

The  
**Canadian Bee Journal**

Devoted to the Interests of Bee-Keepers

Vol. 17, No. 10.

**October 1909**

\$1.00 Per Annum



Apiary of J. Garbutt, Owen Sound.

PUBLISHED BY  
**The HURLEY PRINTING CO.**  
BRANTFORD, CANADA

# THAT PILE OF OLD COMBS

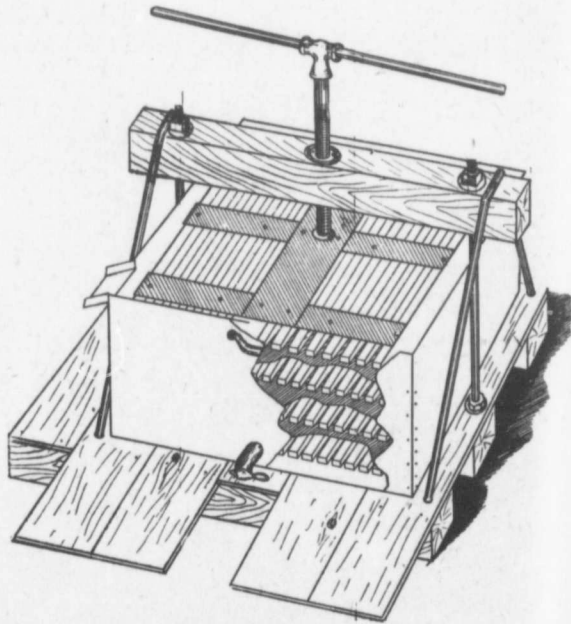
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# The Canadian Bee Journal

Devoted to the Interests of Bee-Keepers

JAS. J. HURLEY, Editor

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

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Organized 1880

Incorporated March, 1886

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Bee-keepers desiring the services of the inspector of apiaries should address their requests to Hon. James S. Duff, Minister of Agriculture, Toronto, giving nearest railway station and distance of apiary from station.

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

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Brantford, Canada

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Vol. 17, No. 10

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October, 1909.

# The Canadian Bee Journal

PUBLISHED MONTHLY

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

Vol. 17, No. 10.

OCTOBER, 1909

Whole No. 536

As this will be the last issue of the C. B. J. before the annual meeting of the Ontario Bee-Keepers' Association in Toronto next month, we take the liberty of urging all bee-keepers who can possibly attend to do so. Mr. Hodgetts and the officers are sparing no pains to prepare an attractive program. No bee-keeper can afford to miss this meeting; he will find it both pleasurable and profitable. The association has done much, not only for the bee-keepers of the Province of Ontario, but for all Canada. Nothing would please the officers and members of the association better than to see a liberal attendance from all the provinces of Canada, from Quebec to British Columbia and also the Maritime Provinces. And as for visitors from the United States, it is needless to say that the latch string will be on the outside, and a warm welcome on the inside.

♦ ♦ ♦

As an indication of the prosperity and progressiveness of the bee-keeping industry in Canada, reference may properly be made to the large and increased trade handled by the Ham & Nott Co. in bee-keeping supplies of all kinds during the past year. This reflects much credit upon Mr. Craig, the indefatigable manager of this department.

♦ ♦ ♦

We understand that Mr. Frank Adams had a most prosperous year in connection with the queen rearing business, the number sold being in excess of one thousand. This bespeaks well for Canadian bee-keepers who are turning their attention to the improvement of their stock.

The Messrs. A. I. Root Co. promise a new and revised edition of A B C and X Y Z of Bee Culture, bringing the work right up to date in all matters pertaining to apiculture. The work is a magnificent one already, and we have much pleasure in commending their enterprise. The editor says: "The new work, we confidently believe, will be as nearly accurate as any volume on bees that has ever been put out. It will contain a large number of new illustrations made expressly for it, some of which will appear from time to time in these columns. It will place strong emphasis on methods of management, which will be illustrated by a series of what might be called moving pictures, or more exactly, a series of snap shots, showing each step in the operation. We are now nearly half way in the work of revision."

♦ ♦ ♦

We must crave the indulgence of our readers this month. Just as we were about to prepare for this issue, we had the misfortune to be taken ill with plerisy, and were confined one week to bed. It is the first time in twenty-five years, and we now know better than we ever did before how to sympathize with those who are sick. We had become so conceited in the enjoyment of good health, as to think we were immune from illness. We have received a chastisement. This issue is late in consequence.

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We had the pleasure of a call from Mr. D. McFarlane, of Tilsonburg. He reports a very fair crop the past season. He is a little anxious about foul brood, as he believes it is in his neighborhood

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A good many questions are being asked as to how late one can feed in the fall. Ordinarily we would say the sooner the syrup can be given the better. As to how late one can do so will depend upon conditions. We have sometimes fed, in our locality clear up to the middle of November. However, at that time the bees have but very little opportunity to manipulate the syrup, much less cap it over. The purpose of early feeding is to give them a chance to "invert" it to some extent, and at the same time make a winter nest. This they do by emptying the cells in the combs at the point where the cluster is, so that the bees at both sides can get the advantage of body heat. When the syrup is fed late they can not make this winter nest before cold weather comes on, and consequently there will be a space one inch thick, or as thick as the comb, containing cold syrup between several clusters of bees.

Such a condition is not according to nature; and one can readily see that a bunch of bees, no matter how large, that is separated by slabs of solid honey or syrup can not keep as warm as where the combs are empty and the bees can crawl into the cells, thus establishing bodily contact heat between several divisions of the bees separated only by the midribs in the combs.—Gleanings in Bee Culture.

We take the following from Gleanings because it contains a statement that is entirely new to us, and differs so much from the opinion we have hereto held. A frank discussion of the matter can, therefore do no harm. If Mr. Root is right, we will be glad to find that we were in error. He refers to the bees making winter nests—these nests consisting of empty comb upon which they cluster. He says further that it is not according to nature for bees to cluster on cold slabs of honey, no matter how large the cluster. Does Mr. Root know this as a matter of fact, or is it only theory? If it is only theory, all we can say is that our theory is the very opposite. Before writing this we discussed the matter with some bee-keepers, and we have not found one whose opinion agrees with Mr. Root. Bees that have been wintered on full frames of capped honey have come out

in perfect condition in the spring. We know that abundance of food is one of the chief requisities for successful wintering. To our mind it does seem unreasonable to suppose that bees cannot cluster on combs full of honey. We have been laboring under the impression that this was the ideal condition. The cluster keeps the honey warm. Feed is at hand at all times. As fast as the honey is consumed the cluster moves upwards and follows the food. The idea that the bees crawl in the empty cells for the purpose of keeping up "bodily contact heat" does not appeal to us. How often do they back up and go and feed? How long do they remain in the empty cell? Would they not have some difficulty in backing up? We have frequently seen combs taken out of winter quarters with the bees buried head downwards in the cells, all dead. Is it possible they were seeking food that was not there? And not having found it, died of starvation? That was our "theory" at all events. Given a good swarm of bees and full combs of honey, you have clusters of bees between four or five combs of honey or syrup as the case may be. You then have warm slabs of honey—in proper condition for food, and this "cluster heat" is retained throughout the winter. Your hive is then in the condition it ought to be. Bees clustering on empty combs and going off at intervals to feed on cold honey is an idea that is difficult for us to accept. Mr. Root may be right, and if we are wrong we will be glad to be put right. We would like to have the opinion of our readers upon this matter.



