

The  
**Canadian Bee Journal**

Devoted to the Interests of Bee-Keepers

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Vol. 16, No. 10.      **October 1908**      \$1.00 Per Annum

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Oct. 1908

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JAS. J. I

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THE HURLEY PRI

# The Canadian Bee Journal

Devoted to the Interests of Bee Keepers

JAS. J. HURLEY, EDITOR

Published monthly by  
THE HURLEY PRINTING CO., Brantford, Ont.

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Place of meeting: Toronto. Hall and dates to be selected by Executive.

# Clubbing List for 1908

The

Vol. 16, No. 10

To  
Old and New  
Subscribers:  
Our  
Clubbing List  
for 1908  
includes the  
following  
Remarkable  
Offers:  


WE WILL SEND		
<b>The CANADIAN BEE JOURNAL</b>		
WITH		
The British Bee Journal, \$1.50..	For \$2 00	
Gleanings in Bee Culture, \$1....	" 1 95	
The American Bee Journal, \$1...	" 1 50	
Bee-Keepers' Review, \$1 .....	" 1 75	
The American Bee-Keeper, 50c...	" 1 40	
Progressive Bee-Keeper, 50c.....	" 1 35	
Irish Bee Journal, 36c.....	" 1 25	
The Herald (Montreal).....	" 1 50	
Montreal Weekly Witness, \$1.00.	" 1 50	
Montreal Daily Witness.....	" 2 75	
Northern Messenger.....	" 1 35	
Wide World, \$1.50.....	" 1 75	
Family Herald and Weekly Star, \$1	" 1 75	
Canadian Poultry Review, 50c...	" 1 40	
The Breeders' Advocate, 50c. ..	" 1 40	
Farmers' Advocate, \$1.50 .....	" 2 25	
Weekly Sun, \$1. ....	" 1 75	
News (Daily) Toronto .....	" 2 10	
The Home Journal ....	" 1 35	
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**\$3.00**

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**The Canadian Bee Journal**  
Brantford, Canada

With this issue our second year we found the low ebb. It was printing. We are that our first factory. We are friends for nearly the members' Association the Department mention should Mr. Byer and I contributed art we are conscious but we hope to time. We wish assisted us in the year. We trust year our subscribers freely. We shall the C.B.J. use as soon as circumstances make still further contemporaries, and encourage thanks.

In a private letter brood inspectors sentence: "It is a few colonies ignorant of their going to be (or fier in stamping is, unfortunately in this statement idea that bees selves, and make knowledge they per care of bees. a bee book or

Oct. 1908

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# The Canadian Bee Journal

PUBLISHED MONTHLY

Vol. 16, No. 10.

OCTOBER, 1908

Whole No. 524

With this issue of the C.B.J. we begin our second year as Editor and Publisher. We found the Canadian Bee Journal at a low ebb. It was not paying its cost of printing. We are happy to say, however, that our first year has been most satisfactory. We are indebted to our many friends for numerous courtesies, particularly the members of the Ontario Bee-keepers' Association, Mr. Hodgetts and the Department of Agriculture. Special mention should be made of Mr. McEvoy, Mr. Byer and Mr. Brown and others for contributed articles. As for ourselves, we are conscious of many shortcomings, but we hope to remedy this defect with time. We wish to thank all who have assisted us in the task during the past year. We trust that during the coming year our subscribers will contribute more freely. We shall do our utmost to make the C.B.J. useful and profitable, and, as soon as circumstances will justify it, will make still further improvements. To our contemporaries, for their kind references and encouragement, we extend our thanks.

\* \* \*

In a private letter from one of the foul brood inspectors appears the following sentence: "It beats all how many keep a few colonies of bees and are totally ignorant of their management. This is going to be (or is indeed) the main barrier in stamping out foul brood." There is, unfortunately, a great deal of truth in this statement. Such people have an idea that bees can take care of themselves, and make no effort to acquire the knowledge they should have to take proper care of bees. One dollar invested in a bee book or bee paper would be re-

turned to them many times, but it is difficult to convince them of the fact. Herein lies one of the greatest dangers for the nursing and spread of foul brood. Such bee-keepers cannot be too strongly urged by those of experience who come in contact with them to invest in some bee literature.

\* \* \*

If you have any light colonies, or any with the last batch of brood just hatched out, be sure and feed them well before putting away for winter. When the last batch of brood hatches from the centre of the brood-nest, the bees should be fed so as to fill all these cells. Or if you have full frames of honey, take out the empty ones and replace with the full ones. The weather during September has been unusually warm, which will, no doubt, have the effect of prolonging brood-rearing. Late feeding will therefore be necessary to store those cells from which the last brood has hatched. Select a warm day or evening for this purpose. It is the centre of the hive that particularly needs the food. This is their first aid during the real cold weather. The honey in the outer frames will then be available in early spring when the cluster has broken and brood-rearing begins. Thousands of dollars are annually lost by not giving this matter attention. The experienced bee-keeper need not be told this, but we fear there are many—as indicated by the excessive winter losses of the past few years—who, if they do know, do not give it sufficient attention. We want to be able to say next spring that it is no fault of the C.B.J. if bees starve or die from lack of stores within their reach this winter.

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ALL FOR

**\$2.50**

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**\$3.00**

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Unite weak or queenless colonies. Better to have one good colony in the spring out of the bunch than lose them all.

\* \* \*

Now is the time to sell your honey. Do not hold it over. Cultivate the home market. It is surprising how much can be sold if you make a little canvass.

\* \* \*

Thin syrup is very good for spring feed, but not for winter stores. Two of sugar to one of water will be found about right for winter. Feed rapidly and feed it warm.

\* \* \*

We wish to extend our heartfelt sympathy to the family of Mr. Samuel Wood, of Nottawa, whose death took place July 22nd last. He was in his 88th year. He was a valued member of the Ontario Bee-keepers' Association, and will be greatly missed.

\* \* \*

We noticed an article in the Toronto World, on its agricultural page, in reference to red clover. It was stated that it was very short of seed this year, owing largely to the lack of the humble bee. It was recalled how the average school-boy loves to rob a "bumble bee's nest." It was suggested that this bee be protected by law, as are many useful birds. We think the idea a good one. The value of the humble bee to the agriculturist is not sufficiently recognized.

\* \* \*

From the columns of the Irish Bee Journal we learn that the Irish bee-keepers are jubilating over the passage of a foul brood law for that country. It appears that the law is not applicable to England or Scotland. Unlike the Canadian law, it carries with it the principle of compensation for the destruction of any "bees, articles or appliances." We hope our Irish friends will find the law helpful and encouraging.

The annual convention of the Ontario Bee-keepers' Association will be held on Wednesday, Thursday and Friday, Nov. 11th, 12th and 13th, in the York County Council Chambers, Toronto. Mr. A. S. Miller, of Providence, R. I., will read papers on "Side Lights on Marketing" and "Short Cuts in the Apiary." On the programme also appear the names of Mr. Bayless, of Brantford; Mr. Timbers, Cherrywood; Mr. Hershiser, Buffalo; Mr. A. McGill, of the Inland Revenue Department, Ottawa, will read a paper on "Honey Adulteration." It is to be hoped that a large attendance will signalize the meeting of 1903.

\* \* \*

The Fifth Annual Ontario Horticultural Exhibition will be held in Toronto on Nov. 10th to 14th, in St. Lawrence Arena. A very extensive and valuable prize list has been prepared. In conjunction with this will be held the Honey Show, the rules and prize list of which appears in another column. Mr. Hodgetts writes that it has been decided to open the show a day earlier, so as to get the Thanksgiving crowd on the 9th. This will mean that exhibitors—bee-keepers included—will be required to have their exhibits in place by 7 o'clock on Monday evening. They will be well repaid by the extra sales that they will have on this day.

\* \* \*

Canada, it seems, imports honey, and the quantity is increasing at a very considerable rate. Away back in 1888 it amounted to the modest quantity of barely 19,000 pounds, bought at a cost of £600. This has increased to 621,000 pounds, valued at £9,000. "Twenty thousand five hundred and ten pounds of the above came from Great Britain, and we (Editor C.B.J.) have a suspicion that much of it is a trans-shipment of tropical honey, as the price is only a trifle over 5.7 cents per pound. We do not believe that British honey can be sold for this price." Of course it cannot. Threepenn

honey is not grown here, moreover, we have honey to export and we import to the value of £60,000 year.

Mr. Hill, in his experience of the fruits of the apiary, will not lead on those who are in bee-keeping. I desire to be against it. Yet without bees during the last few years, I shall not be able to remain in the world of pleasure. I am very fond of bees. "For I have learned to love them." The true value of bees is like one of the truest things that responds to this.

One Wise Man in the Canadian Bee Journal says that beekeepers do not do justice to the case of Mr. Hill. His name deserves that of the one who has made Canada. It is the same as the frequently applied name of the sellers. Our new advertising campaign has times wonder why we must think of us.

"British Honey in Canada.—Thus the total value of the honey imported from Great Britain is £1,172.00, a trifling amount. We do not

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honey is not grown in these islands, and, moreover, we have no genuine British honey to export to our colonies. Why, we import to the value of from £30,000 to £60,000 yearly.—D.M.M., in British Bee Journal.

\* \* \*

Mr. Hill, in his very last editorial, gives us the fruits of his lengthy and extensive experience that bee-keeping as a specialty will not lead on to fortune. "As a last word to those who contemplate embarking in bee-keeping as a money-making venture, I desire to go on record as advising against it. Yet as I have never been without bees during the past twenty-five years, I shall not be without an apiary while I remain in the flesh; for, as a side issue, they are profitable and afford a world of pleasure to one who, like myself, is very fond of them." A great writer has said: "For those who have once learned to love them, a summer without bees is like one without birds and flowers." The true bee-keeper's heart responds to this sentiment.—D.M.M., in British Bee Journal.

\* \* \*

**One Wise Man in Canada.**—The Canadian Bee Journal, complaining that bee-keepers do not advertise their honey for sale, points to one brilliant exception in the case of Mr. Angus McLellan, whose name deserves world-wide publicity as that of the one wise bee-keeper in Canada. It is the same over here. We are frequently applied to for names of honey sellers. Our never-varied reply is: "See our advertising columns," and we sometimes wonder what our correspondents must think of us!—Irish Bee Journal.

\* \* \*

**"British Honey" at 2½d. per lb in Canada.**—Thus the Canadian Bee Journal: "20,510 pounds of honey came from Great Britain. There was paid for it \$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 await their comments with much interest." All that we have to say is, that if the article in question was genuine British or Irish honey, the sellers have qualified for admission to Bedlam.—Irish Bee Journal.

\* \* \*

**"A Good Idea for Watering."**—Under this heading the Canadian Bee Journal transfers to its columns from our issue of June, 1908, page 18, Mr. J. Pearman's description of his water fountain. In the most friendly spirit we suggest to Editor Hurley that it was through an oversight that he omitted the usual acknowledgment to Mr. Pearman and ourselves. Editor Hurley, since he took over the Canadian Bee Journal, has done splendid work. We look forward with much interest to the arrival of his paper every month.—Irish Bee Journal. [We humbly beg your pardon! It was indeed through an oversight. The idea was a capital one, and both you and Mr. Pearman must have the credit. We are glad you have called our attention to it, as it permits us to make reparation.—Ed.]

\* \* \*

Bee-keepers the world over will be grieved to learn of the death of E. W. Alexander. His was an original and experimental mind, and did much for the promotion of new methods in bee-keeping.

\* \* \*

Let there be a big rally at the Ontario Bee-keepers' Association in Toronto next month. It will pay you.

\* \* \*

Mr. J. L. Byer reports that he has found that the European or Black brood is not so widespread as at first supposed in the East. From what he reports, however, it is bad enough, and we trust that his timely discovery will cause a check to its spread.

