apiaries in the most important centres. At the present time we have no definite knowledge that there is any foul brood in these counties outside of the attack of European foul brood in the vicinity of Trenton. None of the local bee-keepers there have had any experience with the disease, and are therefore not competent to examine apiaries to find out whether the disease is at all prevalent. It is likely that the man who is sent down will be in a position to point out to the bee-keepers in any place that he may visit the characteristics of the disease, should he find it existing there, so that in future we will have men in the east familiar with the disease.

Very truly yours,

P. W. HODGETTS.

INTERESTING GERMAN ITEMS

(Translated by Jacob Haberer)

When Will the Linden Yield Nectar?

After more than fifteen years' close observation of different kinds of trees as to their value as honey plants, I have found that the Linden will yield most honey in a rather dry year; but this not only depends on fine weather for the bee flight about blossom time, but has its main reason in the weather conditions of April, May and June, as by about the end of June the first part of vegetation comes to a close, owing to the dampness in reach of the roots being used up and the leaves of the tree evaporating more water than the roots can furnish. The less rain during April, May and June, the sooner this will set in. As the leaves and young branches have reached a certain hardness, they will resist the hot sun rays more than the soft leaves would do and will not evaporate nearly so much water as the latter. Now, as the main point will be the propagation of life, the full power will be thrown on the blossom, and in such years you will see bees visit the buds just before they open, and the fragrant air from the Linden, especially at morning and evening, will soon bring the bees. But in case of too much rain during the past months, the above-mentioned condition will not set in and the growth will not stop. The trees with the large leaves are the most disappointing for the bee-keeper as a rule. After a wet April or May, with great heat in June, masses of leaves and young branches will require the full power of the tree; the ground will soon be dry, but the leaves and branches not solid enough, and you will see them hang down on hot days. After a few days a good shower may come and the blossoms open out. The bees will come, but, alas! have to go home empty again. The long stems of the flowers get hard from the

heat, and will not let the nectar through, but it will work its way somewhere, and the leaves will be its next exit, and consequently there will be the basswood honey-dew.—G. W., in Leipziger Bienenzeitung.

There is much indignation among German bee-keepers over the decision of the High Court (Reichsgericht) there. A Bavarian bee-keeper named Keiniger sold and advertised honey at unusually low prices during the poor honey year of 1906. Another bee-keeper ordered 200 pounds of dark honey from him at eighty marks per hundred, but got light-colored honey. It did not seem pure to him, so he did not accept the honey, and sent it back. A sample of it was sent to Munich for inspection, and was found to contain eleven per cent of cane sugar, and by experts it was stated that by pure sugar feeding the bees could not produce a honey with more than ten per cent. cane sugar, so it must have been added afterwards. The matter went to court, and Keiniger was fined 200 marks (about \$50), but he appealed to the High Court, and this court decided that only honey with sugar syrup put in afterwards can be called adulterated, but if sugar is fed to the bees and then extracted, it cannot be called a falsification, as such would be impossible through the body of the animal, just as if a cow gets food in the pasture or if fed with artificial food in the stable, the product would always be milk; in the case of the bees, the same decision was given. Of course, this judgment opens the door wide for adulteration. No wonder the German bee-keeping world is very angry about it.—Lux. Bienenzeitung.

The present theory about the fertilization of the virgin queen is: Only once in her life, and only from one drone, will a young queen be fertilized. But my observation of many years is different

July, 1908
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Bienenzeitung.

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and apiarists who, have time and patience may observe the same this summer. The young queen commences her flights the fifth day, between one and three o'clock in the afternoon, sometimes a little earlier. These flights are repeated daily three or four times. In case of bad weather it may be three weeks, but if fine it will only be repeated two or three days. At the first flight she acts like any other young bee. She runs about the front, takes a short flight and comes back in a minute or two. The following flights will last from five to ten minutes. It is during the first flight that they often get lost and seldom get mated. In unsuitable weather they return two or three times with the mating sign. I am not deceived in this, as I have seen it many times. I am raising about 100 queens per year. In former years I often used them in nuclei as soon as I have seen them coming home with the mating sign, and they often failed, so they took flight again, and on returning missed the new place. In view of this experience, I do not use them any more until they lay eggs.—E. Frunke, in Lux. Bienenzeitung.

A simple way to water bees in cool spring weather: Cut sponges in small pieces, soak them with water and place them in front of the entrance. The bees will soon set around the sponges and take the water without flying off, and not a bee will be lost.—Lux. Bienenzeitung.