Many thanks to Mr. Ross for his suggestion as to the usefulness of the ten-pound honey pail as a feeder. We have tried it with the utmost success. In taking the cover off the pails one is apt to spring or bend the edges slightly. The edges of the cover require to be put back tightly, and care is to be taken to see that

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none of the pails are bent out of true circle. This precaution taken you have a splendid feeder. After filling the pail, turn it over and let it drip into a dish until a vacuum is created, and then set it on a pie plate and carry it to the hive, and gently set it on top of the frames with a small stick on either side under it. This gives the bees free access to get under it all round. It is surprising how quickly the bees will take it down while it is yet warm. We hope that we may have the pleasure of hearing from Mr. Ross often. We are sure our readers will greatly appreciate it.

❖ ❖ ❖

Gleanings in Bee Culture has warned its readers not to allow honey dew to remain in the brood chambers for winter food. One of its correspondents says he will take his chances. Every man is free to take such chances as he likes, and make such experiments as he chooses. Gleanings, however, was right. It did its simple duty to its many readers, who look to it for counsel and advice. The consensus of opinion among bee-keepers is that honey dew will ruin a hive by building up time in the spring, especially in the more northerly climate.

❖ ❖ ❖

As an evidence of how honey can be sold with a little effort, our friend, Mr. John Symington, at whose farm we have some bees in conjunction with his own, sold our combined product of buckwheat, in all about eight hundred pounds, on Brantford market at 10c. per lb., in addition to the cost of the five or ten pound pail in which it was sold. Friend John is a hustler. We verily believe that the market for honey in Canada can be increased to the extent of 100 per cent.

❖ ❖ ❖

Later advices of the O. B. K. A. meeting in Toronto, Ont., on November 10th, 11th and 12th, gives promise of a splendid gathering. All indications point to one of the best meetings in the history of the

association. It is expected that a large number of prominent bee-keepers from the United States will be present, among whom are the following: Messrs. House, of Camillus; Howe, of Black River; Alexander, of Delanson; Kenyon, of Fairmont; Elthrop, Gouverneur; Coggshall, of Groton; and Dines, of Syracuse. Elsewhere appears the program in full. All those attending the convention will please remember that they are to purchase a single full fare ticket to Toronto, at the same time procuring from the ticket agent a Standard certificate. The certificate, on being signed by the secretary, will entitle them to a free return trip home, thus procuring a single fare for round trip.

❖ ❖ ❖

The Norfolk Bee-Keepers' Association meets at the Battersby House, Simcoe, at 1 o'clock p. m., on Friday, 29th Oct. All bee-keepers are invited. The Middlesex Association meets Saturday, Nov. 6th, at the City Hall, London.

❖ ❖ ❖

To Mr. Frank Davis we are much indebted for a very generous act of kindness. On Thanksgiving Day, the first day on which we were able to come down stairs, after being in bed a week, he called on us, and packed all our bees in their winter cases. The act was a very generous and thoughtful one, as it would have been some time before we could have done it ourselves.

❖ ❖ ❖

Just before coming to press we have pleasure in making room for Mr. Thomas S. Gill's short note re "Two Queens in a Hive." He also promises us to contribute something more soon, for which we beg to express our thanks. We have also the promise of something for beginners from Mr. J. A. McKinnon, St. Eugene, Ont. This is very encouraging for the future, and we trust many more of our readers will take up the pen, to the end that we may make our winter reading interesting and chatty.

### HONEY FROM CAPPINGS.

#### And a Few Words in Favor of the Porter Bee Escapes.

(By William McEvoy, Woodburn.)

By careful work part of the honey from cappings can be secured in fine condition. My uncapping tank is a long one, and is lined up inside with tin. About eight inches from the bottom it has tin shoulders for a runged frame to rest on, and on this frame rests a tinned wire screen. When uncapping we shave the cappings off as thin as we can, and let them fall on the bare screen and keep moving them every few minutes to the end of the tank, so as not to have any cappings fall on top of other cappings to soak the travel stainings off into the honey. After a few hours draining all cappings are removed to the solar wax extractors and all honey from the solar wax extractors is saved for feeding with sugar syrup at the end of the honey season.

No matter by what plan cappings are melted into wax the heat and travel stain on the cappings will injure the honey.

By careful work I secured from the uncapping tank about 900 pounds of fine honey, and from the solar wax extractors about 600 lbs for feeding. After the honey has been extracted out of the combs we shave every comb down to scant seven-eighths of an inch, and by so doing get a little riper honey from these when built out, and capped than from thick combs that were not thinned down. The extra amount of wax that I get from the material shaved off these combs pays well for the little time spent in thinning them down. When this sizing or thinning of the combs is done during the honey flows the bees use their surplus wax, building them out as fast as they fill them, and I have always found these combs capped over as soon as any that were not thinned down.

#### Porter Bee Escapes.

The Porter Bee Escape is one of the

most valuable things ever brought into an apiary, and in robbing time should be used in every bee yard in the world. In August, 1893, I bought my first escapes from Mr. Porter, the inventor, and was much pleased with them, and when I wanted more I bought from Mr. Grainger, of Deer Park, Toronto.

A few years ago I had Mr. John West of Thornton go with me when inspecting apiaries in his locality. All went well until we came to where a farmer had left the honey on his colonies, until he finished harvest, and then in the middle of a very warm day in August, when his bees were not gathering any honey, this man took off super after super of nicely capped honey and carried it into the wood shed, which was a very open affair. When we drove up I never before saw such a wild raging storm of angry robber bees, which were rushing into the wood shed in the most wholesale manner, and causing the old gentleman, and his good wife, who were full of pluck, to do a good deal of nimble side-stepping, while trying to uncap the honey and extract it, with veils and mitts on. I sent the horse away a safe distance and promptly called off the fight, and told these people to cover all the honey, at once which they did. I then advised the old gentleman to send to Mr. Grainger, of Deer Park, Toronto, and get a dozen Porter Bee Escapes, and explained how to make the board and put in the escapes, and told them to extract in the house or in some tight room. Some years ago when I wanted the bees to rush out of the supers faster than they were doing I lifted every alternative comb up about two inches and let them down again. This moved nearly all the bees in the supers and caused them to rush through the escapes in about half the time that it took the others to go through that were not disturbed by lifting up the combs a little, and since then I lift part of the combs a little as soon as I put the escapes under.

Woodburn, Oct. 14, 1903

#### Wednesday

2.00 p. m.—  
President's  
Streetsville.

Reply—First  
Craig, Brantford

Address—"V"  
Mt. Joy, Disc  
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8.00 p. m.—  
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Athens; 12, A. J

J. Leslie McNaug  
14, Homer Burko  
Paper, "My Ex  
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#### Thursda

2.00 p. m.—Adc  
and Honey Product  
Brantford.

Discussion on "  
by John Newton,

Discussion on "I  
by H. E. Eyre, Cl  
Election of Officer  
Directors' Report  
Treasurer's Repor



**O. B. K. A. PROGRAMME.****Wednesday Afternoon, Nov. 10, 1909.**

2.00 p. m.—Minutes.

President's Address—William Couse, Streetsville.

Reply—First Vice-President, W. J. Craig, Brantford.

Address—"Wax Craft." J. L. Byer, Mt. Joy. Discussion by W. A. Chrysler, Chatham.

Question Drawer.

**Wednesday Evening.**

8.00 p. m.—Address of Welcome, Geo. Henry, Oriole.

Address—"The Value of our Reports on Crops and Prices," W. J. Craig, Brantford.

Address—"Some Features of My Year's Work," Morley Pettit, Provincial Apiarist, Jordan Harbor.

Question Drawer.