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Notes and Comments

(By J. L. Byer)

Referring again to the European or Black brood mentioned in Sept. C.B.J., I might say that since writing those notes I have again visited the infected territory and am pleased to say that the outbreak is not as widespread as we first thought was the case. But, wherever the disease has broken out it has made nearly a clean sweep, and in the majority of cases it was only possible to save a few colonies. As an example of the progress of the disease in infected apiaries, the following figures concerning three large yards close together are given: One yard of 110 colonies reduced in a few months to 23; another of 160 down to 21, and another of 75 down to 6. The men owning the apiaries are first-rate bee-keepers, and everything was done that it was possible to do, with the exception that valuable time was wasted in trying the Alexander system of requeening to cure the disease. It is generally believed that a good honey flow checks this disease, but this is not the case in the present Ontario outbreak. The flow in that locality has been extra good this year, yet colonies that were very strong in the spring, and contracted the disease later in the season, did not store hardly a pound of honey, and the brood-nests in August and September were simply rotten. This condition would apply to whole apiaries. As referred to in September C. B. J., the writer does not believe with Mr. House, of New York State, that this disease is so widespread in Ontario, because it is so prevalent that its presence would soon be ascertained, regardless of what name we should call the pest. While there is some danger of confusing the early stages of this disease with ordinary chilled, starved or neglected brood, yet the advanced stages are entirely different and so pronounced that no one should make the mistake. If the bee-keeper should find whole sheets of unsealed larvæ dead or

dying, a dark tint showing plainly instead of the pearly white, it is time to be suspicious. If, later, the dead larvæ settle down into irregular scales, a few of the more advanced forming a jelly-like mass, that has a sickening odor when disturbed, he may be pretty sure that it is the genuine article. In no way does it resemble ordinary foul brood, and for that reason it is more apt to gain a foothold before its deadly presence is known. Would advise any bee-keeper who suspects the presence of this disease in his apiary to send samples of the comb in tin packages, to Dr. Phillips, of Washington, D.C. He will subject sample to bacteriological test and forward conclusions at once. Let me assure readers of the C.B.J. that the foregoing has not been written from any other motive than simply to put bee-keepers on their guard, and it was only after consulting bee-keepers in the infected territory that I consented to make the matter so public. We have had considerable experience with foul brood (ordinary) in one of our own apiaries a few years ago, and in quite a few other yards during past two years, and can truthfully say that, while we do not court its presence, yet, thanks to Mr. McEvoy's now well-known treatment, we have no terror of the disease. On the other hand, we do dread this Black brood, and, in our estimation, it is many times more destructive than the old-style article.

A NEAT ONTARIO APIARY

[J. L. Byer, in American Bee Journal.]

The picture shown on next page is the apiary of J. W. Free, of Ontario. It has been the writer's privilege to visit a large number of apiaries during the past two seasons, many of which are kept in good condition, yet without exception this apiary is, all things considered, one of the very finest I have seen. The hives all face the south on a gently sloping, close-mown lawn, and everything "has a place and is in its proper place." That

Oct. 1908

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Streetsville. Brantford. D, Claude. TTS, Sec.

STATE BEE IATION

his Association, on Nov. 12th not yet com-

30 p.m.: Lead- E. F. Phillips Apiculture in

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their crop of honey was good goes without saying. The picture was taken this year just before extracting was started.

By the way, I sampled the honey, and at the time wished for the presence of some of the bee-keepers who contend that honey is just as good if extracted before being ripened on the hives. The product of this yard, this year, is almost water-white, waxy, and **honey** in the proper sense of the word.

Mr. J. W. Free is shown at the left, while away to the right can faintly be

nuclei occupy a standard hive, and with a wire-cloth bottom, these nucleus hives are placed right on top of strong colonies. While no effort has been made as yet to rear queens in a commercial way, I am greatly mistaken if Mr. Free will not be heard from in that line in the near future.

While visiting the apiary, the owners were thinking of requeening largely with golden stock. I advised strongly against such a course, at least in a wholesale way. I am greatly mistaken if a limited



Apiary of J. W. Free, of Ontario

discerned the figure of his father, Mr. Wm. Free, whose hearty welcome to the writer will not soon be forgotten. Mr. Free is also a farmer as well as a successful bee-keeper, which gives the lie to the oft-expressed opinion that a farmer necessarily keeps his bees in a sloven condition. All the bees are of the leather-colored Italian strain, and I was struck with the uniform condition of the yard.

Mr. Free has been very successful in queen-rearing and runs some 30-odd nuclei for this purpose. Three of these

trial of the "beauties" will not prove the wisdom of such advice.

The other picture shows Mr. Free on the right, and his uncle, Mr. Warrington Scott, on the left, as they started operations on the jumbo colony, all the supers full of honey on the hive being the product of that colony. Mr. Scott is an expert bee-keeper and mechanic, all the hives and fixtures having been made by him. If I am correct, I believe Mr. Scott has a share in this apiary, and Mr. Free is free to acknowledge that much of his

success has been such a very good and an apt scholar works wonders, thing else.

These pictures Scott, who, by (amateur) photography would put to special.



Referring to the high, speaking to the opinion that would have been seen three supers to the and some extracting flow. He was inclined, while I would side, I feel convinced was a little overdone best results.

success has been due to his having had such a very good teacher. A good teacher and an apt scholar is a combination that works wonders, in bee-keeping as in anything else.

These pictures are the work of Mr. Scott, who, by the way, is an enthusiastic amateur photographer, although his work would put to shame many of the professionals.

But say, after a couple of years of short crops, a yard in the condition like the one shown, goes a long way towards stirring up one's enthusiasm to fever heat again!

Mr. Byer writes the C.B.J. later:

Since the foregoing notes re Mr. Free's apiary were written, the crop from buckwheat and boneset, principally the latter,



An 8-Super Colony in Mr. Free's Apiary

Referring to those hives tiered up so high, speaking to Mr. Scott, I ventured the opinion that perhaps more honey would have been secured if not more than three supers to the hive had been used, and some extracting been done during the flow. He was inclined to agree with me, and, while I would sooner err on the safe side, I feel convinced that the tiering up was a little overdone to secure the very best results.

has been harvested, and that skyscraper colony shown in picture yielded for the season 418 pounds of honey. Besides this, the half-depth body was drawn from foundation, and is now solid with honey, which will be left on for winter. The queen-excluder was above this half-depth body and through the clover season was about solid with brood, as the brood-nest was equal to about twelve L. frames. The whole apiary averages close on to

200 pounds per colony for the season, eighty or more per colony being gathered from the boneset—the first instance I have met of such a large yield from that source. Our own yield of some sixty pounds per colony all told, from buckwheat and clover, makes me feel small, yet of three lean years in succession in our locality this year is the best, so perhaps next year we may again get back to our usual 100 pounds per stock.

#### PRIZE WINNERS AT TORONTO FAIR

Sec. 1.—Best and most attractive display of 50 lbs. of extracted granulated Clover Honey, in glass, 25 points for quality, 75 points for display: 1st, D. Anguish, Lambeth; 2nd, G. Laing, Milton West; 3rd, A. Laing, Woodstock; 4th, E. Grainger & Co.

Sec. 2.—Best and most attractive display of 50 lbs. of extracted granulated Linden Honey, in glass, 25 points for quality, 75 points for display: 1st, D. Anguish; 2nd, G. Laing; 3rd, E. Grainger & Co.

Sec. 3.—Best display (Clover, Linden, Buckwheat or Thistle) of 300 lbs. of liquid extracted Honey, not less than 150 lbs. must be in glass, quality to count 80 points, display 20 points: 1st, D. Anguish; 2nd, G. Laing; 3rd, A. Laing; 4th, E. Grainger & Co.

Sec. 4.—Best 300 lbs. (Clover, Linden, Buckwheat or Thistle) of Comb Honey in sections, quality to count 100 points, display 20: 1st, D. Anguish; 2nd, Mrs. D. Anguish; 3rd, A. Laing; 4th, E. Grainger.

Sec. 5.—Best 24 sections of Comb Honey (any variety), quality to be considered, clean sections and best filled: 1st, A. Laing; 2nd, E. Grainger & Co.; 3rd, D. Anguish; 4th, G. Laing.

Sec. 6.—Best 100 lbs. of extracted liquid Linden Honey, in glass: 1st, G. Laing; 2nd, E. Grainger & Co.; 3rd, D. Anguish; 4th, Mrs. D. Anguish.

Sec. 7.—Best 100 lbs. of extracted liquid Clover Honey, in glass: 1st, G. Laing; 2nd, A. Laing; 3rd, E. Grainger & Co.; 4th, D. Anguish.

Sec. 8.—Best 100 lbs. of extracted liquid, A.O.V., in glass: 1st, G. Laing; 2nd, E. Grainger & Co.; 3rd, A. Laing; 4th, D. Anguish.

Sec. 9.—Best display of 100 lbs. of extracted liquid Honey, any kind, display to count 80 points: 1st, G. Laing; 2nd, D. Anguish; 3rd, A. Laing.

Sec. 10.—Best 20 lbs. of extracted liquid Clover Honey, in glass: 1st, A. Laing; 2nd, E. Grainger & Co.; 3rd, G. Laing; 4th, James Morley.

Sec. 11.—Best 20 lbs. of extracted liquid Linden Honey, in glass: 1st, James Morley, Milton West; 2nd, G. Laing; 3rd, E. Grainger & Co.; 4th, E. M. Husband, Delaware.

Sec. 12.—Best 20 lbs. of extracted liquid Buckwheat Honey, in glass: 1st, F. W. Krouse, Guelph; 2nd, E. Grainger & Co.; 3rd, G. Laing; 4th, D. Anguish.

Sec. 13.—Best display of 200 lbs. Comb and extract honey suitable for a grocer's window or counter, space to be occupied not to exceed 6 feet square by 4 feet high:

1st, E. Grainger & Co.; 2nd, G. Laing; 3rd, A. Laing.

Sec. 14.—Best and most attractive display of Beeswax, not less than 10 lbs.: 1st, D. Anguish; 2nd, G. Laing; 3rd, E. Grainger & Co.

Sec. 15.—Best 10 lbs. Beeswax, soft, bright yellow wax to be given the preference: 1st, M. B. Trevorrow, Meadowvale; 2nd, G. Laing; 3rd, D. Anguish; 4th, E. Grainger.

Sec. 16.—Best exhibit of Italian bees, with queen, in single comb observatory hive: 1st, E. Grainger & Co.; 2nd, F. W. Krouse; 3rd, D. Anguish.

Sec. 17.—Best exhibit of Carniolan, with queen, in single comb observatory hive: 1st, E. Grainger & Co.; 2nd, G. Laing; 3rd, F. W. Krouse.

Sec. 18.—Best exhibit of Caucasian bees, with queen, in single comb observatory hive: 1st, E. Grainger & Co.; 2nd, George Laing.

Sec. 19.—Best and most practical new invention for the Apiarist, never shown before at an Exhibition of this Association: 1st, A. Laing; 2nd, D. Anguish; 3rd, E. Grainger & Co.; 4th, G. Laing.

Sec. 20.—To the Exhibitor making the largest, best and most attractive display: 1st, D. Anguish; 2nd, G. Laing; 3rd, E. Grainger & Co.; 4th, A. Laing.

#### PROGRAMME OF ONTARIO BEEKEEPERS' CONVENTION

NOVEMBER 11-13

President's Address—F. J. Miller, London, Ont.

Reply, Vice-President—Wm. Couse, Streetsville, Ont.

Address, "Side Lights on Marketing," A. C. Miller, Providence, R.I.

Question Drawer—John Timbers, Cherrywood, Ont.

Address, "Re-queening of all strong colonies with queens of the current year's rearing as a measure to perfect swarming," O. L. Hershiser, Kenmore, N.Y.

Ten-minute reports from Apiary Inspectors.

Address, "Adulteration of Honey," A. McGill, Inland Revenue Department, Ottawa.

Address, "Short Cuts in the Apiary," A. C. Miller, Providence, R.I.

Annual election of officers.

Reports of Committees.

Address, A. C. Miller (topic to be selected).

Address, "The Use of the Uncapping Machine," Wm. Bayless, Brantford.