Rubberoid a Bad Summer Quilt

I have used rubberoid sheets on hives the last three years (they are called summer quilts), but am tired of them for the honey season. They are all right for winter or spring. The last two years I found occasionally a colony cutting the sheet, this year a great many eat the rubberoid and use it among the wax and seal the combs with it. I tell you it is a

disgusting sight to open a hive and, instead of nice, white-capped combs, find the combs as black as the rubber sheet. The honey was not affected, but by melting the capping likely it will. I am very glad I had none on sections. I use a wooden cover on these. Supply dealers had better offer these sheets for spring and fall, but under no circumstances for the honey season, unless, perhaps, they are oil painted. I bought some just a few days ago, but don't know the result yet. Maybe they will let them alone for a while.

Try Ours

Most bee-keepers make remarks in the Journal about foreign honey being far inferior to their own. Could they get anything better than our clover honey? I doubt it, and I think all will agree with me. Likely they never had much (or perhaps none) of it yet.

DISEASES OF BEES TO BE DISCUSSED

One of the most serious disasters that can visit an apiary is that of foul brood, either American or European. All should be constantly on the watch for it. Every bee-keeper ought to be able to recognize it instantly, and know exactly what course to take when it is found. Not only is foul brood a great misfortune to the owner of the diseased colonies, but it is a serious menace to surrounding apiaries. For these reasons, one whole session of the National convention is to be devoted to the discussion of Diseases of Bees. Dr. White, of the Apiarian Department at Washington, has consented to take up the bacteriological feature; show us how cultures are made and the diseases propagated, etc. Some one of the inspectors will tell us how to detect the diseases, another how to treat them, etc.

HONEY IMPORTATIONS INTO CANADA

Government Returns

Fiscal years.	Pounds.	Value.
1888—Total	18,666	\$ 2,312
1889—Total	46,184	4,941
1890—Total	39,585	4,650
1891—Total	25,999	3,563
1892—Total	28,699	3,751
1893—Total	15,812	2,207
1894—Total	25,339	2,463
1895—Total	11,984	1,404
1896—Total	32,052	3,504
1897—Total	26,149	3,003
1898—Total	43,232	3,920

Countries.

1899—Great Britain	84	\$ 13
China	163	5
Greece	60	15
United States	83,581	8,546
Total	83,888	\$ 8,579
1900—Great Britain	75	\$ 14
British West Indies	200	13
Austria	5,892	278
Porto Rico	40	3
United States	136,766	\$13,326
Total	142,973	\$13,634
1901—Great Britain	148	\$ 21
British West Indies	2,565	277
Austria	13,049	574
Germany	2,800	124
China	220	4
Turkey	13,574	326
United States	97,412	9,627
Total	129,768	\$10,953
1902—Great Britain	31,856	\$ 1,128
British West Indies	18,754	674
Austria	6,571	278
China	320	8
Germany	3,559	156
United States	74,895	6,775
Total	135,955	\$ 9,019

Fiscal years.	Pounds.	Value.
1903—Great Britain	5,201	\$ 177
British West Indies	55,227	2,278
Hong Kong	207	5
China	391	9
United States	60,214	5,417
Total	121,240	\$ 7,886
1904—Great Britain	16,251	\$ 688
British West Indies	33,785	1,408
Hong Kong	600	11
Austria	2,063	124
China	580	18
United States	65,845	7,965
Total	119,124	\$10,048
1905—Great Britain	26,046	\$ 76
Australia	2,126	12
British West Indies	29,168	1,228
Hong Kong	838	13
China	282	8
United States	57,275	7,000
Total	115,735	\$ 9,145
1906—Great Britain	4,699	\$ 13
Australia	2,368	11
British West Indies	17,579	48
Hong Kong	1,759	4
China	491	1
Greece	144	2
United States	56,594	6,720
Total	86,634	\$ 7,527
(9 months)		
1907—Great Britain	8,031	\$ 2
British West Indies	131,370	4,1
Hong Kong	248	4
China	738	1
Hawaii	1,200	1
United States	182,066	15,7
Total	323,653	\$20,2
1908—Great Britain	20,510	\$ 1
Australia	2,895	1
British West Indies	325,645	10,4
Hong Kong	866	1
China	502	1
Hawaii	4,080	1
Japan	60	1
United States	266,572	23,7
Total	621,150	\$35,8

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Exhibitors prizes, shall for thereafter. Bee prizes. Exhibit Only one sp entered in each

CLASS 67

Special Prize, b exhibitor in First Prizes

- Sec.
1. Best 20 lbs
 2. Best 100 lb quality
 3. Best 100 lbs and finis
 4. Best 10 lbs considere
 5. Best 10 lbs and clea
 6. Best 10 lbs
 7. Best 10 lbs
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 12. Best Hive f
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All Entries must

Central Canada Exhibition, Ottawa

September 18th to 26th, 1908

HONEY AND APIARY SUPPLIES—(In New Dairy Building)

Exhibitors showing honey not the product of their own apiary, in competition for prizes, shall forfeit any prizes awarded, and be debarred from exhibiting for two years thereafter. Bee-keepers who have supplies can exhibit such, but not in competition for prizes. Exhibitors will be allowed all possible space in New Dairy Building.