**Thursday Morning, November 11.**

9.30—Review of Apiary Inspection for 1909—1, J. S. Schrank, Port Elgin; 2, D. Chalmers, Poole; 3, Jacob Alpaugh, Eden; 4, W. A. Chrysler; 5, John Newton, Thomesford; 6, James Armstrong; 7, Morley Pettit, Jordan Harbor; 8, H. G. Sibbald, Claude; 9, J. L. Byer, Mt. Joy; 10, W. Scott, Wooler; 11, M. B. Holmes, Athens; 12, A. A. Ferrier, Renfrew; 13, J. Leslie McNaughton, St. Raphael W.; 14, Homer Burke, Tayside.

Paper, "My Experience With European Foul or Black Brood," W. Scott, Wooler.

Question Drawer.

**Thursday Afternoon.**

2.00 p. m.—Address, "Queen Rearing and Honey Production," Frank P. Adams, Brantford.

Discussion on "Queen Rearing," led by John Newton, Thomesford.

Discussion on "Honey Production," led by H. E. Eyre, Chantry.

Election of Officers.

Directors' Report.

Treasurer's Report.

Report of Honey Crop Committee, W. J. Craig, Brantford.

Report of Representatives to Exhibitions: Toronto, J. D. Evans, Islington; London, F. J. Miller, Ealing; Ottawa, W. J. Brown, Chard.

Bee-keeping in Ontario, Directors' Reports: District No. 1, Alex. Dickson, Lancaster; 2, A. McLaughlin, Cumberland; 3, H. E. Eyre, Chantry; 4, R. Lowey, Cherry Valley; 5, James Storer, Lindsay; 6, Wm. Couse, Streetsville; 7, J. M. Switzer, Orangeville; 8, W. H. Bowen, Niagara Falls; 9, W. J. Craig, Brantford; 10, D. Chambers, Poole; 11, W. A. Chrysler, Chatham; 12, D. Nolan, Newton Robinson.

Question Drawer.

**Thursday Evening.**

8.00 p. m.—Address, "The Importance of Re-Queening," H. G. Sibbald, Claude.

Discussion led by J. J. Hurley, Brantford, and D. Anguish, Lambeth.

Address—"The Use of the Gasoline Engine Around the Apiary," D. Nolan, Newton Robinson.

Discussion, led by James Armstrong, Cheapside.

Question Drawer.

**Friday Morning, November 12.**

9.30—Address, "Advantages of a Standard Hive," J. Alpaugh, Dobbinton.

Discussion led by R. F. Holtermann, Brantford.

Address, "Queen Rearing," P. J. Clark, Borodino, N. Y.

**Hotel Accommodation.**

Members of the Association will find plenty of accommodation in Toronto during the week of the show. Special arrangements have been made with the Albion Hotel for a \$1.00 rate, and with the Palmer House for \$1.75 rate.

Question Drawer.

**Railway Rates.**

People attending the Exhibition from points in Ontario outside of Toronto will be able to do so at lowest one-way, first-class fare as follows:

From Tuesday to Saturday, November 9th to 13th, special excursions will be run by the railways to Toronto from all points in Ontario where the first-class single fare does not exceed \$2.50, at lowest one-way, first-class fare, plus 25c. for admission coupon to the show. Railway tickets bought on these dates will be good for return up to and including November 15th. People desiring to attend the Exhibition on other dates, and from places where the single fare exceeds 50c., will be able to do so for first-class single fare, but it will be necessary for them to obtain **Standard Certificates** from their station agent when they purchase their tickets to Toronto. One-way tickets to Toronto with **Standard Convention Certificates**, can be purchased from November 5th to 13th inclusive, and will be honored for the return journey free, regardless of the number in attendance, up to and including November 17th, 1909. These certificates must be endorsed by the Secretary at the Exhibition before they will be honored by the railway for the return trip. A fee of 25 cents will be charged for each certificate vised.

#### Honey Exhibit.

In connection with the Horticultural exhibition there will be a splendid exhibit of honey. The prize list has been revised, and the prizes increased in almost all sections. Those desirous of competing should write the Secretary at once for full prize list.

#### VALUABLE BEE-STINGS.

##### How the Insects Will Help to Cure Rheumatism.

Martyrs to rheumatism have reason to look with more hope to the future. There is a probability that they may find relief from their distressing complaint through the instrumentality of the hitherto dreaded sting of a bee—assisted by the ingen-

uity and observation of man. It has been noticed that bee-keepers are either altogether immune from rheumatism, or that they speedily recover after they have received a few stings, and a "bee-vaccinator" has been evolved, with a view to enabling medical men to inoculate rheumatic patients. This "bee-vaccinator" is among the novelties which were being shown at the exhibition of the Surrey Bee-Keepers' Association at the Crystal Palace, and is intended to remove a difficulty which has been experienced in applying bee-stings. Hitherto it was more than an even chance that the person conducting the vaccination would be stung by the busy little insect, but all this is changed by the "bee-vaccinator." This is an ingenious appliance, secured to a small platform resembling a lid of a box. It is placed over the hole of a hive, and the bees readily enter it if a trace of honey is applied as a bait outside a perforated zinc slide, which is part of the mechanism. By closing the slide the bees are imprisoned, the requisite number thus being secured. The little "vaccinators" can then be removed from the hive, or inspection box, and may be sent by post or carried about for use. The actual operation of vaccination is simplicity itself. The "bee-vaccinator" is placed on the affected part of the patient, and a knob is pressed down until the bees sting. If desired, a local anaesthetic may be applied. The value of the bee sting lies in the fact that the formic acid which is thus injected by the insect neutralizes the poisons in the blood which cause rheumatism. At one or two of the London hospitals bee-stinging to cure rheumatism has already been adopted, and at St. Bartholomew's a "bee-vaccinator" is in use, and bees are regularly supplied to the hospital for the purpose. It is explained that the first few stings cause inflammation, but this gradually goes down and after a while a bee-keeper feels little or no discomfort from a sting.—Ex.

#### A VOICE

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I have seen clover. Sanfo last spring. C ches, but I injured. Sweet Some of it g white variety time as the ye A cow to w sweet clover, cannot say abo sanfoin. I am will prove a "in this locali seeing one bee or sweet clover Congratulati appearance of t

#### Little Current

[Many thank short letter. from you, and a ity. We have clear on many o readers to write periences and di on any problem them. And th those who are is published esp and it will be y not take advant Moore, that you contributor. We little of Sanfoin has been said tha

**A VOICE FROM MANITOULIN.**

I have scarcely ever seen a communication from the Manitoulin, in your paper. Is it because we are of so little importance or is it because there are so many bee-keepers who do not write? Certainly we were badly hit in 1907. Where once there were hundreds of acres white with clover blossoms, the plant is now seldom seen, except among the bushes; yet it is increasing.

I have been trying sanfoin and sweet clover. Sanfoin proved itself quite hardy last spring. Other clovers heaved two inches, but I believe sanfoin was not injured. Sweet clover was perfectly hardy. Some of it grew fifty-two inches. The white variety blossomed at the same time as the yellow gave its second bloom. A cow to which I gave an armful of sweet clover, ate it quite freely, which I cannot say about another to which I gave sanfoin. I am in hopes that sweet clover will prove a valuable agricultural plant "in this locality." I do not remember seeing one bee working on either sanfoin or sweet clover.

Congratulating you on the improved appearance of the C. B. J.

WILLIAM MOORE.

Little Current.