P. W. HODGETTS, Sec., O.B.K.A.

## Ontario

1. All exhibitors holding the Exhibition
2. Exhibitors
3. All entries
4. All entries are to be placed in the Parliament Building
5. Exhibitors to be paid 10 cents for each exhibit
6. No exhibit to be removed until the exhibition is closed
7. A discount of money taken by exhibitors
8. Exhibits to be placed in the Section where they are to be exhibited
9. Two or three entries in any one section

1. Best twenty and finish total 100
2. Best five doz finish to 100 point
3. Best one doz finish to 100 points
4. Best 200 lbs 100 lbs in
5. Best display
6. Best 10 lbs
7. Best 10 lbs
8. Best 50 lbs
9. Best display able for a in section packages
10. Best 25 lbs
11. Best two doz
12. Best ten lbs
13. Best exhibit the most domestic
14. Best and mc keepers' us
15. Best display c visitors . .
16. Best method showing tv
17. Best packages honey, shc same . . . .
18. Best package / package to

# Ontario Horticultural Exhibition and Honey Show

## RULES AND REGULATIONS—PRIZE LIST

1. All exhibitors must be or become members of one or other of the Associations holding the Exhibitions.
2. Exhibitors must be bonâ fide bee-keepers.
3. All entries must be made on printed forms accompanying the prize list. These forms are to be signed and filled out by the exhibitor and sent to P. W. Hodgetts, Parliament Buildings, Toronto, before Tuesday, November 3rd, accompanied by a fee of 10 cents for each entry.
4. No exhibitor will be allowed to make more than one entry in each section.
5. Exhibitors may sell their honey in unbroken packages, but must keep exhibits intact until the close of the Show.
6. A discount of 10 per cent. will be deducted from the total amount of prize money taken by an exhibitor winning \$50 or over in prizes.
7. Exhibits will be received and cared for by the Superintendent of the Honey Section where the owner cannot accompany the same.
8. Two or more members of same family will not be allowed to make individual entries in any one section.

**TARIO BEE-KEEPERS' ASSOCIATION**

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Sec., O.B.K.A.

Section	1st	2nd	3rd	4th
1. Best twenty dozen of comb honey in sections (quality and finish to count 80 points, display 20 points, total 100 points) .....	\$15	\$12	\$9	\$6
2. Best five dozen of comb honey in sections (quality and finish to count 80 points, display 20 points, total 100 points) .....	8	6	4	2
3. Best one dozen of comb honey in sections (quality and finish to count 80 points, display 20 points, total 100 points) .....	4	3	2	1
4. Best 200 lbs of extracted liquid honey, to be displayed 100 lbs in glass, balance in tins.....	12	9	6	4
5. Best display of 50 lbs extracted liquid honey in glass.....	5	4	2	1
6. Best 10 lbs extracted liquid clover honey in glass....	4	3	2	1
7. Best 10 lbs extracted liquid linden honey in glass...	4	3	2	1
8. Best 50 lbs of extracted granulated honey.....	6	4	3	2
9. Best display of 200 lbs comb and extracted honey suitable for a grocer's window or counter (comb to be in sections, extracted in glass jars, tins or other packages suitable for general grocery trade).....	10	7	4	2
10. Best 25 lbs extracted buckwheat honey in glass.....	4	3	2	1
11. Best two dozen of buckwheat honey in sections.....	4	3	2	1
12. Best ten lbs of beeswax.....	3	2	1	..
13. Best exhibit of six articles containing honey, showing the most practical methods of using honey for domestic purposes .....	4	3	2	1
14. Best and most practicable new invention for bee-keepers' use .....	5	3	2	1
15. Best display of bees and queen which may be seen by visitors .....	10	8	6	4
16. Best method of crating and packing comb honey, showing twelve-section cases ready for shipment..	7	5	3	2
17. Best packages for long-distance shipment of extracted honey, showing method of packing and crating same .....	7	5	3	2
18. Best package for retailing extracted granulated honey, package to be filled.....	3	2	1	..

### PROGRAMME FOR THE NATIONAL CONVENTION

The National Bee-keepers' Association will hold its annual convention, October 13, 14 and 15, in the Sun Palace of the Wayne Hotel, at the foot of Third Street, Detroit, Mich. Headquarters will be at the Wayne Hotel, where the rates to bee-keepers are \$2.50 per day, when two persons occupy the same room. There are plenty of other hotels in the vicinity, where the rates vary from \$1.25 to \$2.25 per day.

The Michigan State Bee-keepers will hold a session at the same place on the afternoon of the 13th, beginning at 2 p.m. The first regular session of the National will be on the evening of the 13th.

#### Oct. 13—First Day—Evening Session :

"Demonstration of Handling Live Bees in a Cage," by E. R. Root, of Medina, O.

"Bee-keeping of Hawaii," by Prof. E. F. Phillips, of the Apicultural Bureau, of Washington, D.C. This lecture will be illustrated by stereopticon views secured by Prof. Phillips during his recent trip to Hawaii.

"Moving Picture Exhibition," by E. R. Root, of Medina, O. To run this film through the lantern requires about ten minutes, and it gives a fair idea of some of the "stunts" they do in England when handling bees; some of them are decidedly mirth-provoking.

#### Oct. 14—Second Day—Morning Session :

8 a.m.—President's address.

"The Bacteria of Bee Diseases," by Dr. G. F. White, of the Apicultural Bureau at Washington, D.C.

"How to Detect and Know Bee Diseases," by W. D. Wright, of Altamont, N.Y., one of the New York Inspectors of Apiaries.

Recess of fifteen minutes.

"Getting Rid of Foul Brood With the Least Financial Loss," by R. L. Taylor,

of Lapeer, Mich., Inspector of Apiaries for Michigan.

General discussion on diseases of bees.

Question box.

Adjournment.

#### Oct. 14—Second Day—Afternoon Session :

2 p.m.—Debate on the following: "Resolved, That an eight-frame Langstroth hive is preferable to a larger hive in extracted honey production." Affirmative taken by S. D. Chapman, of Mancelona, Mich., and the negative by R. F. Holtermann, of Brantford, Ont. Each contestant allowed to speak twice, using not more than fifteen minutes each time.

General discussion of the subject.

Question box.

Recess of fifteen minutes.

"Turning Winter Losses Into Profit," by W. J. Manley, of Sandusky, Mich.

Question box.

Adjournment, and members photographed in a group.

#### Oct. 14—Second Day—Evening Session :

7 p.m.—This session is to be in a lighter vein—as the story is to more solid reading. It is to be in imitation of the toasts that usually follow a banquet—that is, responses to sentiments. The speakers are to remain unknown until announced by the toastmaster, but the list of topics is as follows:

Securing Legislation for Bee-keepers.

Rough Spots in the Pathway of an Inspector of Apiaries.

Late Apicultural Inventions.

The Possibilities of Future Bee-keeping.

The Cost of Honey Production.

Bee-keepers as Temperance Reformers.

The Friendship of Our Fraternity.

Adjournment.

#### Oct. 15—Third Day—Morning Session.

8 a.m.—"Locating Apiaries," by E. I. Townsend, of Remus, Mich.

Discussion.

Question box.

Recess of fifteen minutes.

Question  
Adjournment

Oct. 15—Third

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Question box.  
Adjournment.

Oct. 15—Third Day—Afternoon Session:

2 p.m.—“How to Secure Good Prices for Honey Even in Years of Bountiful Yields,” by O. L. Hershiser, of Kenmore, New York.

Discussion.

Recess of fifteen minutes.

Question box.

Adjournment to see honey extracted with an eight-frame Automatic Extractor, with gasoline engine as power.

The foregoing is simply an outline, a sort of skeleton, which will be filled out with good things.

#### Premiums Offered at the National Convention

Through the generosity of the leading manufacturers and dealers the following liberal premiums are offered for the display of bees, honey and wax at the coming National Convention:

Best and largest display of single-comb nuclei of different varieties of bees, accompanied by queens, condition of bees, purity of race and beauty of hives to be the competing points. First premium, 2,000 No. 1 sections, by the C. B. Lewis Co., Watertown, Wis.; second premium, \$5 Italian breeding queen from the Medina apiary of the A. I. Root Co.; third premium, two years' subscription to the Canadian Bee Journal, by the Hurley Printing Co., of Brantford, Ont.

Best ten sections of comb honey, completeness of filling of section, evenness of surface of comb, completeness of capping, freedom from travel-stain, and general neatness and appearance to be the competing points. First premium, 1,000 No. 1 sections, from the G. B. Lewis Co., of Watertown, Wis.; second premium, cloth-bound copy of the A B C and X Y Z of Bee Culture, by the A. I. Root Co.; third premium, one year's subscription to the Canadian Bee Journal, by the Hurley Printing Co.; and one year's subscription

to the American Bee Journal, by Geo. W. York & Co., Chicago, Ill.

Best ten pounds of liquid extracted honey, quality and manner of putting up for market to be considered. First premium, 1,000 No. 1 sections, by the G. B. Lewis Co., of Watertown, Wis.; second premium, Jumbo copper smoker, by the A. I. Root Co.; third premium, Root Standard tin smoker, by W. D. Soper, of Jackson, Mich., and one year's subscription to the American Bee Journal, by Geo. W. York & Co.

Best ten pounds of granulated honey, quality, including fineness and smoothness of grain and manner of putting up for market to be considered. First premium, 1,000 No. 1 sections, by the G. B. Lewis Co., of Watertown, Wis.; second premium, Standard tin smoker, by the A. I. Root Co.; third premium, one year's subscription to the American Bee Journal, by Geo. W. York & Co.

Best ten pounds of beeswax, color texture and beauty of the cake or cakes in regard to shape to be considered. First premium, one \$5 Italian breeding queen from the Medina apiary of the A. I. Root Co.; second premium, one year's subscription to the American Bee Journal, by Geo. W. York & Co.; third premium, one Root Hive Tool, by the A. I. Root Co.

The most important late apicultural invention that has not before been awarded a premium. First premium, \$5 worth of bee supplies, “Root Quality,” by M. H. Hunt & Son, of Lansing, Mich.; second premium, one full leather-bound copy of the A B C and X Y Z of Bee Culture, by the A. I. Root Co.; third premium, one copy of Advanced Bee Culture, by W. Z. Hutchinson, Flint, Mich., and one year's subscription to the American Bee Journal, by Geo. W. York & Co.

For the best single section of comb honey, A. G. Woodman & Co., of Grand Rapids, Mich., offer one Woodman Protection Hive; for the second best single

section they offer 1,000 No. 1 Lewis sections; for the third best, one Advanced Bee Veil.

For the best single section of honey stored in a Marshfield section box, W. D. Soper, of Jackson, Mich., offers 500 No. 1 Marshfield sections. For the best ten pounds of comb honey produced with Dittmer foundation, Mr. Soper offers three pounds of Dittmer's extra thin foundation.

The judge to pass upon the above exhibits will be appointed by the President.

#### Men and Women Who Expect to Attend the National Convention

The following persons have taken the pains to write and tell me that they expect to attend the coming National Convention at Detroit:

Aspinwall, L. A. and wife.  
 Abbott, E. T.  
 Ahlers, H. C. and wife.  
 Barb, J. S.  
 Brovald, A. C.  
 Byer, J. L.  
 Carr, E. G.  
 Coveyou, Elias E.  
 Cavanaugh, F. B. and wife.  
 Chrysler, W. A.  
 Chapman, S. D.  
 Cameron, R.  
 Carter, Wm.  
 Cutting, H. D.  
 Dickenson, E. and wife.  
 Darby, M. E.  
 France, N. E., wife, daughter and son.  
 Fowls, Chalon and wife.  
 Forbes, W. E.  
 Furnass, W. C.  
 Frazier, W. S.  
 Gute, Martin  
 Hutchinson, W. Z. and wife.  
 Hutchinson, Elmer and wife.  
 Hilton, Geo. E. and wife.  
 Holtermann, R. F.  
 Harmer, Walter  
 Hunt, E. M.  
 Hurley, Jas. J.  
 Hand, J. E.  
 Hershiser, O. L.  
 Huber, L. B.  
 Lewis, J. L. and wife.  
 Muth, Fred. W. and wife.  
 McKnight, W. L.  
 Miller, F. J. and wife.  
 McEvoy, Wm.