Only one specimen from any one apiary or apiaries under one management can be entered in each section. These rules will be strictly enforced by the Directors.

CLASS 67

Special Prize, by W. G. Charleson, Esq., Ottawa, to the exhibitor in Class 67 winning the greatest number of First Prizes

Sec.	1st	2nd	3rd	4th
1. Best 20 lbs of Extracted Granulated Honey, in glass..	\$6	\$4	\$2	\$1
2. Best 100 lbs of Liquid Extracted Honey, in glass, quality to be considered.....	10	6	4	2
3. Best 100 lbs Comb Honey in sections, fresh appearance and finish to be considered.....	10	6	4	2
4. Best 10 lbs of Comb Honey, quality and finish to be considered; that is to say, body and flavor of honey and clean and best filled sections to be considered	5	3	2	1
5. Best 10 lbs of extracted Clover Honey in glass.....	5	3	2	1
6. Best 10 lbs of extracted Linden Honey in glass.....	5	3	2	1
7. Best 10 lbs of extracted Buckwheat Honey in glass..	5	3	2	1
8. Best Beeswax, not less than 10 lbs.....	2	1	..	..
9. Best Exhibit, the object being to educate the public as to Bees—their natural history, the bee-keeping industry and its relation to horticulture.....	5	3	2	1
10. Best foundation for Brood Chamber.....	1	.50	..	..
11. Best foundation for Comb Honey.....	1	.50	..	..
12. Best Hive for Comb Honey.....	1	.50	..	..
13. Best Hive for Extracted Honey.....	1	.50	..	..
14. For the most tasty and neatly arranged exhibit of Honey in the Apiarian Department, all the honey to be the product of the exhibitor.....	Diploma			

All Entries must positively be made on or before Wednesday, September 16th.

E. McMAHON

Secretary of Exhibition, Ottawa.

Pounds.	Value.
5,201	\$ 177
55,227	2,278
207	5
391	9
60,214	5,417
121,240	\$ 7,886
16,251	\$ 688
33,785	1,408
600	11
2,063	124
580	10
65,845	7,808
119,124	\$10,048
26,046	\$ 760
2,126	124
29,168	1,224
838	15
282	5
57,275	7,000
115,735	\$ 9,140
4,699	\$ 112
2,368	11
17,579	48
1,759	4
491	1
144	1
56,594	6,720
86,634	\$ 7,520
8,031	\$ 200
131,370	4,300
248	1
738	1
1,200	1
182,066	15,700
323,653	\$20,000
20,510	\$ 1,000
2,895	1
325,645	10,000
866	1
502	1
4,080	1
60	1
266,572	23,000
621,150	\$35,000

SOCIÉTÉ D'APICULTURE DE LA PROVINCE DE QUÉBEC

Circulaire

Comme vous l'avez sans doute appris par la voie des journaux, le 5 février dernier avait lieu, à St-Hyacinthe, une réunion d'un grand nombre d'apiculteurs, et il fut décidé de se constituer en société, sous le nom de "La Société d'Apiculture de la Province de Québec."

Le but de la formation de la société est de réunir ensemble tous ceux qui s'intéressent à la culture des abeilles, pour travailler à la protection des intérêts qui leur sont communs, et parmi lesquels je ne mentionnerai que les principaux, qui sont :

1° L'instruction de ses membres au moyen d'assemblées, conférences, etc., où seront discutées toutes les questions concernant l'apiculture ;

2° Les moyens à prendre pour protéger les abeilles contre les maladies, parmi lesquelles, il faut surtout mentionner "LA LOQUE," maladie contagieuse qui commence à faire de grands ravages dans la Province de Québec, et qui, si elle n'est pas arrêtée, menace de l'envahir toute entière ;

3° Obtenir du Gouvernement de Québec la passation de lois, comme il en existe dans les autres pays, surtout aux États-Unis et dans la Province d'Ontario, pour encourager la culture des abeilles, par certains moyens qu'il serait trop long d'énumérer ici :

4° Trouver des marchés pour l'écoulement du miel et en faciliter la vente à ses membres ;

5° Enfin, adopter tous les moyens propres à faire progresser la culture des abeilles, qui forme déjà une branche importante de l'agriculture de cette province.

Tous ceux qui s'occupent de la culture des abeilles sont, dans leur propre intérêt, invités à faire partie de la société.