[Many thanks, Mr. Moore, for your short letter. We are delighted to hear from you, and any others from your vicinity. We have endeavored to make it clear on many occasions that we want our readers to write us, telling us of their experiences and difficulties, or ask questions on any problems that may be perplexing them. And this applies especially to those who are beginners. The C. B. J. is published especially in your interest, and it will be your own fault if you do not take advantage of it. We hope, Mr. Moore, that you will become a constant contributor. We know personally very little of Sanfoin clover, but know that it has been said that bees work well upon it.

We are surprised at your statement that the bees have not been seen working upon sweet clover. They work well upon it in this locality but not sufficient to make surplus. It appears it does not give a heavy flow. The bees, however, keep up their brood rearing well upon it, and it seems to bring them in good condition to buckwheat, and we notice that they continue to work upon it for a time after the buckwheat flow has closed. Kindly let us hear from you again.—Ed.]

**IS IT NECESSARY TO DISINFECT HIVES THAT HAVE CONTAINED FOUL BROOD?**

(Gleanings in Bee Culture).

On Page 452 of our issue for Aug. 1, while admitting that in most cases foul brood would not be carried through the hives, we stated that, inasmuch as disinfection by means of fire was so simple, we thought it very unwise not to take the precaution; that we had talked with Canadians who said that the McEvoy treatment, in some cases where hives had not been disinfected, had failed to effect a cure; that our own experience of many years ago in a few cases showed how the disease was transmitted through the hive.

The following letter furnishes pretty good proof that the disease can be transmitted in just that way:

On Page 452, Aug. 1, the question is asked, "Is it necessary to disinfect hives when giving the McEvoy treatment for foul brood?" My experience indicates that it is. Last fall I wanted to transfer a colony on good comb in an old hive to a regular 8-frame hive; and not having a hive-body (the frames in my hive were Hoffman self-spacing), I borrowed one from a neighbor, getting the bottom board and hive body only. Later this colony died of foul brood.

A few days after borrowing this body and bottom-board I bought a hive from

the same neighbor. This hive was complete with old combs, super, etc, but no bees. This was put in another yard, and the colony in it also developed foul brood. I used the super on another hive this summer, and this colony has developed foul brood. This neighbor lost all his bees by foul brood, but did not know the reason for his loss until I discovered the foul brood in my apiary, and traced it to his yard. I also used one of the empty combs from the neighbor's hive to have a swarm of bees for another neighbor, and that colony developed foul brood.

There were four distinct cases of foul brood—first through the hive body and bottom-board; second, through the old combs and hive; third, through the super and section-holders; fourth, through a single comb. I might add that in my investigation, I found still another neighbor also got foul brood in his yard by buying an empty hive from the first-mentioned yard. Hereafter, Mr. Editor, I will use a gasoline blow-torch on any hive that has had foul brood, and burn up all frames. I find that it does not pay to take any chances. I want to be on the safe side regardless of the opinions of others.

M. Y. CALCUTT.

Dunlap, Seattle, Wash., Aug. 9.

Foul brood is too terrible a disease to take any chance with; and it is and always has been our policy to advise taking the safe side on this question. A few reports showing that foul brood can be transmitted through the hive are worth a thousand negative testimonies where the disease has not been carried in that manner.

[Inasmuch as we took a very strong stand against the disinfection of hives, we feel that in justice to Editor Root we should give space to the above. We desire also that our readers should be possessed of all the facts, and of the different phases of this discussion.—Ed.]

## WINTERING SUGGESTIONS.

### Bees Do Well on Summer Stands, If Prepared Properly.

(By J. W. Clarke, Cainsville).

There is considerable difference of opinion among the bee-keepers as to the best methods of wintering bees, whether out of doors or in cellars. From the writer's experience, one season with the other, bees do best on their summer stands, if properly prepared for the winter months. My hives are all 12 frame. About the middle of October I go through each colony and begin getting them in shape to feed for the winter. I lift out all centre combs, or those containing pollen, and just leave enough combs in each hive so that the bees will be able to cover them. Strong colonies will sometimes require seven or eight; weaker ones, five and six frames, a division board is placed close to the outside comb in each case. I then place a queen excluder on top of each. If I find a few weak colonies I unite them by placing one on top of the other with the queen excluder and a newspaper between. They will soon eat through the paper and unite without fighting. If the weather is quite cold the paper is not necessary. After two or three days the upper ones can be smoked or shaken down with the ones below.

Weak colonies seldom winter well, and are very slow at building up in the spring. One good strong colony is worth three or four weak ones. After I get them all in shape I commence to feed which is usually about the middle of October or November 1. I feed from below. At this time the brood is nearly all gone and there is little danger of the queen commencing to lay again so late in the season, especially if they are fed quickly that is, as much as they will take up in one day. If they were fed from above it would have to be done much earlier, while the weather was warm, but from

below it can before it free

I take an on each end, of cleats. This permit a mill without projecting super. The loosened and super contain bottom board syrup. This of water to This is put in depending on feed it warm soon excite them get to work a feed in this v full. It usual pounds, depend the colony and ready in, 20 p at once.

If the bees a fed in day tim year. If earlier I have often ha in feeders on v fine hay should prevent the bee

After feeding super from below in feeders lift up block under. This up on the comb they do not. Clean before setting then pack each stand in a box L will be at least side; six inches v drygoods box de purpose well. This ten inches of spring packing. I cut long in one end trace to the hive sary to keep pa the entrance in fi

below it can be done at almost any time before it freezes solid.

I take an empty super, nail two cleats on each end, placing a thin board on top of cleats. This should be low enough to permit a milk pan or box setting inside without projecting above the top of the super. The bottom board of the hive is loosened and the hive lifted, while the super containing feed pan is placed on bottom board and filled with sugar syrup. This syrup is made by mixing one of water to two of sugar, well dissolved. This is put in feeders while quite warm, depending on the weather; if very cold, feed it warmer. The rising heat will soon excite the bees and they will soon get to work at taking up the sweet. I feed in this way until their frames are full. It usually requires from 20 to 50 pounds, depending on the strength of the colony and the amount of honey already in, 20 pounds should easily be fed at once.

If the bees are not flying they can be fed in day time at such a season of the year. If earlier feed towards evening. I have often had them build comb down in feeders on very cold days. Floats or fine hay should be placed in feeders to prevent the bees from getting drowned.

After feeding is completed I remove the super from below. If bees are still down in feeders lift up front of hive and place a block under. They will then soon crawl up on the combs. Use a little smoke if they do not. Brush bottom board off clean before setting hive on it again. I then pack each hive separately on same stand in a box large enough, so as there will be at least four inches around each side; six inches would be better. A small drygoods box deep enough, answers the purpose well. There should be eight or ten inches of space above the hive for packing. I cut a hole about six inches long in one end of the box for an entrance to the hive. A bridge is necessary to keep packing from closing up the entrance in front of hive. This can

easily be made with a piece of shingle and two small blocks one-half inch thick.

The hive is then packed around with planer shavings, when they can be had. Oat chaff or cut straw will answer. The top cover of the hive should always be removed, have nothing but a quilt between the bees and the packing. This allows the moisture from the hive to pass up and is absorbed in the packing.

Many hives are lost each winter by excessive moisture freezing on the combs, thus preventing the bees in steady weather from getting at the honey on the outside combs. A water-tight cover is necessary for the packing case. I find roofing paper as good as anything that I have ever used. A lid that will last for years can be made and covered with this material.

[Of course Mr. Clark does not mean that he takes out all the combs containing pollen. Pollen is just as necessary in the spring as other food for brood rearing. But where combs are badly clogged with pollen, and there being too much in the hive, it would do no harm to remove some of it, and keep it on hand for judicious distribution in the spring. In our own experience we feed from above, as it is much easier to do. There is, however, a very great advantage in feeding from below, in that the bees get a greater benefit from the heat of the syrup. —Ed.]