McDonald, Fred. B. and wife.  
 Myers, Wm.  
 Myers, Thos.  
 Manley, Wm. J.  
 Manley, Herbert J.  
 Mandeville, M.  
 Pressler, E. E.  
 Pettit, S. T.  
 Phillips, E. F.  
 Root, A. I.  
 Root, E. R.  
 Root, H. H.  
 Smith, C. F. and wife.  
 Sims, John S.  
 Smith, F. H. and wife.  
 Soper, W. D.  
 Strittmatter, F. J.  
 Tyrrell, E. P.  
 Tayler, R. L. and wife.  
 Townsend, E. D. and wife.  
 Tyrold, John  
 Thompson, Decker  
 Werner, Louis  
 Wilcox, Franklin  
 White, W. G.  
 Williamson, Geo. T. and wife.  
 Wood, A. D. D.  
 Wright, W. D.  
 York, Geo. W.

Let no one think that the foregoing are all of the persons who will be present, as not one person in a dozen will take the trouble to write the Secretary and say that he is going; besides, many don't make up their minds to go until the very last moment. Notice the number of ladies that are to be present. There will be more ladies present at this convention than have ever before graced a convention with their presence. Come and bring your wife.

W. Z. HUTCHINSON, Sec., N.B.K.A.

#### OWNERSHIP OF SWARMS

##### A Legal Opinion Thereon

[By E. A. C. Lloyd, Barrister-at-Law.]

From time to time certain legal queries have appeared in the columns of this journal with reference to the ownership in swarms, and also with regard to a beekeeper's right of recovering swarms which may have alighted on another person's property. It is with the desire to en-

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lighten bee-keepers on these points that the lines which follow have been written.

The law relating to bees is of very ancient origin, our own law on the subject being based on the Roman law. Under the Roman law bees were classed as among animals *feræ naturæ*, and were, like other animals, *res nullius* until they were captured, and it is as such that they remain to-day under our own law. In animals *feræ naturæ* a man can have only a qualified property, and such can only be obtained by reclaiming them and making them tame, or by so confining them within his own immediate power that they cannot escape and use their natural liberty. This right of property in them only subsists so long as the animals are kept by him in actual possession—that is to say, if they escaped again and recovered their natural liberty his property in them instantly ceased, unless they have what is called *animus revertendi*, such as a tame hawk has.

By the Roman law the mere presence of bees on a person's land did not make them his, and if another hived the bees he became the owner, subject perhaps to an action for trespass if he entered on the ground in an illegal manner!

By our law the property in bees which have been hived and reclaimed is in the owner of the ground on which they have swarmed, and not in any person who may hive them. The Charter of the Forest (9 Hen. III., c. 13) expressly allows every freeman to take honey found within his woods. It has been said that the only ownership in bees is *ratione soli*, and the words of this charter certainly seem to afford great countenance to this doctrine. Reclaimed bees, therefore, are the subject of larceny at common law, and trespassing captors cannot make good a right to bees or honey which they may have seized. Wild bees in a tree have been held to belong to the owner of the soil where the tree stands, and it has also been held that the finding of a tree on

another person's property and marking it with the finder's initials does not make a reclamation. Both Bracton and Blackstone seem to agree that reclamation is necessary in order to obtain property in bees.

Bracton says: "Though a swarm lights upon my tree, I have no more property in them until I have hived them than I have in the birds which make their nests thereon, and therefore if another hives them he shall be their proprietor; but a swarm which fly from and out of my hive are mine, so long as I can keep them in sight and have power to pursue them." So you see if bees while unreclaimed alight on a tree they belong to the owner of the tree, but if they have been reclaimed and have taken refuge there the property in them remains in their owner, if they can be identified. The fact that they are temporarily astray, and that their owner cannot pursue them without infringing another's rights by trespassing or the like, will not affect his right of property, and an action would, therefore, lie for their unlawful detention or destruction. In questions of succession it has been laid down that bees in a hive are considered to be so appropriated to, and necessary for, the enjoyment of the inheritance that they accompany the land, and go to the heir and not to the personal representative, and that the destruction of such animals would in law be waste.

In an American case bees have been held to be in the same position as other domesticated animals, not rendering their owner liable for accidental injury apart from negligence. In the case in question a horse had been stung to death. Unfortunately there is no authoritative English decision on the point. In all probability a carrier would be exempt from liability for injury caused by bees stinging, that being an inherent vice, provided no negligence was established against him. But he will be liable if the injury is primarily due to his want of care in not remedying an obvious defect.—British Bee Journal.

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## BEEWAX AND DIGESTION

### Increasing Demand for Honey

[By Dr. C. C. Miller, in American Bee Journal.]

Dr. Bohrer (page 241) takes exception to my saying that the indigestibility of beeswax probably does no harm in any case. All right, old friend, I cheerfully accept the amendment, and agree that in cases of cancer of the stomach, as well as in some other cases of exceeding irritability, beeswax better be left out of the bill-of-fare. More than that, if you insist that there may be cases in which the best extracted honey may do harm, I'll agree to that, too.

Begging your pardon for having been so careless as to say, "Probably in no case does that do any harm," instead of saying, "Probably the cases in which that does any harm are very rare," I arise to make a few remarks upon the latter part of your article. In substance you say, "The facts I am giving—and there is no guessing in the matter—if made known to the public, can bring no harm to the sale of the products of our industry, but, on the contrary, will increase the sale of honey beyond any demand heretofore known."

To secure that unprecedented demand, would it not be well to have what you say embodied in a short article and have the publication committee of the National secure its general publication? Without taking the time for elaboration, I might suggest that the pith of it would be somewhat as follows:

"Pure honey free from all sources of irritation to the human digestive organs is by all odds the most wholesome sweet ever used by man. There are two sources of irritation to be guarded against:

"First—The poison scattered over the combs, which bees invariably expel upon the slightest jar or disturbance of the hive; although only a very few persons are susceptible to its influence.

"Second—The wax of which the honey-comb is made. It acts as an irritant to the digestive organs. But as a rule, in time it will bring about disastrous results. Men use intoxicants to excess through a long life, while very many others fall victims to their effects in a very brief period of time. And so it is with beeswax.

"Extracted honey is free from both these objections, the honey being entirely separated from the comb, and also from the poison scattered over the comb."

There, Doctor, isn't that about the thing? Looks like a pretty good antidote to the article of that man McCain immediately preceding you on page 241. His proof-of-purity seal doesn't stand a ghost of a chance against the poison-tainted-wax business. No use disputing it, when that article of yours gets the run of all the papers, I'll have to give up production of comb honey and invest in an up-to-date extractor. It's hardly like you to pull others down for the sake of pulling yourself up—in other words, knocking out my market for comb honey so you may better sell extracted—but I'm willing to stand it and change to extracted honey if by means of your pronouncement "the sale of honey will increase beyond any demand heretofore known."

Really, however, Doctor, I must confess that it isn't very clear to me just how the proposed spread of information is to increase the sale of honey. Tell a man that the bees scatter poison over the comb, and will he have a consuming desire to buy more honey than before he ever heard of such a thing? Tell him something about intoxicants, "and so it is with beeswax," and will he feel it a matter of principle to patronize the bee-keeper? I don't see the connection, do you?

If you don't mind, I'd like to ask a question or two. How do you know that bees invariably expel poison upon the slightest jar or disturbance of the hive? And how does it happen that the poison thus expelled is "scattered over the

combs," and no honey? For one that just as much an open cell of the capping of a condition of the tion of poison ra rappings? And of honey obtaine fed back to the b you be sure that the surplus?

There are those to comb honey, a that some very m Now suppose you off from buying are you sure they pounds of extract buying of comb? how the spread yo "increase beyond known" the sale Marengo, Ill.

[The good Doct awns together, roll at down to write ermination to give or all time. Discu commercial point ght. He says all e subject. From ew, however, the beeswax digestibl ould know the tr ld our peace afte

## NOTES AND PI BEGI

So my good friend er the loan of th e C.B.J. and altho her a little late fo ateful to Jock for l secure me as a able journal, and Page 285 about se m the West. Oh,

combs," and none of it gets into the honey? For one would naturally think that just as much poison would get into an open cell of honey as would settle on the capping of a cell. Doesn't the liquid condition of the honey favor the absorption of poison rather more than the solid cappings? And when the limited amount of honey obtained from the cappings is fed back to the bees, as you say, how can you be sure that they will not put it into the surplus?

There are those who prefer extracted to comb honey, and I suppose you know that some very much prefer comb honey. Now suppose you get these latter shunted off from buying comb honey altogether, are you sure they will buy just as many pounds of extracted as they have been buying of comb? In short, please tell us how the spread your "facts" is going to increase beyond any demand heretofore known" the sale of honey.

Marengo, Ill.

[The good Doctor must have set his jaws together, rolled up his sleeves, and sat down to write the above with a determination to give Dr. Bohrer his quietus for all time. Discussing the question from a commercial point of view, Dr. Miller is right. He says all this is to be said on the subject. From a scientific point of view, however, the question still remains, is beeswax digestible? It is well that we should know the truth, even though we hold our peace afterward.—Ed.]

**NOTES AND PICKINGS FROM A BEGINNER**

So my good friend once more sent me the loan of the August number of the C.B.J. and although a little stale, or rather a little late for me, yet I am very grateful to Jock for his kindness in trying to secure me as a subscriber to your valuable journal, and I note what is said on Page 285 about sending that wise man from the West. Oh, what has happened?

Has the Good Book turned a somersault, as it used to read from the East.

Yes, that Bulletin 166 will be of vast interest to us little fellows. Will these foul brood hunters tell your readers when they get home just how many foul brood colonies they found, and particularly how many was found in the County of Norfolk.

One more feather in McEvoy's hat. The Quebec Government has seen fit to send one of their inspectors to be educated by an Ontario man. Now sir, I told you so. Those Quebec fellows will get ahead of you yet, and in all probability the next move of theirs will be to move that McEvoy (whoever he may be) shall go and make his permanent home in that Province, or secure him by some means, as they have done with Robertson, Fixter and others that we could ill afford to lose.

Page 287.—We always like to read those Notes and Comments by J. L. Byer, but we would not like to be obliged to take off that 2,500 pounds of honey in one day, unless the days in his locality have more than twenty-four hours in them. We don't say he can't do it, but we have to scratch our cranium.

Mr. Editor, with your permission, I beg pardon from Mr. Anguish for even hinting that he might be connected with that Irish patriot, Daniel O'Connell, for he truly belongs to a much better family, that of David, who slew Goliath. The information given by him on page 297 is certainly interesting, as I wonder how many of your readers have taken the pains that he has done for so many years to determine the exact amount of honey stored by a colony of bees day by day during the honey flow, and giving it out for the benefit of others. I will try and have pennies enough gathered by New Year's to subscribe for your paper, so I can get in closer touch with men of his stamp and ability. He says he never expected to be President of the United States. Say, a little bird whispered in my ear that there was to be a President

elected this year for the National Beekeepers' Association, which covers a vaster territory than the United States, and if our good friend David agrees not to shoot me down like the far-famed turkey, I will nominate him for that position. Say, Dave, is it a bargain? (page 298). Well, owing to so much nonsense already written—or, rather, scribbled—we will call it a draw.

Just one word more, please, re a certain rumor which my old friend Jock heard around the corner at the grocery store. Some one said that they saw in Gleanings that pilfering toothpicks from hotel tables was now the thing, but it is hard to believe that any bee-keeper would be guilty of anything of the kind, and, of course, no bee-keeper would even suspect any foul brood inspector of doing such a small thing in order to economize.

#### TRANSLATIONS

From June Number of "Revue Universelle d'Agricole."

[By C. A. Procunier.]

#### Plurality of Queens.

It is, however, necessary that we should strive to profit by these discoveries. For my part, I have decided to put, at the earliest possible date, three queens in each of my hives. But what is the best method to follow? The Americans are still silent on this point. Here is what Alexander says:

"The greatest difficulty to surmount has been the introducing of two or more queens in our colonies. Last summer my son Frank discovered the most practical means by which 90 to 100 queens can be safely and soundly introduced, and by which they commence laying eighteen hours after the departure of the old queen (reine-mere). He wishes to make new trials next season before describing the methods, and if they give the same results there will be no difficulty in giving our colonies any number of laying queens. This will be a great step in modern apiculture."