A tous ceux qui m'enverront la somme

d'une piastre (\$1.00) en paiement de leur souscription comme membre de la société, pour la présente année, j'enverrai gratuitement un traité sur la culture des abeilles, qui vaut, à lui seul, le montant de la souscription.

A. O. COMIRE, M.D.,

Secrétaire-Trésorier.

St-François du Lac, Comté d'Yamaska.

Rapport de la Assemblée

Assemblée des membres de la société d'Apiculture de la Province de Québec tenue à l'Hotel-de-Ville, à Sorel, le trente Juin de l'année mil neuf cent huit, à une heure après-midi, à laquelle assemblée sont présents: Mons. Chas. Péloquin, M.C.A., président; Messieurs Michel Dufault, Dr. J. L. Comiré, Onésiphore Fontaine, M. E. Dufault, Ulderic Paradis, A. O. Comiré, et un grand nombre d'autres membres de la société.

Les procédés de la dernière assemblée, sont lus et approuvés.

Proposé par Dr. L. J. Comiré, secondé par Mr. Onésiphore Fontaine :

Que Monsieur Uldéric Paradis soit élu directeur de cette société en remplacement de Monsieur Théodore Cloutier, qui n'a pu accepter la charge.—Adopté.

Proposé par le président, Mr. Chas. Péloquin, secondé par Mr. Michel Dufault :

Que des remerciements soient votés au secrétaire-trésorier, qui donne ses services gratuitement à la société, et qu'il soit décidé, par la présente résolution, que cette société lui paye, au moins tous les déboursés qu'il est obligé de faire dans l'intérêt de cette société, tels que frais de voyage, impressions, papeteries, postage, etc.—Adopté.

Le Secrétaire donne ensuite lecture de l'assemblée de la loi passée à la dernière session de la Législation de Québec, pour combattre les maladies contagieuses sur les abeilles et surtout la LOQUE.

Il est alors proposé par Mons. Uldéric Paradis, secondé par Mons. Michel Dufault :

Que des remerciements soient votés à l'Hon. Jules Allard, pour la culture, pour la loi ci-dessus mentionnée, et à la société d'Apiculture de la Province de Québec, pour la loi ci-dessus mentionnée, et pour avoir nommé le plus grand nombre d'inspecteurs, pour la loi ci-dessus mentionnée, et pour avoir nommé le plus grand nombre d'inspecteurs, pour la loi ci-dessus mentionnée.—Adopté.

Le Secrétaire donne ensuite lecture de l'assemblée qu'il a tenue à Sorel, le 30 Juin, à une heure après-midi, à laquelle ont été présents : l'Hon. Jules Allard, les Messieurs ci-dessus mentionnés, et un grand nombre d'autres membres de la société.

Il est donc proposé :

Mons. Chas. Péloquin, Uldéric Paradis :

Que les noms suivants soient adoptés :

1. Arthur Cor

2. Onésiphore

3. Michel E. I

Proposé par M

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A. O. COMIRE,

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Comiré, secondé ine: aradis soit en remplace- re Cloutier, qui -Adopté. nt, Mr. Chas- r. Michel Du

soient votés au ne ses services et qu'il soit dé- lution, que cette ns tous les de de faire dans , tels que frai- papeteries, post

nsuite lecture sée à la dernière de Québec, pour contagieuses sur LOQUE. ir Mons. Uldé- ons. Michel Du

Que des remerciements soient votés à l'Hon. Jules Allard, Ministre de l'Agriculture, pour les services qu'il a rendus à la société d'Apiculture, et en général à tous les apiculteurs, pour avoir fait passer la loi ci-dessus mentionnée, et qu'il soit prié par la présente résolution de nommer le plus tôt possible, conformément aux dispositions de la dite loi, des inspecteurs, pour le traitement de la LOQUE, vu que cette maladie se répand rapidement, cause des dommages considérables dans cette province et que le besoin des inspecteurs se fait vivement sentir.—Adopté.

Le Secrétaire fait ensuite rapport à l'assemblée qu'il a déjà demandé à l'Hon. Jules Allard, la nomination des inspecteurs ci-dessus mentionnés, et que ce dernier lui a répondu que si la société lui suggérait les noms de ceux qu'elle désire faire nommer comme inspecteurs, il serait heureux de se rendre aux désirs de société.

Il est donc proposé par le président, Mons. Chas. Péloquin, secondé par Mons. Uldéric Paradis :

Que les noms suivants soient suggérés à l'Hon. Ministre de l'Agriculture, comme étant ceux que la société désire faire nommer comme inspecteurs :

1. Arthur Comiré de St-François du Lac.
2. Onésiphore Fontaine de St-Guillaume.
3. Michel E. Dufault de St. Robert.—Adopté unanimement.