#### THE BEST SWEET FOR CHILDREN.

Many parents find the candy problem a very real and difficult one when their children come to the age when they know how to spend their pennies. Some try to solve the problem by denying the child indulgence in sweets; others, and perhaps the majority, make the fatal mistake of allowing the child to choose for himself the kind and the amount of candy that he will take.

It should be remembered that the craving for something sweet is a natural one. It is the natural and legitimate demand of the system of the growing child for sugar. No greater wrong could be done than to deprive the child of wholesome sweets. The wrong closest akin to this is to give him money and allow him to choose the gaudy, adulterated stuff whose color and shape happens to tickle his fancy.

The candy problem has been easily and successfully solved by those who have rediscovered nature's own provision for this demand of the human system for something sweet. Honey, as it comes from the combs in which it has been stored by the bees, has been found, not only to be harmless, but wholesome for children to eat. They may eat it day after day and year after year, provided, of course, it is taken in reasonable quantities and at proper times, without the slightest injurious effects.

It is a well known fact that candies and other sweets which are made of ordinary sugar of commerce, if taken habitually, will in time prove very injurious to digestion. This is due to the fact that the ordinary sugar must be converted in the digestive tract to "grape sugar" before it can be assimilated. It has been stated by some excellent authorities that the continued draught on the secretive forces of the system in converting large quantities of sugar is a fruitful cause of Bright's Disease.

No such danger is attendant upon the eating of honey, as it is partially digested in the honey sac of the bee, and enters the digestive system of the human body in proper form for immediate assimilation. A more general acquaintance with this simple truth would prove a boon to many parents who are troubled with the candy problem. And what is very much to the point in this connection is the fact that the price of honey is not more, and in some cases not as much as that of the cheapest pure candy.

#### TRANSLATIONS BY HABERER.

(From E. Schicketung, Zinna).

To form colonies from the bees shaken and brushed off the combs, when extracting at the end of the honey flow: The work can be done quickly and many stings may be prevented, and as the flow of honey is over, it will not do much harm to the strong old colonies. Set an empty hive on the floor in your honey or bee house, entrance towards the wall; put in a few empty combs, one comb with honey, one or two combs with brood in all stages and a ripe queen cell. Have a large funnel to set on top of the prepared hive. Cover the rest of it with a cloth. Get your honey comb with the adhering bees, shake and crush off the bees into the tunnel, where they will soon disappear through the narrow long slot. To have some water at hand to sprinkle a little over them with a brush, will keep them from returning from the well closed empty hive. Take the bees from several colonies, and if you have fertile queens overhead, just let them run in through the slot with the other bees. I never had a queen balled or killed in this manner, but if you should not trust well, cage the queen and put in first. Now, take off the funnel quick and close the hive after sprinkling them with a little water. Set them on the new place, and very few bees will fly off.

T. WEGWEISER.

Franz Tiedemann, Walksfeld, says in reference to the preventing of dysentery: In many years of bee-keeping he never had dysentery. The greatest requisite, he claims is a warm, well constructed winter seat. Never should a colony that only covers four frames be left on eight or ten frames. Have a good layer of packing under the bottom board, and all around the hive. Well dried leaves he considers

the best pack fairly well weather the wards to the enough will c Starvation is structured hive, Breeding will of early breed man bee-keep [I have not early breeding it seemed incr correspond wit

The Island bees, exported honey; 50 per cent. to Fr erica, and 10 p countries. Wax 50 per cent. to France, 25 per cent to other Zeitung.

#### Great Bee-

The 54th mee trian and Hung the Deutschen I keepers' Associat fels, a. d. Saale festive days they all kinds of bee and honey produ ited on a large se of bees in all sty and American. Tl uplated air, in airship, and one (the symbol of was made and a a difficult task i divide the prizes

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the best packing. The entrance should be fairly well contracted. In case of warm weather the cluster will expand downwards to the bottom board, and if warm enough will clean off the bottom board. Starvation is impossible in a well constructed hive, if there is sufficient food. Breeding will start earlier; he is in favor of early breeding, while many other German bee-keepers condemn it altogether. [I have not found great benefit from early breeding in my colonies; last spring it seemed increase of population did not correspond with it.—J. H.]

The Island of Cuba, the paradise for bees, exported in 1906, 6,712,539 lbs. of honey; 50 per cent. went to Germany, 25 per cent. to France, 15 per cent. to America, and 10 per cent. to other European countries. Wax export: 1,383,464 lbs; 50 per cent. to Germany, 20 per cent. to France, 25 per cent. to America, and 5 per cent. to other countries.—Lux, Bienen Zeitung.

T. WEGWEISER.

#### Great Bee-Keepers' Convention.

The 54th meeting of the German-Austrian and Hungarian—in connection with the Deutschen Imkerbund—(German Bee-keepers' Association) was held in Weisenfels, a. d. Saale, from Aug. 6-11. Great festive days they were! Bees, hives, wax, all kinds of bee supplies, bee literature and honey producing plants were exhibited on a large scale. Nearly 200 colonies of bees in all styles of hives, European and American. There was even a well-populated air, in the shape of Zeppelin's airship, and one in the shape of a boat (the symbol of Weisenfels). Everything was made and arranged beautifully, and a difficult task it was for the judges to divide the prizes right.

The first evening was spent with entertainments, after a very able reception address by Pres. Muller. Midnight was past when the guests retired, and still later

when the residents did so. Score tickets were issued the first evening. A procession through the city took place also. Interesting and historical points in the neighborhood were visited during the convention [To unite pleasure and business on such occasions is not a bad idea and will surely increase the number of visitors. Likely the partaking of a glass of beer, and the use of a cigar is not quite so much condemned in these European conventions, as at our great conventions, by some of our great good men, who find it to much if two cigars had been bought during convention time!—"Temperance Men Bee-Keepers," at Detroit.—J. H.] The formal opening of the convention was made with an impressive address by President Rev. Sydnour. The following speeches were of a scientific character. Among them was a paper read by Dr. Zunder Erlanger. He claims to have discovered a parasite in the intestine of the bee that causes dysentery, and other similar sicknesses in bees. He named them "Nosmea Apis Zander."

T. WEGWEISER.

#### THE FARMERS' OPPORTUNITY.

A splendid opportunity to supplement the regular revenue of the farm is offered to those who can compete for the large cash prizes which will be given at the Ontario Provincial Winter Fair to be held in Guelph, on December 6th to 10th, 1909. About \$14,000.00 will be offered as prize money in the different departments which include the principal breeds of horses, dairy cattle, beef cattle, sheep, swine, and Poultry, and also seeds. The Fair comes at a convenient season when the fitting can be done during the slack time of the fall and early winter, while the few days sent in Guelph with the exhibits is a pleasant and profitable outing.

During the past summer about \$50,000.00 was spent on an addition to the Fair Building. Besides providing in-

creased and improved accommodation for the former departments of the Fair, a large judging area and about one hundred and fifty horse stalls have been placed in the new part which give splendid facilities for a magnificent horse show. Special attention has been given to providing accommodation for the judging of the different classes of stock and besides the ring for horses and beef cattle there are now separate judging rings for swine and sheep, each with adequate seating.