Thus is he understood. Alexander still wishes to say nothing, but he has said enough. Have you taken the hint. The new queens lay in eighteen hours after the departure of the old queen. Therefore his son makes his hives orphans, and then he replaces the absent queen, certainly not by a single queen, but by many at a time, according to customary methods, and as the bees do not prefer one above another, they accept all. We have seen in the apiary of M. Henry that in the reunion well made all the queens live. We are, therefore, in possession of two methods of introducing a plurality of queens in each hive. Both seem excellent to me.

I beg bee-keepers who would try the introducing of many queens never to make the attempt except in great honey flow. At this time, by taking a little precaution, they will always succeed. In meagre honey flow or drought failure is almost certain.

#### Congress of Bee-keepers at the Franco-British Exposition, London

The following was the programme:

1. "Extension of Bee-keeping as an Industry," by T. W. Cowan, President of the British Bee-keepers' Association.
2. "The Influence of More Than One Queen in Each Hive," by a French bee-keeper.
3. "The Choice of a Hive," by Walter F. Reid, Vice-President of the British Bee-keepers' Association.
4. "Has the Size of the Hive Any Influence on the Crop of Honey?" by a French bee-keeper.
5. "Healing of the Sting," by Sevalle, General Secretary of Central Society of Bee-keepers, of Paris.

The value of honey imported into the United Kingdom in the month of July 1908, was £3,835.—From a Return supplied to the Irish Bee Journal by the Statistical Office, H. M. Customs, London.

#### IMPROVE

[By Frank U culture, U

Before a b in the cultiv chiefly, with pleasure and the keeping I judge that in a manner conditions a most of us a cific recomme practically cr ies, will be present, theo scheme for through a, co series of bree main purpose sideration of have reached work in the years of whi the rearing of and crosses b examinations, eral years' ex of nearly all c vation in thi considerably i a definite char factory to my ments that I ous types duri larly during t led me to som may be profit tion of breedir The subject into: First, breed; second, queens to bree employed in re the selection o

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### IMPROVEMENT OF HONEY BEES

[By Frank Benton (In Charge of Agriculture, U. S. Dept. of Agriculture).]

Before a body of practical men engaged in the cultivation of honey bees for profit chiefly, without, perhaps, excluding the pleasure and interest to be derived from the keeping and handling of these insects, I judge that a presentation of this subject in a manner such as will appeal to the conditions and limitations under which most of us are obliged to work, with specific recommendations as to what may be practically carried out in our own apiaries, will be a much better plan than to present, theoretically and abstractly, any scheme for the improvement of bees through a complicated and perhaps long series of breeding experiments. With this main purpose before me, I ask your consideration of certain conclusions which I have reached after more than forty years' work in the apiary, during over thirty years of which I have been engaged in the rearing of queen bees of various races and crosses between those races. Personal examinations, and, in some instances, several years' experience, in the native lands of nearly all of the races in common cultivation in this country, has assisted me considerably in arriving at conclusions of a definite character, and reasonably satisfactory to myself. Likewise, the experiments that I have made in crossing various types during this period, and particularly during the twenty years past, have led me to some conclusions which I think may be profitably employed in our selection of breeding stock.

The subject naturally divides itself into: First, the selection of a race or breed; second, the selection of individual queens to breed from; third, the methods employed in rearing queens; and, fourth, the selection of drones, or male bees.

#### Selection of Race or Breed

Caucasians for Beginners.—One of the first points suggesting itself to a person

about to begin the cultivation of bees is, what race or breed is best, and, while I would not suggest that one having no experience should undertake the work of improving the race or breeds which have been cultivated for so many years by those of long experience and accurate knowledge of bee life, still, the practical question arises with the beginner how he can keep to the best type, or at least approach it, while learning how further improvement may be effected. There comes also to his mind, at least in many instances, a dread of cross bees and the fearful stinging which may result from unskillful manipulation of bad-tempered races. Since, however, there exist bees so gentle as to remove all difficulties in this direction, and which are, at the same time, productive workers, comparing favorably with most others, there need be no question whatever but that the most advisable thing is for the beginner to adopt one of these races. The gentlest are the Caucasians, imported originally from the Caucasus, a Russian territory lying between the Black and Caspian Seas, partly in Europe and partly in Asia. They have been cultivated to a greater or less degree for some twenty-five years in Europe, and, although imported into the United States a number of years ago, but little has been done in the way of multiplying them and introducing them generally. Their manifest place, however, in popularizing bee-keeping in cities and towns and among the rural population, wherein fear of stings is the chief obstacle to a more or less extended introduction of bee culture, makes the Caucasian race pre-eminently one which should receive much consideration. In view of this, the United States Department of Agriculture has recently imported quite a number of breeding queens, and plans an extensive introduction and testing of this variety in various portions of the country. The most prominent particular in which they differ from other races is their gentleness. It is quite possible, without the slightest

fear of stings, to open the hives at any time during the working season, without the use of smoke and with no protection to face or hands. The bees may be given the roughest possible treatment—shaken, brushed and tumbled about, as though they were so many beans—yet no resentment will be shown. The queens are exceedingly prolific, and the workers industrious. They are, therefore, decidedly to be recommended for all novices in bee manipulation.

**Carniolans for Comb Honey.**—Should the purpose of the bee raiser be the production of the very highest grade of comb honey, Carniolan bees, or bees largely composed of this blood, are to be recommended. The qualities for which they are noted are prolificness, hardiness (both as regards the individual workers and as regards whole colonies). Their industry is marked. Their gentleness, when pure in blood, is acknowledged by all who have genuine Carniolans. In this respect they are second only to the Caucasians, and, as a race, quite in advance, in gentleness, of the best Italians.

The question might be raised here why I would not recommend, in preference to the Carniolans, the Italians, so long and favorably known in this country. While admitting that many strains of the Italians quite exceed others in productiveness, gentleness, hardiness, and honey-yielding powers, I cannot in these particulars rank them as averaging equal to the Carniolans. Their disposition to cease brood-rearing, wholly or in part, at critical times and their great predisposition toward dwindling in early spring oftentimes makes it very uncertain whether their colonies will or will not be in proper shape for the given harvest. On the other hand, the native hardiness, the race prolificness, and the steady brooding qualities of the Carniolans, enables any one who manipulates them rightly to bring them into any given harvest with a large force of field workers ready to take advantage of that harvest. They are,

therefore, to be depended upon, if managed in accordance with their race peculiarities.

While recommending Carniolans particularly for comb honey, because of the fact that they seal their completed combs in a snowy-white manner, there can be no objection to their employment in the production of extracted honey or in apiaries where both comb and extracted honey are produced. There are, however, some strains or types which, as regards absolute quantity of honey, yield more. I refer to those bees containing a greater or less percentage of eastern blood.

**Cyprio-Carniolans for Extracted Honey.**—By mating Cyprian queens to Carniolan drones a combination is produced of the prolificness, great energy in honey gathering, and general activity of the best of the eastern races, with the most hardy and prolific of the western races. The noted gentleness of the latter is also largely preserved in the cross. The loss in this combination is seen when we examine critically the solid sections of the honey produced by these workers. The somewhat watery appearance common to work of eastern bees is at once detected, and, although the quality of the honey itself is quite equal to that gathered by any bees, the appearance of the combs for a critical market is somewhat inferior. Except in this respect, and also in that the workers having eastern blood are rather more free in the use of propolis than the bees of Europe, and likewise are not always as easy of manipulation, bees of this cross are to be ranked as decidedly the most valuable and wonderful honey-producers thus far cultivated.

Bearing in mind these general hints here presented regarding types, the person proposing to breed the best bees for a given purpose will surely be able to make a suitable selection of a race or breed.

#### **Selection of Breeding Queens**

The greatest possible care should be observed in the selection of the queen

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The Stock.—I  
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**Queens**  
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mother, both as regards the queen herself  
 and also the qualities and race character-  
 istics of her progeny.  
 The Stock.—In deciding whether a  
 given queen is worthy to be the mother  
 of all, or a great part, of the queens  
 which shall head the honey-producing col-  
 onies, a critical examination of the stock  
 itself should be made. Since the prime  
 quality must necessarily be the honey-  
 gathering powers, this will receive the  
 first consideration. In estimating this, it  
 is hardly necessary for a man of experi-  
 ence to test with the scales the actual  
 number of pounds of honey produced.  
 He may judge merely by a careful com-  
 parison, during a given honey flow, of  
 the activity and relative amount of honey  
 gathered in his apiary by individual col-  
 onies. He can also see, by the general  
 activity and energy displayed by the sep-  
 arate colonies, which are doing the most.  
 Having selected those which in this par-  
 ticular meet his approval, he should  
 choose from these a colony which shows  
 the general race characteristics of the  
 breed to which it belongs. By this I  
 mean that the colony must possess, in a  
 marked degree, those important and valu-  
 able traits which have caused the selec-  
 tion of this race. Just here perhaps I  
 should differ from some others, in that,  
 instead of recommending the selection in  
 all instances of the particular colony in  
 the apiary which has yielded the most  
 honey, I might select one which had  
 given a smaller number of pounds under  
 the same circumstances than many others,  
 that which presented a uniform and well-  
 developed type of the race in question,  
 with no marked inferiority in honey pro-  
 duction. Having determined upon these  
 so important characteristics, I should  
 consider, as coming next, the gentleness  
 of the given colony. Here, invariably,  
 when other things being equal, I would select  
 the very gentlest. It should also be  
 borne in mind that this term "gentle-  
 ness," as here used, is a relative one, for  
 a colony belonging to the Cyprian race

could hardly be expected to come up to  
 any such standard in this particular as  
 the Caucasian, Carniolan, nor even the  
 Italian, taken all in all. As an illustra-  
 tion of what should be required in this  
 respect, I would state that one of the  
 tests to which I invariably subject a col-  
 ony of Carniolans whose queen I intend  
 to use as a breeder, is how well they  
 bear manipulation after dark. Of five  
 colonies whose queens and bees might  
 come up to the standard in all other par-  
 ticulars, it will usually be the case that  
 two or three will hardly meet the test of  
 manipulation at night. Standing a lighted  
 lantern or lamp on one corner of the  
 open hive, the frames are lifted, one after  
 the other, with only the use of a small  
 amount of smoke, as would be the case  
 in manipulating during the daytime. The  
 bees must remain appreciably as quiet  
 on the combs as during the daytime, and,  
 above all, must not fly in great numbers  
 toward the light. There are many other  
 tests to which they may be subjected,  
 and this is merely cited as an instance of  
 one direction in which the race character-  
 istic should be examined.

The Queen.—The queen, likewise, must  
 show, in a preëminent degree, her race  
 characteristics; that is, she must be pro-  
 lific for one of her race. This implies, if  
 she be of the Cyprian race, that she is  
 far more prolific than the average, or  
 above the best, Italian queens—more pro-  
 lific even than the largest and most pro-  
 ductive Carniolan. If, on the other hand,  
 she be of the Carniolan race, size, rotund-  
 ity of form, general robust look and ac-  
 tivity are to be considered. While it is  
 expected that she will be more prolific  
 than an Italian queen, yet equal prolific-  
 ness with any of the eastern race is not  
 counted upon, notwithstanding her extra  
 size. I have never found a queen-bee that  
 was too prolific to suit me. The building  
 up of powerful colonies depends upon this  
 prolificness of the queen, and it hardly  
 needs mentioning here that it is only  
 through having a powerful field force that

large yields of honey may be obtained. I must, therefore, rate extra-prolificness in queens as their most valuable trait. Along with this I look for strength of body, limbs and wings; in fact, a general compact, symmetrical and well-developed form, combined with activity. Such a queen, showing, herself, all of the race characteristics of the breed to which she belongs, and whose workers likewise show race characteristics of their class, will be very likely to reproduce herself in her queen progeny, and, through the latter, will give colonies which are typical of the race to which they belong.