Proposé par Mons. Michel Dufault, secondé par Mons. Uldéric Paradis :

Que l'Hon. Ministre de l'Agriculture, soit prié de faire traduire en français, le Bulletin No. 112 du Collège s'Agriculture d'Ontario, Sur le traitement de la Loque, par F. C. Harrison, B.S.A., et d'en faire une distribution gratuite aux apiculteurs de cette Province.—Adopté.

Et cette assemblée s'ajourne.

A. O. COMIRE, CHAS. PELOQUIN,
Sec. Tres. Président.

ADULTERATED HONEY

Last month we published a letter (page 217) from Mr. R. L. Meade, of Toronto, in reference to some honey purchased by him in Toronto. We promised a report of the analysis of same. We publish the result of the analysis below. The honey was found to be genuine :

W. J. Gerald, Esq.,

Deputy Minister of Inland Revenue :

Dear Sir,—Replying to L. 49,871, I beg to say that the sample of honey in question gives results as follows :

Water.....22.10 per cent.
Direct reading on polarization.....10.10

According to the standards which I have felt justified in accepting for honey (see Bulletin 145), this sample must be classed as genuine. Such classification by no means establishes its true quality, since certain available adulterants are so nearly identical with honey in their chemical character as to be incapable of detection. So far as well-established methods of analysis are concerned, this article must be regarded as legal honey.

Yours truly,
(Signed) A. MCGILL,
Chief Analyst.

THE BEE-KEEPING OF HAWAII

We bee-keepers of the United States might be surprised if we knew all about the keeping of bees in Hawaii. It seems that Uncle Sam thought it of sufficient importance to send a special agent, our friend Phillips, of the Apiarian Department at Washington, out to these islands to investigate this industry. He spent several months studying the industry, and I have been fortunate enough to secure his promise to tell us, at the coming National convention, all about the bee-keeping of Hawaii, illustrating his talk with stereopticon views taken while at the islands. Those who are fortunate enough to be present may expect a treat.—W. Z. Hutchinson, Secretary.

BRANT COUNTY BEE-KEEPERS MEET

The semi-annual meeting of the Brant County Bee-keepers' Association was held in the Court House, Brantford, Ont., on Saturday afternoon, May 30th. There was a fair attendance of members and others. Mr. Chris. Edmondson, President of the Association, occupied the chair. Reports showed considerable winter losses and a good many weak colonies, but a favorable spring had assisted much in building up the stocks. The special feature was an address on "Management From Now Until the End of the Honey Season," by Mr. F. J. Miller, of London, who was delegated by the Department of Agriculture as one of the leading bee-keepers to give addresses at local association meetings. Among the things dealt with by Mr. Miller was the clipping of queens in winter cases before setting out the hives in spring. In connection with this work, Mr. Miller spoke of his success in finding the queen under the cover by smoking through the entrance. Brood-rearing should be stimulated as much as possible by keeping an abundance of unsealed stores in the hives, and for this frequent examination should be made. For the best results Mr. Miller advised that all queens that have passed two winters should be replaced by young ones. Mr. Miller's address was received with much interest, and the action of the Department of Agriculture in supplying such men to meet with local associations was much appreciated.

A resolution thanking the Department for this and their assistance to the industry generally was passed at the close of the meeting.

A GREAT ART LOAN COLLECTION

One of the great pictures to be on view at the Canadian National Exhibition, Toronto, this year, will be Lady Butler's celebrated painting, "Scotland Forever,"

showing the Scots Greys in full charge. Other pictures will be from the famous Pisani Gallery in Florence, Italy, and the best Art Galleries of Europe. Mr. A. G. Temple, Director of the Guildhall School of Art, has the choosing of the pictures in hand, and he has written to Dr. Orr, the Manager of the Canadian National Exhibition, saying that the collection he proposes to send to Canada will exceed in value and art worth anything that has ever left the shores of Britain on a similar mission.

LIVE BEE DEMONSTRATIONS

Few things will attract and hold a crowd better than the handling of bees in a wire cloth cage. A good demonstrator can do very effective missionary work at such times, or, if at fair, large quantities of honey may be sold at such demonstrations. Of course, to a bee-keeper, the handling of bees is no novelty, but not every one of us knows how to handle bees in a cage in the most successful and agreeable, yet novel manner, hence it will be interesting to know that E. R. Root has consented to bring a cage to the National convention, and give an actual demonstration of how he makes this exhibition.

ATTRACTIVE FLORAL DESIGNS

One of the prime attractions at the Canadian National Exhibition, Toronto, this year, will be in the Agricultural Building, when it is expected some of the most elaborate designs in plants and flowers will be on view. The Committee of Management have decided to give \$1,100 in prizes for the best design, to cover not more than five hundred square feet.