The following is a brief summary of the prize list. Our readers, who are interested should apply to the secretary of the fair, A. P. Westervelt, Toronto, for a complete list: In the horse department there are classes for Clydesdales, Shires, Hackneys, standard breds, thoroughbreds, ponies and heavy draught horses, for which there is offered \$3,300.00 in prizes. The \$2,000.00 offered for beef cattle goes to Shorthorns, Herefords, Aberdeen-Angus, Galloways, Devons and grades or crosses. The Dairy Shorthorns, Ayrshires, Holsteins, Jerseys, Guernseys and grades compete for \$1,200. Exhibitors of sheep can show Cotswolds, Lincolns, Leicesters, Oxfords, Shropshires, Southdowns, Dorsets, Hampshires, Suffolks, and grades or crosses, and win \$2,000.00 in prizes. The swine exhibitors get \$1,400.00 for their exhibits of Yorkshires, Berkshires, Tamworths, grades and crosses and Bacon hogs. As pure seed is now recognized as necessary to successful farming, growers of these are offered \$900.00 as an inducement for them to make a good display. The poultry department has grown to be the biggest poultry show in Canada and breeders show great enthusiasm in competing for the \$3,000.00 prize money.

We look to the farmers of this county to uphold their reputation as successful breeders and feeders of good live stock. The financial inducements offered are certainly worthy of their best efforts.

## A FEW THINGS NOT TO DO IN BEE-KEEPING.

(From Alexander's Writings).

### Inventing Hives.

First, don't spend either time or money in trying to construct a new form of hive—not but that there are some serious faults in nearly all of our standard hives, but let the experienced bee-keeper remedy those faults.

### Management of Weak Colonies; How to Prevent Robbing.

Don't allow your bees to acquire the habit of robbing. Hundreds of weak colonies are lost annually by this provoking habit which is frequently caused by the neglect of their owner. One of the worst features of taking our bees from their winter quarters, a few at a time, is that it almost invariably starts robbing. The colonies that are taken out first, and have had their cleansing flight, being well located are in prime condition to attack every colony that is taken out later, and before they become located the bees from those that were taken out first have full swing at their less fortunate neighbors. In order to prevent this costly and unpleasant state of things, where you have to set out your bees at different times, first contract the entrance of every colony; then as soon as you find a colony that is being robbed, even though it is only just started, close it up and keep it so for several days; then if they have any brood, set them on top of a strong colony with a queen-excluder between. If they have no brood, and still have a queen, give them a comb containing brood from some other colony.

In putting two colonies together in this way don't disturb either of them any more than you can help, especially the stronger one. If you keep a close watch on your apiary, and treat them as above described, you can save nearly all of your weak colonies with but little trouble and at the same time prevent your apiary

from getting in a condition which they find severe they can overpopulate bees.

### A Caution Against

Then the desire to tempt the beekeeper to divide his colonies are almost worthless or to try to win more or to try to win increase too fast not only lose you a fair surplus, but will lose many colonies during a lowing winter.

### Keep Good Records

Then don't be misled by bees that are robbing. This is the principle for; and if they have a surplus when they are taken out queens with quacking strain.

Then don't be misled by honey. You have a poor producing poor colonies has for producing a quality of honey in stamping on the name and address.

### Some Cautions

Don't set your colonies where they will annoy the neighbors, or sell them where they will be a nuisance.

Don't allow drone comb to be kept in a colony except one or two, have choice breeders more profit in keeping a colony where a large percentage is drone comb than in keeping a colony with a large percentage of drones.

Don't allow king snakes to have access to your colonies. If you do they will force of every colony



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from getting into that demoralized condition which they frequently do when they find several weak colonies which they can overpower with but little loss of bees.

#### A Caution Against Making Increase Too Rapidly.

Then the desire for more bees is almost sure to tempt the inexperienced to divide his colonies to that extent that they are almost worthless, either for surplus or to try to winter. So don't make your increase too fast. If you do, you will not only lose your prospect of securing a fair surplus, but the chances are that you will lose many colonies during the following winter.

#### Keep Good Bees and Produce Good Honey.

Then don't be contented in keeping bees that are not good honey-gatherers. This is the principal thing we keep bees for; and if they fail to give us a good surplus when they should, supersede their queens with queens of a good honey-gathering strain.

Then don't produce poor-looking comb honey. You have no more excuse for producing poor stuff than the dairyman has for producing poor butter; but produce a quality that you will take pride in stamping on every package of it your name and address.

#### Some Good "Don'ts."

Don't set your bees in a place where they will annoy the public. Either keep them where they will not disturb any one, or sell them and get out of the business.

Don't allow drone comb in any hive except one or two, and see that these hives have choice breeding queens. There is no more profit in keeping a colony of bees where a large per cent. of their combs is drone comb than there would be in keeping a poultry yard of roosters.

Don't allow king birds, skunks, toads and snakes to hang around your apiary. If you do they will weaken the working force of every colony.

Don't think that bees will give you good results in either increase or surplus honey if you neglect them and fail to do your part. The day is past when the word "luck" has any bearing on bee-keeping. The man who conducts his business in a careless slipshod way, taking it for granted that this and that will come out all right, is only fooling himself; and the sooner he realizes it to be a fact, the better for all concerned. So, don't try any thing of the kind, but look close to all the minor parts; and when you have united them into one fine method for practice you will be well rewarded for your study and perseverance.

Don't spend any time in worrying over the frequency of poor seasons, but spend your time in preparing for bees to make the most they can of any kind of season that comes, then you will be almost surprised to see how few poor seasons there are. We have not had a really poor season in 25 years, while some of my neighbors complain of a poor season nearly every summer.

#### Second-Hand Honey Packages.

I almost beg of you not to buy second-hand packages to ship extracted honey in. Don't use those poor packages. If you do, you not only bear down the market price of honey but you indirectly raise the freight rate.

Don't bother with starters of comb foundations in your breeding or extracting frames; but put in full sheets of foundation and prevent your bees from building that worse nuisance of the apiary—namely, drone comb. The man with a few colonies may have time to fuss with starters; but if you have many hives to care for, the sooner you cut out this starter business, and the shifting around the apiary of brood, the better it will be for your net income. The earlier in the spring you can have every hive in your apiary, and every comb in those hives filled with worker brood, then keep them so to the end of the season, the less reason you will have to worry about poor

honey seasons and over-stocking. We have never had a strong colony of bees backed up with a hive full of worker brood fail to give us a good surplus.

#### Preparing for Winter.

Don't neglect to prepare your bees early in the season for winter. This part of the business should here at the north be all finished before September 10. To a certain extent we are preparing our bees all summer for the next season; then when the final comes, the last of August, we have but little to do, and I am sure that they will winter with less loss if they have a chance to quiet down and are undisturbed during the fall months.

Don't try to winter weak colonies. If you are anxious to save all you can, then feed them syrup made from granulated sugar as soon as the harvest commences to close, so as to keep them breeding until they are strong in bees. If you attend to them in this way they will often be your best colonies in the spring; but if you can not do this you had better unite two or more together in the fall; for a weak colony in the fall is usually a dead one in the spring.

Don't try to winter a queen the third winter. I am sure it doesn't pay. She is almost sure to die, either in the winter or early spring; and if she lives she is so slow to start brood in the spring that you will have a weak colony until mid-summer; and it will require more valuable time to build it up than three queens would cost.

Don't fail to keep your bees as warm and comfortable as is possible during the first four or five weeks after taking them from their winter quarters. We contract the entrances of all colonies to  $\frac{3}{8}$  by 1 or 2 inches. In doing so it prevents robbing to quite an extent, and helps them to enlarge their brood-nest, which is very important at this season of the year. We also try to retain all the heat we can at the top of the hive. We put a piece of canvas first over the top of the frames, then a board under cover, cleated so as to

form two dead-air spaces; then our outside telescope top, which is kept well painted so as to prevent any rain from entering the hive. You may think this is taking more pains than is necessary. We think it has much to do toward helping the bees to give us a nice surplus during the summer.