#### Manner of Securing Cells

If considerable numbers of cells are required, it is always better to have a colony of Carniolan bees, Caucasians, or some one of the eastern races as cell-builders, since they produce much greater numbers, even fifty to one hundred cells in a single batch being quite common. Being also excellent nurse bees, the food supplied to the developing larvæ is abundant, insuring more perfect development than is the case with the nurse bees of less prolific races. The first step is to make queenless a very populous colony; on the third day thereafter the colony may be put in condition to receive queen cells. There is no need of rejecting many of the cells which may chance to have been formed in this colony, since, if properly managed, they may be made to produce most excellent queens. For convenience, these incipient cells may be cut out and attached with melted wax at regular intervals on a top bar. The larvæ ranging in age from forty to sixty hours are to be removed with a slightly bent toothpick, and, in their place, are to be put, with the same instrument, larvæ from twelve to thirty-six hours of age, taken from the colony of the chosen queen. This substitution of young larvæ insures a full amount of food from the very beginning—even a superabundance. In choosing the cells to be placed on the bar, only

those having large bases upon which a normal-sized cell may be built, should be taken. Here, again, race peculiarities have to be considered, since the queen cells ordinarily formed by eastern bees are not as large in diameter as those produced by Carniolans. It is therefore to use care in this selection.

The next step consists in the removal of all unsealed larvæ from the population of the colony which has been queenless during the preceding two or three days. The object of this removal is to force the bees to turn their whole attention to the fitting and is, therefore, or more queen cells that are supplied to the colony. Should honey-gathering not be going on freely, the colony engaged in the nursing of these queen cells is to be fed daily a pint or more of syrup, care being taken, likewise, that an abundance of pollen is present in the hive. If the weather is cool and changeable, particular care should be taken to afford the bees every facility for the retention of the natural warmth of the brood nest. Since, in substituting larvæ from the breeding queen chosen, those larvæ having an age of twelve to thirty-six hours had better be selected, it may be counted that the young queens will all emerge twelve and one-half to thirteen and one-half days after the transferring or substitution of the larvæ takes place. It will therefore, be easy to provide nuclei (queenless colonies) for the reception of each one of these queen cells. If, however, it is inconvenient to do this, the cells have been placed at regular intervals upon the top bars, it will not be found difficult to provide a small queenery, which may merely consist of a series of wooden cages with wire-cloth sides or small wire-cloth compartments having a cell or cup in which a small quantity of food may be placed, the cages being placed at such intervals that a bar containing the cells, when placed over the cages, permits each cell to fall into a separate compartment. It is

upon which no means advisable to place the cells in  
 built, should be a queen nursery until the young queens  
 ce peculiarities are practically at the very point of emer-  
 ince the queen's emergence, since the slightest neglect or chill-  
 y eastern bees a day or two previous to the final  
 er as those pro-awakening of the maturing queen, if not  
 s therefore well-timed, is highly injurious to the future  
 on.  
 in the removal usefulness of the queen. All are familiar  
 n the population with the indifferent results in the case of  
 queenless during the chicks of common fowls should chill-  
 ree days. The hatching of the eggs occur shortly before the  
 o force the bees sensitiveness in this particular exists,  
 tion to the fifth and it is, therefore, a very mistaken pol-  
 are supplied early to separate the maturing cells during  
 ering not be given any stage, except that of actual emer-  
 engaged in the emergence, from the direct and free contact  
 ells is to be made with the clustering bees.  
 yrup, care being After emerging, the young queens are  
 n abundance to be allowed a period of a week to fifteen  
 e hive. If the days for mating. The impulse to fly and  
 ngeable, particularly mate will be greater if the colonies are in  
 is low at night thoroughly prosperous condition, that  
 taken to afford are well supplied with honey and pol-  
 for the retention in proportion to their numbers. While  
 f the brood nest queens of the European races usually  
 larvæ from the mate in from five to seven days after  
 those larvæ have emerging, those of eastern races more  
 ) thirty-six hours often require nine to fifteen days. It fol-  
 t may be counted lows from this, as well as from the fact  
 will all emerge that eastern types are possessed of greater  
 thirteen and on relative vitality, that the young unfertile  
 sferring or substit queens of the latter will bear, without in-  
 is place. It is very, longer confinement previous to mat-  
 rovide nuclei long than will those of European types.  
 the reception twelve to fourteen days may often be ad-  
 n cells. If, how possible for the former, while seven to  
 t to do this, the one days should usually be the limit for  
 placed at regular the European races. But, in all cases, the  
 bars, it will not less confinement after four or five days  
 ide a small queen be better, and during this period in any  
 uly consist of instance it will be preferable, in order not  
 s with wire-d to injure the young queens, which it must  
 th compartment borne in mind are not yet wholly de-  
 in which a small veloped, although they have emerged and  
 e placed, the de present the appearance of perfect queens,  
 intervals that have them caged in wire-cloth pipe-  
 ells, when placed vered cages pressed into the surface of  
 s each cell to the comb, where abundant supply of food is  
 arment. It is always at their command.

It is hardly necessary to add that an  
 examination of each young queen should  
 be made immediately after she has  
 emerged in order to waste no time in the  
 preservation of those happening to issue  
 with defective wings or legs or ill-devel-  
 oped or crooked bodies. One may even go  
 farther than this, should the supply of  
 young queens be quite abundant, and re-  
 ject all that do not present the most  
 promising appearance.

**Selection of Drones**

Quite the same care should be given in  
 the selection of the drones (or males) as  
 in the selection of queens. It is true that  
 we may not wholly control the mating,  
 since the queens frequently leave our own  
 apiary while flying out on mating excu-  
 sions, but in case a certain race is bred in  
 its purity and surrounding apiaries are  
 stocked with those of a different type, it  
 will be quite easy to reject any queens  
 that have mated with drones of another  
 race, retaining, for our own breeding pur-  
 poses at least, only such as have mated  
 with the stock purposely reared in our  
 own breeding yard. It is, therefore, de-  
 cidedly advisable to limit drone produc-  
 tion to queens which have sprung from  
 colonies coming up to our own idea of  
 what we desire in the shape of workers in  
 our honey-producing colonies. Repeated  
 experiments in crossing various types  
 have convinced me that the drones have  
 greater influence over the temperament  
 and constitution of the workers than have  
 the queens. It follows from this that in  
 these two particulars the general charac-  
 teristics of the colonies selected as drone-  
 producers must be preëminent. By this I  
 mean that both the queens to produce  
 these drones and the workers related to  
 these queens must come up to the general  
 race characteristics, and must in these  
 cases show most excellent qualities as re-  
 gards hardiness of constitution, general  
 robustness and wind-power, combined, in  
 the case of the workers, with the greatest  
 gentleness which it is possible to procure.

We are endeavoring not merely to secure the gentleness characteristic of the given race which we have selected, but we wish exceptional gentleness within that race. But it is quite impossible to judge by the drones themselves or the queens producing them what degree of gentleness these drones may transmit. We must infer that certain drones will transmit gentleness of the workers having the same blood as the mother of these drones, are excellent types of gentleness of the given race. These workers are the sisters of our proposed drone mother, hence aunts of the drones, and are, of course, in the colony from which the proposed drone-breeder sprang. The half-sisters of the drones themselves (constituting the worker progeny of the proposed drone mother), form but a slight guide as to what qualities of temperament the drones may transmit, because the good or bad temperament of these workers will have come largely (according to the above theory of preponderance of male influence over temperament) from the drone with which the queen has mated. To judge, therefore, whether the drones have gentle blood and hardy constitutions, we must go back to the worker progeny of the grandmother of these drones—the sisters of the drones' mother.

It is also highly desirable that the element of prolificness should not be lost to any degree, since it certainly appears reasonable that, while we look to the mother of the young queens largely for this quality, still on the male side considerable influence may also be exercised. We may judge of the capability of drones for transmitting prolificness by careful examination of the work of the queen producing those drones. Prolificness in our young queens re-appears, of course, in queen progeny in the shape of prolificness, but this quality re-appears in the workers as a material instinct, impelling them to greater care in brood nursing. It is, therefore, to be reckoned with as valuable, whether we are using these young queens merely as producers of other

queens or to produce colonies for honey production, since the ability of the workers composing the colony to care for vast amounts of brood has plainly its influence over the yield of surplus.

#### How to Maintain a Cyprio-Carniolan Apiary

The question might be asked how we are to maintain a honey-producing apiary headed by queens of one race mated to drones of another, as is the case with the Cyprio-Carniolan type, which I have commended as an excellent one for its hardiness, prolificness and great honey-gathering capacity. The answer is simply that the home apiary (or breeding apiary) must be stocked with Carniolans as an apiary in which the drones for this combination may be bred, and all queen breeding, or at least mating, may be accomplished. A very limited number of pure Cyprian queens may be kept at one of the out-apiaries, and from these the queen mothers are to be selected for use in securing cells for the young Cyprian queens, which are then to be mated at the Carniolan yard. And, since none of the young queens (whether mated to Carniolan drones or not) are to be used as queen mothers, no heed need be given to the manner in which they have actually mated, at least none of these queens need be destroyed by reason of mismating unless they produce quite objectionable bees.

It will be observed that I have outlined a plan of producing and mating young queens which implies merely the rearing of fifty to one hundred in a single brood. These numbers are capable of multiplication by merely using additional colonies; yet, were I recommending a system for an extensive breeder of queens, certain modifications might be adopted, even to the extent of establishing permanent temporary nuclei, as the case might see best, and the use of artificial cell-cups with many other paraphernalia not needed in such limited operations as I have here outlined. My purpose has been

rather to incite queens may be advanced to secure the honey.

With due regard to the queens in large hives and in honey dealing large numbers to a very great also thorough greater heed to factors which the rearing of —there would poor seasons is now the ca

#### ONTARIO

The following field crops of acreage as compared with turns made by Bureau of Industry estimated by staff of corresponding township. The same as that is estimated at in excess of the The area in bushels short of poor crop of oat off in the area of 158,000 acres shows an estimate million bushels being seven bushels equal to the a twenty-six years peas show substantial are still below the bean crop differs 1907. There is a hay area, but the yield of a ton to crop of last year.

rather to indicate how the quality of our queens may be maintained, or even advanced to such degree as to materially increase the actual output in pounds of honey.

With due attention to the breeding of the queens heading our colonies, with large hives and stimulative feeding during honey dearths, the question of keeping large numbers of colonies in one place is, to a very great degree, solved. I am also thoroughly convinced that with greater heed to the principal one of these factors which I have just mentioned—the rearing of the highest grade of queens—there would be far less complaint of poor seasons and small honey yields than is now the case.

**ONTARIO CROP STATISTICS**

The following statistics of the principal field crops of Ontario for 1908 show the acreage as computed from individual returns made by farmers to the Ontario Bureau of Industries, and the yield as estimated by a large and experienced staff of correspondents embracing every township. The wheat area is practically the same as that of 1907, but the yield is estimated at nearly a million bushels in excess of the final returns of last year. The area in barley shows a shrinkage of about 5 per cent., and is over a million bushels short of the crop of 1907. The poor crop of oats in 1907 caused a falling-off in the area of 1908 of over 5 per cent., or 158,000 acres; the yield, however, shows an estimated increase of about fifteen million bushels, the yield per acre being seven bushels in excess of 1907 and equal to the average of the previous twenty-six years. The areas in rye and peas show substantial increases, but they are still below the annual averages. The bean crop differs but little from that of 1907. There is a slight reduction in the hay area, but the yield harvested a quarter of a ton to the acre over the light crop of last year. The following are the

figures for 1908, in comparison with 1907, and the average of the previous twenty-six years, 1882-1907:

	Acres	Bushels	Yield per acre
<b>Fall Wheat—</b>			
1908 .....	679,642	16,540,362	24.3
1907 .....	676,164	15,545,491	23.0
1882-1907..	869,813	17,932,068	20.6
<b>Spring Wheat—</b>			
1908 .....	142,124	2,282,318	16.1
1907 .....	144,514	2,473,651	17.1
1882-1907..	403,156	6,399,290	15.9
<b>Barley—</b>			
1908 .....	734,029	20,744,222	28.3
1907 .....	766,891	21,718,332	28.3
1882-1907..	648,514	17,945,220	27.7
<b>Oats—</b>			
1908 .....	2,774,259	98,112,326	35.4
1907 .....	2,932,509	83,524,301	28.5
1882-1907..	2,140,887	76,627,266	35.8
<b>Rye—</b>			
1908 .....	87,908	1,445,640	16.4
1907 .....	67,158	1,039,021	15.5
1882-1907..	118,301	1,933,978	16.3
<b>Peas—</b>			
1908 .....	396,642	7,804,625	19.7
1907 .....	340,977	7,365,036	21.6
1882-1907..	645,873	12,560,918	19.6
<b>Beans—</b>			
1908 .....	46,385	829,064	17.9
1907 .....	47,562	790,269	16.6
1882-1907..	41,762	715,332	17.1
<b>Hay and Clover—</b>			
1908 .....	3,253,141	4,635,257	1.42
1907 .....	3,289,552	3,891,863	1.18
1882-1907..	2,532,638	3,711,958	1.47

With the exception of hay and clover, the final estimates of yields will not be made until November of these and other crops, including roots.