The weekly report of the Department of Trade and Commerce, No. 232, announces that a firm of general brokers and importers in Leeds would like to hear from Canadian exporters of honey. When writing the Department for address, refer to No. 970.

have a most beautiful creation, and a deep understanding of economic adaptability. will, I feel confident, amount to a vast amount of assistance to the student.

I may mention, further, that we are a very different gentleman for the knowledge more especially in America; Reuben, and a brilliant Huber, of Georgia, who are so distinguished as Prof. Leuchs, Siebold of Munich, Philadelphia, and other gentlemen have Prof. Cheshire, of the Royal Society—all entomologists.

The queen is the mother of the colony, and her bees under the cover of an egg less than a day left to hatch, and, under the protection of the hive, would produce just twenty-four perfect insects; but which emerges first, with a supply of concentrated food, for want of a more great change in about. This food is in the head of the larva for the is changed to food, pollen and water, the nurse bees, and such abundance remains in the royal has vacated it. The other members of the

THE HONEY BEE

(Continued from Page 252)

have a most beautiful example of a wise creation, and a thorough study and understanding of these insects, with their economic adaptation of means to the end, will, I feel convinced, awaken no small amount of astonishment and pleasure to the student.

I may mention, before proceeding further, that we are indebted more to reverend gentlemen than any other persons for the knowledge we have of the bee, more especially the Rev. Mr. Langstroth, in America; Rev. Mr. Dzierzon, in Germany, and a blind gentleman, Mr. Francis Huber, of Geneva—all earnest investigators, who sought the aid of such men as Prof. Leuchart and Prof. C. L. Von Siebold of Munich, Dr. Joseph Leidy, of Philadelphia, and later the views of these gentlemen have been substantiated by Prof. Cheshire, of the London Microscopical Society—all skilled microscopical anatomists.

The queen is the most important member of the colony. She is raised by the bees under the swarming impulse, from an egg less than three days old, which, if left to hatch as deposited by her majesty, under the usual conditions of the hive, would produce a working bee, taking just twenty-one days from egg to perfect insect; but by feeding the larva, which emerges from the egg in three days, with a superabundance of highly concentrated food—termed "royal jelly" (for want of a more expressive name)—a great change in this insect is brought about. This food is secreted from glands in the head of the nurse bees, and fed to the larva for three or four days, when it is changed to food composed of honey, pollen and water, digested into chyle by the nurse bees, and fed to queen larva in such abundance that a surplus always remains in the royal cell after the queen has vacated it. This never happens with other members of the colony. The change

which this stimulating food brings about is almost beyond our understanding, and always creates great interest to the student of apiculture.

This egg, as I have stated before, which would have brought forth a working bee in twenty-one days, now produces a far higher developed insect in fifteen. Compared with the worker, it is about one-half as large again, its jaws are shorter, its head rounder, and it has, besides the two compound eyes, three ocelli on top of the head. Its thorax is one one-hundredth of an inch larger, which fact has been turned to valuable account by the practical bee-keeper, for a worker bee can get through an opening seventeen one-hundredths of an inch wide, but a queen cannot; she requires eighteen one-hundredths. So by using zinc with perforations of the first-mentioned size between the brood hive and the surplus receptacle, to confine the queen below, much time can be saved in handling bees for commercial gain.

The queen will under no consideration gather honey or pollen—in fact, never leaves the hive except to meet the drone, and that only once in her life, and to accompany the bees when swarming. She has wax-secreting glands in her abdomen, but only in rudimentary form, so cannot secrete wax. She has no pollen baskets on her legs, and although she has a sting one-third longer than the worker, she will never use it except to sting a rival queen. As a worker its life would be about two months in summer, or working season; and in winter, or its semi-dormant state, eight months, but as a queen she will live four years, or until she gets so old that her eggs produce mostly drones or males, when the bees will supersede her. Her prolific egg-laying is astonishing, for in the height of the breeding season, in a populous hive, she will lay from 2,000 to 3,000 eggs in twenty-four hours.

I now come to the most interesting and wonderful part of this insect's

full charge. the famous Italy, and the Mr. A. G. Aldhall School of the pictures n to Dr. Orr, dian National collection he a will exceed anything that Britain on a

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natural history—the reproduction of its species.

There has been much speculation and theory indulged in to account for the strange phenomena witnessed by the observing student, and opposed to the generally accepted idea from a biological standpoint, viz., the egg from an unfecundated creature hatching into life, but such is the fact beyond all doubt, and the virgin queen bee can lay any number of eggs which will produce only drones or males, and it is not until she has taken her wedding flight, high in the air, and had copulation with the drone, that she can lay an egg which will produce a worker or queen.