Don't put your bees into winter quarters that will subject them to unnatural conditions. If you do you will lose many colonies, both during the winter and spring. It is almost impossible to save a colony that has been poorly wintered. We may talk and write of the thousand and one different things connected with successful bee-keeping; but when they are all summed up the whole combined is not of as much importance as perfect wintering. We could make more money the following season from strong colonies when taken from their winter quarters if they were in nail-kegs than could be made from little weak sickly colonies in the best hive that was ever constructed.

#### If I Were to Start Anew, What Style of Frames, Supers, and Appliances Would I Adopt?

If I were to start anew I would try hard to adopt some one of the standard hives already in use, mainly for this reason: If I wanted to sell my bees and appliances I could find a buyer easier, and sell at a much better price, than if my hives and appliances were of an odd size.

But, according to my ideas of a practical all-purpose bee-hive there are certain things of paramount importance that would have to be embodied in it before I could endorse any hive to the extent of adoption. First, I should want a loose bottom—one that is not permanently fastened to the hive. Next, a telescope top. These are a great protection to the upper part of the hive from the summer heat and the cool weather of spring and fall; and they never blow off in bad storms, which is another good thing in their favor. Then I should want the frames self-spacing, so no two could ever,

through careless together; and I am sure, with a little care, there would be no more frame Langstroth hives.

In regard to the various conditions, and the different I think the different arrangement ahead of any other.

There, my friend, is a hive with all the things I have, according to my experience that has ever been made.

Since I was in the discussion I had in mind, among all the colonies I could get, and the baker hive with all the appliances has few advantages than a standard.

The hive we use suits us very well, 2,100 just alike, and be quite different over into another.

#### Factory vs.

In regard to the cheaper, all things or factory hives, I am satisfied and contented with hives of any kind, more provoking hives. Bee-stings make me feel a little find some parts a little thick or a little short, to fit the hives were intended. I am a mechanic, and have a machine and all the tools to do good work, lumber at a moderate price. It is possible that you are making your hives through; but unless I think it would be all these things in the history that does not which is far more

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through carelessness, be crowded close together; and I would have them reversible, with some simple arrangement so there would be equal to a nine or ten frame Langstroth.

In regard to the clamp for holding sections, and the size and shape of section, I think the Danzenbaker, clamp-and-section arrangement for comb honey is far ahead of any other I have ever seen.

There, my friends, when you make a hive with all those requirements you will have, according to my idea, the best hive that has ever been devised.

Since I was invited to partake in this discussion I have spent some time in examining all the catalogues of different hives I could get, and I find that the Danzenbaker hive with its modern improved appliances has fewer faults and more advantages than any other hive I know of.

The hive we use for extracted honey suits us very well; and as we now have 2,100 just alike, it would seem foolish and be quite expensive to make them over into another kind of hive.

#### Factory vs. Home-Made Hives.

In regard to which is the better and cheaper, all things considered, home-made or factory hives, I will say, don't be satisfied and contented with poorly made hives of any kind. I know of nothing more provoking than a lot of slam-bang hives. Bee-stings can not commence to make me feel as much provoked as to find some parts of a hive left a little too thick or a little too thin, too long or too short, to fit the place for which they were intended. If you are a good mechanic, and have a good planing machine and all the necessary fine sharp saws to do good work, and can buy your lumber at a moderate price, then it is possible that you might save a little in making your hives and appliances right through; but unless you are so situated, I think it would be much better to buy all these things in the flat from some factory that does nice work. The one thing which is far more important than the first

cost is to have every piece of the hive an exact duplicate of that part in every other hive. This is where factory hives usually have a great advantage over home-made ones. I have been fortunate in getting our hives and appliances without much trouble, always living as I have within a short drive of wood-working factories where I could either buy the rough lumber or the hives ready to nail together, at a reasonable price.

Please do not infer from the above that I have not had any experience in cutting up lumber and making hives, for I certainly have had. Twice one hand has come in contact with the buzz-saw, to my sorrow. In going over this part of the business, it is not only the matter of hives, but there are our sections, queen-excluders, separators, clamps for holding the sections in their place in the hives, crates for our honey—yes, even our queen-cages and labels, and many times, our glass; for all these and many others we have to look to the large manufacturing plants. Now, why not go one step further, and, in sending our orders, include the necessary hives and have all come together in a good workmanlike manner, even if should cost a trifle more, which I have my doubts about, and then for many years enjoy the pleasure of knowing that you have all your bees in good well-made hives? This part is certainly well worth taking into consideration, for it instills in us a certain pride in our business which no man can expect to be successful without. Don't for a moment feel that any old ram-shackle thing is good enough for you and your bees, but make up your mind from the first that you will have everything connected with your business just as good as any other man's, and then work hard to accomplish it.

Before I leave this subject I wish I could impress upon the minds of all those about to engage in bee-keeping the importance—yes, I might almost say the necessity of adopting some one of the

standard hives as soon as possible. You must realize that you will have strong competition in the future in producing either comb or extracted honey, and it will be necessary to have the very best of everything connected with the business in order to compete successfully with those who have these great improvements.

#### Hive-Covers.

A subscriber wishes to know how the under covers to our hives are made. I will say that they have a rim  $\frac{1}{8}$  wide and  $\frac{3}{4}$  inch in thickness, with a groove in the centre  $\frac{1}{4}$  inch wide. In this groove we slide a board  $\frac{1}{4}$  inch thick, which leaves a  $\frac{1}{4}$ -inch space on each side of the centre board.

The tops of our frames are flush with the top of the hive, so when we lay this cover on top of the hives and frames there is a  $\frac{1}{4}$ -inch space between the under side of the cover and top of the frames. Then when our outside telescope top is put on, which has a two-inch rim all around on the under side, and rests on top of this under cover, there is another  $\frac{1}{4}$ -inch space between the two covers. This, we find, makes an ideal top. It is warm in cool weather and cool in warm weather.

We also use in addition to this under cover during spring and fall, a piece of heavy duck, No. 8, or, as some would call it, a piece of light canvas, over the top of the frames under the under cover. This helps much to retain the heat of the colony during the spring, as it furnishes a perfect packing around the top of the hive.

The rims of these under covers are mortised together at the corners, similar to a wood-zinc queen-excluder, and then nailed. They are strong and durable and at the same time light and handy to handle. With the outside cover well painted, no water or cold air can enter our hives from the top during the spring season.

We are all learning fast that it is very important to retain all the heat we can during early spring. We also close the

entrance until it is so warm in the hive on a fair day that the bees will fan the air at the entrance as they usually do in mid-summer. This causes the old candied honey to liquefy, and prevents the bees from carrying it out of their hives, where it is lost.