The Canadian Bee Journal provides the most useful and up-to-date information concerning the bee industry. Subscribe now. One dollar per year.

## TIMELY HINTS ON FALL UNITING

A subscriber wishes us to give full particulars of how to unite weak colonies at this time of the year. As we have had other inquiries of like nature, we will take a little space to cover the ground.

If we put two separate lots of bees together that were located on stands remote from each other in the same yard, there will be more or less of returning bees to the old stand. These will be practically the old ones. As they will die along about midwinter, their loss may not be considered very great. But some, and perhaps all, of these old bees may be made to stay in their new quarters. If they be put back a couple of times, the great majority of them will stay put; but this involves considerable labor.

In view of the fact that bees will go back to their old stands, Mr. Doolittle has advised uniting in the brood form early in September. This will leave the hive or the stand to be vacated in late fall with a few old bees. These may be allowed to die, for it may be said they will not be worth much to the strength of the colony.

A very good way to unite, and avoid all loss of returning, is to do so at the very time of putting them in the cellar. For example, A and B are both too weak to winter outdoors. We will place the two together in one hive, making a brood-nest out of the best combs selected from the two hives, leaving the other combs for reserve feeding in the spring. As soon as the two families are placed in one hive they should be put in the cellar immediately, and left there till spring.

Another way to unite without bees returning is to take two weak colonies, one from one out-yard and the other from another, and put them together at either one of the out-yards, or at the home yard. There will be, of course, no returning, for when bees are taken away from their usual environments for, say, a radius of a mile flight, they will stay where they are put.

But suppose there is no out-yard, and it is desired that there be no returning. One may shake into an empty box, or, better, a box having wire-cloth sides, bees from, say, three or four nuclei, and then put the box down cellar. The more different lots of bees one can get in the mix-up, the better. After they have been down cellar for twenty-four hours, they may be put anywhere on a permanent stand, and there will be very few of them that will go back. But this again involves considerable work.

Thus far we have said nothing about the queens and the possible fighting on the part of the united bees. As to the queens, if the apiarist is not particular, the bees will take care of that, leaving but one queen. We said the bees; for we do not know whether the bees do the eliminating, or the queens fight it out, leaving the victor the mother of the colony. But certain it is, nature seems to take care of it if the apiarist does not take a hand in it.

But suppose there is a choice of queens (and there usually is). He will then kill the least desirable one and introduce the other in an introducing cage. It may not be necessary to cage, but as a matter of precaution we would advise it.

The queen problem will be nicely taken care of if one of the lots of bees is queenless and the other has a queen. In that case, put the separate sets of combs with the bees together; and if there be no fighting, the queen will be accepted. Another good plan is to put one family up stairs and the other below. But do not mingle the combs at the time of uniting.

But how about the bees fighting when put together? This depends much on the season of the year, the strain of bees, or whether they are well supplied with stores. With ordinary gentle Italians there will be little or no fighting in uniting. But if both strains be hybrids, Cyprians, or other cross strains, there will probably be some trouble; in such cases, feed before uniting. We had two lots of

bees united that by one fighting always advisable two families to by a wire-cloth there will prob when the bees g to death, the or smoke, sometime in the smoker.

If the uniting cool weather the from fighting th place early in S

Where one is r and he has reach with a lot of we anticipate the wo the hives in pair; then is to take and after that, f one. The hive united forces is between where th This will then ca both hives. If t groups of three, ti placed in the cent two are removed Bee Culture.

## ONTARIO (

The following st condition of crops upon returns from date of August 15 the Ontario Depart Fall Wheat—This out, owing to the v rilling at the time erable sprouting oc was stoked. A fa was cut early, and condition, and in s said to be plump weight. The straw stood up well, and ported. Scattered n ly was made, but ent years. Special correspondents of i y sparrows. Cutt second week of Jul month.

bees united that were entirely annihilated by one fighting the other. It is then always advisable to use smoke. If the two families to be united are separated by a wire-cloth screen for a day or two, there will probably be no battle, but when the bees get to stinging each other to death, the only thing to do is to use smoke, sometimes putting a little tobacco in the smoker.

If the uniting be deferred until quite cool weather there is much less trouble from fighting than if the process takes place early in September.

Where one is running for queen-rearing, and he has reached the close of the season with a lot of weak colonies, it is well to anticipate the work of uniting by putting the hives in pairs. All that is necessary then is to take away one of the hives, and after that, put both lots of bees in one. The hive that contains the two united forces is placed about half-way between where the hives formerly stood. This will then catch the flying bees of both hives. If the hives be placed in groups of three, the three families are all placed in the centre hive when the other two are removed entirely.—Gleanings in Bee Culture.

#### ONTARIO CROP BULLETIN

The following statement regarding the condition of crops in the Province, based upon returns from correspondents under date of August 15th, has been issued by the Ontario Department of Agriculture:

**Fall Wheat**—This crop has yielded well, but, owing to the wet, warm weather prevailing at the time of harvesting, considerable sprouting occurred while the grain was stooked. A fair portion of the crop was cut early, and was got in in first-class condition, and in such cases the grain is said to be plump, hard, and of good weight. The straw was rather short, but stood up well, and only slight rust is reported. Scattered mention of the Hessian fly was made, but much less than in recent years. Special mention is made by correspondents of injury to wheat fields by sparrows. Cutting ranged from the second week of July to the end of the month.

**Spring Wheat**—This wheat will not be of as good general quality as the fall variety. It was short in straw, thin on the ground, and the grain is very uneven, both in quality and yield, some very good and some very poor returns being reported. Harvesting began in some parts of the Province as early as the 20th of July, but in some sections the crop would not be got in for nearly a month later.

**Barley**—In Western Ontario the yield of barley has been large, and the crop is regarded as a satisfactory one generally, as the discoloration of the grain is not so serious a matter as it was before the bulk of the crop was fed to live stock. In Eastern Ontario, however, the yield has been rather light and uneven, ranging from 5 to 30 bushels per acre in some of the former banner counties near the Bay of Quinte. The hot weather just before ripening is blamed for this injury by some correspondents, while others attribute it to the heavy rains occurring in the early part of the season and hardening the soil. Like other cereals, the crop is short in straw, but there is much less rust than was expected from weather conditions. The bulk of the crop was cut in the last week of July and the first week of August.

**Oats**—Except in the St. Lawrence and Ottawa counties, and in the northern districts, the yield of oats will be fully up to the average, and on the whole the grain will be much plumper than in the case of last year's crop. Frequent rains at the time of harvesting—and much of the crop was in the shock as correspondents wrote—may detract from the value of the oat crop, as sprouting was threatened, and the straw also was likely to be affected by the wet, so far as its feeding value is concerned. In the eastern half of the Province rust was frequently complained of, but in the more western counties much less mention was made of this trouble. Grasshoppers also attacked the oats in some of the eastern counties and in the northern districts. While some fields were harvested as early as July 20th, some oats had yet to be cut or housed as correspondents reported. Some of the largest yields of oats ever reported to the Department have been received this year from the County of Bruce.

**Rye**—This crop is not largely grown for grain, but where raised is usually cut green for food, or for turning under. The yield varies from 10 to 22 bushels per acre, and is of good quality.

**Peas**—A considerable portion of this crop remained to be pulled when corres-

pondents reported, but the prospects were that the yield would be about an average. Frequent rains prolonged blossoming, or there would have been an earlier and fuller yield, although some complain that the crop ripened too rapidly, owing to the great heat. The weevil or "bug" was less in evidence than for years, but a green aphid, closely resembling the turnip louse, was very injurious to pea fields in the Lake Ontario and adjoining districts.

**Beans**—Field beans were yet growing when returns came to hand, and some correspondents were fearing a second growth on account of rain, although other reports were much more reassuring. The prospects were for an average yield in those counties where beans are most largely raised.

**Hay and Clover**—The poor catch of grass seed last year, and the too close cropping of meadows, owing to the scarcity of fodder in the fall, made the outlook for this season's hay crop far from encouraging when the snow fell. However, the fields came through the winter in good shape, and the first part of the season gave promise of a large yield of hay; but dry weather set in early in June and the crop did not go forward as well as was expected. Most of the hay was cut and housed in first-class condition, but a considerable portion was caught by rain after cutting, and has suffered in quality. A number of large yields are reported, along with some very light returns, sometimes in the same localities. The western half of the Province makes a good showing, both as to the bulk and quality of hay, but the more eastern districts are below the average in yield. Taking the Province over, however, there will be a fair quantity of good hay in the barns this winter, both for home and outside supply.

**Corn**—Favorable reports concerning corn come from every district in the Province, more especially in the case of corn grown for fodder and the silo. As usual, there are a number of complaints regarding poor seed and consequent replanting; but warm, moist weather during the summer caused the plants to make a rapid growth, and should frost hold back until the corn is cut, it will be the best crop of the year, and the best crop of corn for many years.

**Flax**—The acreage of flax is not so large as in former years, but the quality of both seed and stock is this year classed as good, although the latter is rather shorter than usual, and in some localities

was somewhat lodged by heavy rain storms.

**Tobacco**—There has not been as much tobacco planted as usual. The cold spring kept the plants backward, and frequent rains in July also told against the crop, and at the best only a fair return of medium quality is looked for.

**Potatoes**—Potatoes promise better, both as to yield and quality, than for the last three years. Those put in early have been disappointing, but late planted are giving promise of a liberal yield. References to blight come from various parts of the Province, but some correspondents say that spraying for the trouble is being more practised by growers. Only a small portion of those reporting fear rot.

All classes of roots were backward in the earlier stages of growth, owing to unfavorable weather at seeding, but they picked up later on, and "good root weather" was reported as returns were sent in by correspondents. Mangels are rather thin in stand, but are vigorous looking in top, bulky in root, and promising generally. Turnips are not so good as mangels, and suffered more from the fly or louse, but their general condition was greatly improving as reports were being received. Carrots are but rarely mentioned as a field crop, but sugar beets are more frequently spoken of, and in every case favorably.

**Fruit**—The spring outlook for orchard products was very promising, but in the case of apples and peaches there has been considerable disappointment, as the varieties most in demand will be scarce, while there are more than enough of the less valuable sorts. For instance, summer and fall apples are plentiful, the Duchesses going a-begging for buyers in some districts, but Spys and other standard winter kinds will be very scarce. There are a number of complaints of wormy fruit on account of codling moth, and the tent caterpillar, oyster-shell bark-louse, and twig blight have also done injury. But while apples and other tree fruits were smaller in size than usual last year owing to the midsummer drouth, this season the generous rains of July have reversed conditions, and several correspondents call attention to the fact that these fruits at the present time are uncommonly large. Pears have yielded fairly, and in some districts abundantly, but considerable blight has been reported. Plums have given a fair yield, but the curculio has been very active this season, and the fight with black-knot is still going on.