Here we are reminded of the wise provision Nature has made to perpetuate this insect for the use of man, to enable her virtually to effect her own fecundation in twenty-four days, should drones not be present in the district. After fecundation the queen can lay eggs that will produce workers or drones as she thinks fit, according to the cell in which she deposits the egg. Drone-cells are large, measuring four to the lineal inch, workers' cells five to the inch. This difference of size regulates the sex that will be found in them. But wise economy directs her to pass a drone-cell at such times of the year when drones are not wanted in the hive. In the swarming season she can pass from worker to drone-cell in quick succession, depositing an egg in each, which will produce the two sexes respectively.

Here I shall mention a few of the strange changes in this insect's progeny, brought about by the various conditions of breeding and mating, which, if well considered, will give food for thought.

The queen, if raised from an egg laid by a pure-bred mother, mated to a pure-bred drone, will naturally be pure herself. If the mother were mated to a black drone, our queen will be a hybrid, partaking of the characteristics of both

parents. Presuming our queen to be raised from pure stock, she will produce pure drones, and if mated with a pure drone will produce pure workers also; but if she mates with a black drone, her eggs will produce pure drones (as he is the son of his mother only), but hybrid workers and queens and these last queens will produce hybrid drones and mongrel workers and queens of various degrees of variety, according to the drone she mates with.

Hard as it may seem to control the races, still it is within the power of a good queen-breeder to regulate the mating of his stock to a certain extent.

The old or fecundated queen always accompanies the first swarm from the hive, but not before the bees have provided several embryo queens, which in eight days after the swarm leaves will hatch, and one be accepted as the reigning monarch. Some three or four days before the old queen leaves, she gradually reduces the secretion of eggs in her ovaries, which also reduces the number deposited in the cells, thus making her size and weight considerably less, enabling her to fly with greater freedom in accompanying the bees to their new home, which may be a mile or so away.

Here we see another wise example of adopting the means to the end, for should the queen continue in the successive oviposition up to the time of her flight, she would receive a severe check, and possibly harm, when she arrived at the new domicile, where there would be no cells in which to deposit her eggs until the bees had converted the honey in their honey sacks into wax scales and built the comb for her use, Nature having given them the instinct to take this honey with them specially for the purpose.

The next inmate of importance is the neuter, or undeveloped female, whose ovaries are only in a rudimentary form; it is in the egg three days, larva five

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pupa thirteen, ble but perfect

This larva is fed ey, pollen and w chyle by the or until it ass tion in the cell, allowance and rather porous cov and pollen to en hatched she ta hive for about a, capping brood, fine afternoons young bees wil

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 book-keeping. 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.

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...pupa thirteen, and leaves the cell a ... but perfect insect in twenty-one ...

This larva is fed on food composed of honey, pollen and water, partly digested by the nurse bees, for five days, or until it assumes the horizontal position in the cell, when it receives an allowance and is sealed over with a rather porous covering, composed of wax and pollen to allow of ventilation. When hatched she takes up the work of the hive for about eight days, feeding the young, capping brood, etc.

... fine afternoons great numbers of young bees will be seen flying or

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National Bee-Keepers Association

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hovering in front of the hive, with their heads turned towards it. This action is to mark their station before taking to field work, and they will gradually extend their circles further and further from the hive; then off they will go to the fields for honey and pollen. They are not, however, great workers in the field for the first two weeks, but attend more to comb-building, as at this period of their life they are great secreters of wax and scarcely matured enough for the long flights and arduous duties of honey and pollen gathering.

This member of the family is the only one provided with perfect wax-secreting glands, eight in number, on the underside of the body, which is composed of rings or segments, six in number, which allows the insect to expand itself to accommodate the load of honey in the honey sack. Its legs are a marvel of usefulness in its domestic economy. On the hind legs, at the articulation of the tibia and adjacent tarsal joints, are the wax-pinchers, by which it removes the wax-scales from the wax-pockets as fast as secreted. Also the pollen baskets are situated on the outer face of the femora of this leg, and on this spot it also carries loads of propolis, or resin, gathered from the buds of various trees and plants, which it uses to stop up cracks in the hive, etc. On the front leg it has the antennae and palps.

It is provided with two compound eyes and three ocelli. Its tongue, with which it sucks the nectar from the flowers, is about a quarter of an inch long, whereas the bumble bee's tongue is three-eighths of an inch.