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Crawford peaches will be scarce, but some less popular varieties are fairly abundant, the later kinds more especially. Cherries yielded well, but the robins and other birds were very injurious to the growing crop, and black-knot is relentlessly attacking the trees. Grapes give promise of an immense yield, and the rose bug is mentioned so far only to note its absence. Small fruits generally were a good average crop.

**Pastures and Live Stock**—Pastures were in good condition when correspondents reported about the middle of August, except in Renfrew and one or two other St. Lawrence and Ottawa counties, and in the northern districts. Most of the live stock were consequently in good form, even though they had been put on the grass in much thinner condition than usual, owing to the scarcity of fodder last winter. All classes of farm stock are remarkably free from disease, the only serious feature reported being the unusually large number of cows that failed to come into calf this season. This, coupled with the fact that many dairy cows were sold for beef last fall and winter, means that the scarcity of milkers will be continued. Flies were very annoying in many parts of the Province. The flow of milk was fairly steady during the summer, and was keeping well up as correspondents wrote. The quantity of milk this year, however, will be less than that of last season, owing to fewer cows being available; but good prices have brought a ready market for both butter and cheese, and so far the season has been regarded as a favorable one for the dairy. From present appearances, there will be more than a sufficiency of fodder for the fall and winter keep of live stock.

**Labor and Wages**—There has been a sufficiency of ordinary farm help, but first-class agricultural hands are as scarce as ever. Harvest wages ranged from \$1 to \$2 a day with board, \$1.25 and \$1.50 being most frequently given; monthly rates varied from \$15 to \$35 with board, according to experience. More tried men are being hired by the year, with house, although improved machinery is rendering farmers more independent of hired help.

She—"Where's your Naturalist Brother now?"

He—"California. Started an Apiary, don't you know?"

She—"How nice! Monkeys are so interesting!"—Punch.



F. J. MILLER, London, Ont.  
President Middlesex Bee-keepers' Asso.  
President Ontario Bee-keepers' Asso.



WM. COUSE, Streetsville, Ont.  
Who Will Reply to the President's  
Address at the Coming Ontario Meeting

### MIDDLESEX BEE-KEEPERS' ASSOCIATION

The annual meeting of the Middlesex Bee-keepers' Association will be held in the City Hall, London, Ont., on Saturday, November 7th, commencing at 10 o'clock. A good programme is arranged, and all will be welcome.

F. J. MILLER, President.

E. T. BAINARD, Secretary.

### THE HABITS OF THE BEE AND SOME MISAPPREHENSIONS

[By Everett F. Phillips, Ph.D. (Fellow for Research in Zoology, University of Pennsylvania)]

Of all animals, aside from man himself, there are very few that have been the object of more admiration and interest to men of every age than the common honey bee. The domestic animals have, of course, been the objects of much study, but it is much to be doubted whether they surpass the bee in interest. On account of its value to man as a honey-producer, as well as because of its most interesting habits, but few insects are as well known as is the hive bee, *Apis mellifera*.

It may be profitable for us to review together for a short time some of the things that we know about bees, and it has occurred to me that possibly it might be even more profitable to find out what we do not know. There yet remains much to be done along the line of observations on the habits of the bee, and, lest we forget that we do not yet know all that is to be known, let us first examine the difficulties in the way of observation and then hastily review our present knowledge in so far as our time will allow.

First of all, let us give credit to the men who in the past have spent their time in observation, for by their labor we of the present are enabled to read in a short time the results of years of work and profit in the practical work of apiculture by their recorded results. He would

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be an ignorant bee-keeper indeed who would fail to acknowledge his debt of gratitude to the men who have worked on the habits of the bee, for apiculture is founded on their work, and would not exist to-day as a science were it not for such workers. The names of Aristotle, Swammerdam, Reaumur, Bonnet, Schirach, Huber and others well known to you, must ever be venerated by bee-keepers for the light these men threw on the activities in the hive. Huber, with his loss of sight, stands out among these as an example of a man who could do work of the greatest value in spite of an affliction which would make most men of little value to mankind at large. Later we come to the names of Dzierzon, the founder of the theory of Parthenogenesis; Von Berlepsch, Von Siebold and Weismann. We must also include Langstroth, Cowan and possibly Cheshire in the list, for they have done much in apiculture. There are many more men whose work has helped, but we cannot enumerate all of them. I regret to say that relatively few Amer-

Oct. 1908

Want an

Advertisements received at the words, each Payments stri amounts are to keeping. Write sheet from any side of the pag many times ad must reach us each month.

FOR SALE—colonies, with particulars to Woodstock, On

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### 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 25rd of each month.

**FOR SALE**—First-class apiary of 120 colonies, with all supplies. Write for particulars to J. B. HALL, Box 595, Woodstock, Ont.

**WANTED**—Comb or Extracted Honey. State probable quantity, quality, how put up, etc. FOSTER & HOLTERMANN, Limited, Brantford, Ont.

**FOR SALE**—40 winter packing cases for holding two hives; also 24 double-walled, for single colonies, complete with frames; made of best pine; will sell less than cost of lumber. Comb Honey wanted. G. A. DEADMAN, Brussels, Ont.

#### HOTEL ACCOMMODATION

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icans have done much toward a scientific study of the bee, but what this nation lacks on that side has been more than made up in practical appliances and methods. The source to which every bee-keeper should go for a knowledge of the habits of the bee is not a book written by any of the men that I have named, nor of any other man, but the one place to study the habits is beside a bee hive. First-hand information, properly obtained, is worth more than any amount of second-hand facts, and here, as everywhere, we can profitably follow the advice of the celebrated naturalist, Agassiz, "Study Nature, not Books."

The study of the behavior of animals is not easy. I am well aware that many persons think that they could not want an easier task than to study the habits of the bee, but there are difficulties which

make such work very trying and unsatisfactory.

In the first place, it is often hard to see just what a bee is doing. Let us take as an example what happens when we shake the bees from a frame in front of the hive entrance. In a short time a few bees nearest the entrance turn their heads toward the opening and begin to fan their wings; others soon do the same, and before long almost every bee is fanning as if its very life depended on it. Gradually they begin to move toward the entrance and enter the hive. Every bee-keeper has seen this repeatedly, especially when hiving a swarm, but how many could tell what is going on among the bees? This action has been referred to as the "joyful hum" of the bees, as expressive of their pleasure at finding again the hive in which they belong. Others have said that the noise of those nearest the hive is heard by the bees farther away, and they know where the colony is located. Whether bees can hear or not is a question which need not be discussed here, but these conclusions are inaccurate because the observations are incomplete. If you will carefully notice this particular action at the next opportunity you will see that the abdomen is raised to an angle of about forty-five degrees, and that the last segment is bent down, exposing a light yellow strip between it and the next anterior segment. On this yellow area there appears a glistening drop of some fluid, and when the bee begins to fan a very peculiar odor is easily detected, even by the human nose. Bees are, as is well known, governed largely by scent, and this particular action consists in the fanning back of the odor produced by this liquid. The difficulty in earlier observations was that the whole attitude and action was not observed, and consequently the conclusions were incorrect. It is not so much because this is hard to see, but because the observers were satisfied with a partial observation, that we long remained ignorant

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of this important habit. We pride ourselves on our ability to see things, yet any person who has investigated the subject knows how difficult it is to get two people to tell the same story concerning any observation; and this is not because their eyes do not see alike, but because they perceive only part of the event and let their imaginations fill up the gaps. In no place is this human fault more noticeable than in work on observation of habits, and as a result I feel free to say that this is one of the most difficult problems in the study of animals.

A second difficulty is that of giving reasons for the things observed. We are not satisfied with mere observations of actions unless we can see why they are performed, for otherwise the action is meaningless. Since the bee is constructed on a plan so totally different from ourselves, we often are unable to interpret the habits, and doubtless many important things are still unknown for this reason.

A third difficulty, and one to which too much attention cannot be called, is

the difficulty of distinguishing between verifiable and unverifiable truth. As an example, let us take the action of the worker bees toward the queen. The actual observation is this: The workers surround the queen on the comb and touch her with their antennæ. Whenever she approaches a worker as she moves over the comb the worker turns toward her and at once begins touching her with its antennæ. So much all observers see, but here they separate. One says the workers hold the queen in greatest respect, and that they care for her and caress her because they know that on her depends the life of the colony; another observer denies all ability of a worker bee to feel any affection or similar emotion. Now who is right? No one can tell, for at the present time this is unverifiable. The actual movements are verifiable by any observer, but when we try to enter the realm of unverifiable truth, where our imaginations are our only guides, and consequently our results are worse than worthless. This is the

rock on which shipwrecked. way to eradicate ments from th marvellous adv very best writ scarcely a bee not contain sor As another ex: quote from one the author of w unmentioned: "The antennæ afford means of the bee says all relatives. "Watch two frame; they inst they come from sses such an out

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rock on which many observers of bees are shipwrecked. If only there were some way to eradicate the unverifiable statements from the books on bees, what a marvellous advance it would be. The very best writers are at fault here, and scarcely a bee journal appears that does not contain some such statements.

As another example of this, allow me to quote from one of the more recent works, the author of which may perhaps remain unmentioned:

"The antennæ, in some mysterious way, afford means of communication. By them the bee says all it feels to its friends and relatives.

"Watch two bees meet on a window frame; they instantly cross feelers, and if they come from the same hive there ensues such an outpouring of bee talk, such

a tremor of crossed antennæ, such an evident condition of excitement all through their bodies, as might well fill the most practised gossip with envy.

"One can imagine the graphic terms in which they relate the recent awful experience of their capture, how they were suddenly and rudely jerked from a sweet blossom, and after indescribable shaking about in a strange thing made of bands too close together for them to get through and too tough for them to bite through, finally found themselves, as they supposed, free.

"The joy after the fear! But, alas! their happiness was of short duration, for when they attempted to return to the clover field visible in the distance, they found themselves suddenly checked in mid-career by what seemed a wall of

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thickened air, a strange, hard, cold, transparent nightmare of a barrier which they could see through, but could not pass.

"Poor little bees! No wonder their antennæ fly in the discussion of such strange facts, and how fortunate that the ears of the ogre, their captor, are not attuned to the remarks of their antennæ, as they express their opinion concerning him, morally, mentally and physically."

Truly this author has wandered far afield in the realm of the unverifiable! I am not one of those who would eliminate all the poetic from our daily life, nor would I fetter the imagination as long as it leads to the truth, but to put such an array of obvious fabrication into a book which is intended to instruct us on bees is far from justifiable. It is just this sort of thing which has caused many persons to look with disfavor on much of the so-called "Nature Study" of our schools. It is really a pity that this author did not discover that there are more wonderful facts concerning the bee which were verifiable than any which were concocted to fill the book.

The three things which I have mentioned are difficulties which even men have who are well trained in observation. It takes much practice before the observations made by any person are of any value, and if we could but prevent people from publishing their results until they really know how to observe, what a blessing it would be to apiculture! There are other obstacles which we continually meet, such as the tendency to generalize from one or two observations, and the drawing of wrong conclusions because of bad logic. We may find examples of these later, but there is one other grave fault of which I wish to speak before leaving this subject. I refer to the use of the word "Instinct."

I have no desire at this time to go into a discussion of the causes and nature of Instincts. An instinct may be defined as a natural impulse, leading animals, even

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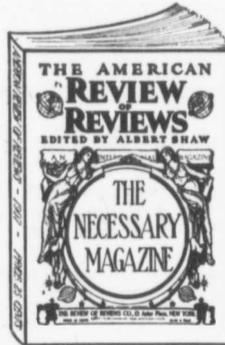
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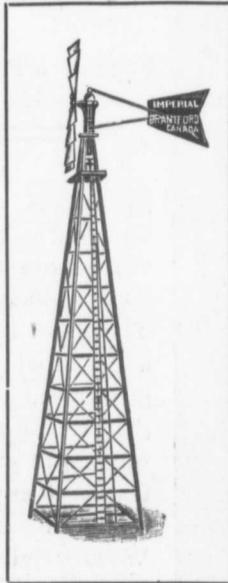
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