In the posterior part of the abdomen is situated the sting and poison bag. The worker bee in the field never volunteers an attack, and when it does sting it does so but once, as the shaft is barbed, and in the bee's effort to free itself, the sting and poison bag is torn from its body, and although it flies away home a

Big Fe In A

Yes. Not only ones. The small "show" at the merchants, and in the iron-bearing County, Minnesota cash that exceeds These iron-bearing makers for those are situated in the which lies along Railroad between erd.

End of Ore In

Although \$1,500 distributed this year of only one company in Minnesota, still the iron-ore in older scarcer and scarcer mines will have to numbers than before.

Your Opportunit

This then is your consider it the cl We control a qual and in Township Wing County, Minn miles from Deerw

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STEAM SHOVELS WORKING IN MINNESOTA IRON MINES

Big Fortunes Are Being Made In Minnesota Iron Lands

Yes. Not only big fortunes but little ones. The smaller people are getting a "show" at the great profits. Farmers, merchants, and others who have money in the iron-bearing lands of Crow Wing County, Minnesota, are getting profits in cash that exceed their fondest hopes. These iron-bearing lands are money makers for those who take out ore. They are situated in the Cuyuna Iron Range which lies along the Northern Pacific Railroad between Deerwood and Brainerd.

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Although \$1,500,000 in dividends were distributed this year to the stockholders of only one company in Northern Minnesota, still the indications are that the iron-ore in older sections is getting scarcer and scarcer every year. New mines will have to be opened in greater numbers than before in other sections.

Your Opportunity—Our Proposition

This then is your opportunity. Many consider it the chance of a lifetime. We control a quantity of iron-bearing land in Township 46, Range 29, Crow Wing County, Minnesota. It is but 3 1/2 miles from Deerwood, a town on the

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A short distance North of this property a prominent ore company has sunk a shaft and is now mining. In every direction drills have disclosed valuable finds of iron ore. Within 80 rods of this land drills have blocked out forty million tons of iron ore. The above ore company referred to has offered to supply us with money and take half the profits. We prefer, however, to develop it ourselves and divide the profits among those who invest with us in this valuable land. Consequently, we believe it will be an excellent opportunity for you to receive good dividends on your investment.

We are an organized corporation, capital \$150,000.00. The price per share is \$10.00 each. Our prospectus and other literature give full description of the property with pictures, guarantees, references, map, and everything that it is possible to put on paper which reflects an honest, straight-forward and reliable investment.

A visit to these lands will well repay you. Send for above prospectus quick, and ask us any questions if you feel inclined to. We will give you an honest, straight-forward answer.

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its attack, it must die quite soon, for a bee unable to sting is never found in the hive. I must refer to this trait in not volunteering an attack when unmolested and not being able to sting a second time as a wise provision, so that this insect should not become a nuisance to man, who by his intelligent management can remove the product of the bee from its home without any danger, but enables the insect to defend its stores from the throng of thieves, such as wasps, bumble bees, moths and flies too numerous to mention, which would soon deplete the unprotected larder; so that the dream of the unskilled bee-keeper, that a stingless bee may some day be the crowning result of evolution can never be realized, for we find that in Australia the imported hive bee is rapidly exterminating the small, stingless native variety. Here we have a very forcible example of the sur-

vival of the fittest. In Nature's struggle for existence we see the bee armed with a sting able to rob and starve out its competitor, whereas the stingless bee is quite powerless to enter the hive of its more powerful enemy, and in course of time becomes quite extinct. Without the sting we see the insect could not live, and this fact again intimately connects the bee and our fruit crops.

(To be Concluded)

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MR. WM. McEVROY, who has ordered a large number of these queens each year, for several years back, writes:—"I don't consider that your Queens have cost me a cent. They more than pay for themselves every time."

I am already booking orders from extensive bee-keepers who have tried the stock in former years and are well satisfied with it.



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T. C. BATE,
President.

rangements to make the July issue of this popular illustrated monthly as interesting to the thousands who visit Quebec as to those who cannot go. The cover is a magnificent portrait of the Prince of Wales in the uniform of a vice-admiral. It is pronounced the best yet published in Canada. A special feature is a large map of the city of Quebec and environs, made specially for this occasion, showing the Plains of Abraham and indicating the relative positions of the opposing armies on this historic battlefield. The road with which it is proposed to encircle the new National Park is also

shown. The publishers have been given access to the advance drawings for the pageants, and they will be reproduced. It is announced that the August number will be filled with illustrations from actual photographs taken during the celebration itself, so that the two numbers will be worth binding as a souvenir of an event of national importance.

The high standard of excellence maintained by the Canadian Pictorial since the very first issue is sufficient indication that now the publishers announce a special number it will be "special" in every sense of the word.

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THERE will be **BALLOON RACES** daily, with a double **PARACHUTE DESCENT** from each Balloon, by the famous **PROF. HUTCHISON** and companion.

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