#### THE BEE IN THE EARLIEST AGES.

"Were there bees in the Garden of Eden?" We cannot say, but we do know bees appeared on the earth before man. Those who are geologists know that the earth has been gradually fitted for its present inhabitants, that it was not always in its present state, and that many thousands of years elapsed before man appeared. The different periods in the world's history are clearly defined, and geology teaches us all that has taken place from the first dawn of life on our globe to the present day. Although it is impossible to give dates, it is possible to give the periods of the appearance of certain plants or animals. The geological formation called "Miocene" is wanting in England, and is a more recent formation than our "Eocene," but both are referred to the Tertiary formation. In this formation are found the fossil remains of plants such as would be suitable honey-producers, and this for the first time in the world's history, as in formations of an earlier date than the Tertiary these plants do not occur, which shows that the climate of the earth was not suitable for them. As many of these plants depend upon insect agency for fertilising the blossoms it is natural to expect that insects capable of performing these functions would also exist, and as a matter of fact we find the fossil remains of numerous Hymenoptera also for the first time appearing. At Eningen on the lake of Constance, where the Miocene strata are well represented, many of the fossil plants found there have a great analogy with the flora of the present day. There no

fewer than species have Miocene was n present day, that there mu flowering plan The quarries w found belong gen and Schier first made kno (Eningen, the r conferred upon which is 700 ft the chief source gave in the B. page 94, a long which would h bees, as well found along wi most interest to the honey-bee isted even at th about the flowe lived in large sc built waxen cor pollen, and fed for it is so like mellifica) that i otherwise than species Thus wo date, previous to upon the scene, the world by its through subsequ the present day habits. From the climate of that t siderably warmer and bees must h of activity.—Brit

#### HONEY

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fewer than 465 out of a total of 747 species have been found. The flora of the Miocene was much richer than that of the present day, and Prof. Heer supposes that there must have been at least 3,000 flowering plants in the Miocene district. The quarries where these fossils have been found belong to the communes of Wangen and Schienen, but as the fossils were first made known through the monks of Eningen, the name of that place has been conferred upon them. The upper quarry which is 700 ft. above Lake Constance, is the chief source of the fossil plants. We gave in the B. B. J. for March 15, 1884, page 94, a long list of plants found here which would have been frequented by bees, as well as a list of Hymenoptera found along with them, but what is of most interest to us as bee-keepers is that the honey-bee (*Apis adamitica*) also existed even at that early period, hummed about the flowers, and without doubt lived in large societies in trunks of trees, built waxen combs, collected nectar and pollen, and fed its young as bees do now, for it is so like the living species (*Apis mellifica*) that it can hardly be regarded otherwise than as an ancestor of that species. Thus we see that at a very early date, previous to the appearance of man upon the scene, the honey bee enlivened the world by its presence, and continued through subsequent geological periods of the present day without any change of habits. From the nature of the plants the climate of that time must have been considerably warmer than at the present day, and bees must have had a longer period of activity.—British Bee Journal.

HONEY MARKET.

At Montreal.—Business in honey continues quiet, and the market is without any new feature to note. We quote: Clover, white honey, 13½ to 14½c.; dark grades, 11½ to 12½c.; white extracted, 9 to 10c.; buckwheat, 7 to 7½c.

INSECT AND FLOWER.

To most people the bee is a kind of busybody who only stings and makes honey. From an agricultural point of view the creature deserves a larger appreciation. It has been calculated that of the bees which fly out of the hive per day, making four flights a day, each of them before flying homeward visits fifty flowers. On this basis the number of flowers visited by an army of bees in a day must be enormous. The bee and the flower bear a mutual relationship to each other. The three eyes on the top of the creature's head, enabling it to see at close quarters while exploring the recesses of a flower; the baskets on its hind legs for pollen; the forked claws, useful for holding by; the long, narrow tongue, reaching to the bottom of the bloom, where honey is chiefly secreted, and picking up the minutest quantity—they all speak of the wonderful adaptation of means to a great end. While the bee gathers honey with its tongue its back rubs against the pollen. Leaving the flower it carries some of the pollen with it; alighting on another, some of the transparent pollen adheres to the stigma and fertilizes the seed. The bee, however, is not the only laborer. Butterflies, moths, flies, wasps—the sting of the last-named securing their sole possession of certain flowers—also exercise their power of selection. But the bee being more dependent upon flowers for food, probably plays the most prominent part.

In some flowers there are most exquisite mechanical arrangements, evidently made with a view to insects visits. In one, for example, there is a lever which depresses the stamen and rubs it on the creature's back; in another the stamens explode, and cover the insect with dusty pollen. When this happens the flower closes for about 12 hours. Even in the commoner flowers of hedges and fields there are many similar contrivances. In the broom the weight

of the insect bears down the pollen organs. They suddenly split as if a trigger had been pulled and the pollen is shot out.

Again the stamens of the barberry display a similar irritability. The slightest touch makes them start up from their ordinary position of resting on the petals. The head of the customer gets pelted with dust, and the dusty head probed into another flower, leaves some grains upon the stigma. Other examples of explosive mechanism are found in the flowers of the gorse, petty whin and the dwarf furze.

A flower has its enemies, ready to steal its honey without rendering any service; its unbidden guests against which it must guard itself. This it does in a variety of ways. The caterpillar and the snail are repelled by hairs and bristles; being thin-skinned and highly sensitive, they avoid the risks of a "punctured tyre." But there are more formidable guards than hairs and bristles, such as saw-shaped teeth and needle-like points, which prevent the creeping insects from reaching the flower. On the thistle the needles point both up and down. In some plants the honey is guarded by a pair of close fitting jaws; in others it is placed in a "safe" made of twisted hairs. Only those insects which fly and whose tongues can get between the hairs are admitted. If a creeping thing tries to rush the safe it is caught and held like a fish in a net. A further defence arises from the fact that before an insect can be of use to many flowers it must have a certain size, shape and weight. In several cases the honey is so completely covered that the insect has to push before it can reach it; or the passage may be so narrow that only a narrow tongue can enter. There can be no other reason for the form of some floral structures unless it be to shut out intruders. The pouch of the calceolaria, for instance, has such a tortuous entrance that it is practically blocked.

Only the heavy bee can reach the plunder, its weight on the lower lip being the key that unlocks the door.—T. P.'s Weekly.

#### ENCOURAGE THE FARMER BEE-KEEPER.

(By M. B. Holmes).

As we approach the close of the season's operations in the apiary we very often think of the large number of farmers and others in Ontario (in all the counties), who keep a few colonies of bees and who give them practically no attention, other than carrying them into winter quarters (the cellar), and carrying them out in the spring, and then living the increase in swarming time (if they happen to see them swarming), and yet they expect to derive some benefit from these colonies and are mystified, disgusted, or disgruntled because their bees do not give them a honey-crop similar to that produced under management in harmony with present-day methods.

It certainly seems strange that these men, who study to make every other department of their farming a revenue-producing department, should lose sight of the fact that, considering original outlay and cost of maintenance and operation, the very best stock on the farm is the very-much-neglected colonies of bees which they regard as a nuisance, or at least, of very trifling importance.

Now, Mr. Editor, no sane person would for a moment think of suggesting that all and singular of the above-mentioned farmers could, by any means, be converted into practical bee-keepers; for the very good and sufficient reason that in some instances they are not at all adapted for the business, while in other cases they are so circumstanced that they could not possibly devote the necessary time.

For these, and various other reasons, which might be given, it is not advisable to urge everybody to keep bees. This, I think will be readily admitted; and, yet,

there is, I think, a good work in agriculture lines these men so that they will and awake to something to quite another the occasion received.

These men opportunity, intimate mean their bees, to how to produce Get them excellent Canadian is admittedly of subscription of bees.

By an easy can, at this stage little, narrowing out some use any way be served? In as already our country would and, by the of association ever line it may

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Athens, Oct.

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there is, I submit, abundant room for a good work (a missionary work along apiculture lines, if you please), in arousing these men scattered over the Province so that they will "sit up and take notice," and awake to the fact that their bees are something to be prized and cared for in quite another way than cursing them for the occasional sting which has been received.

These men should be advised at every opportunity, and influenced by every legitimate means to give more attention to their bees, to learn of their ways, and how to produce and handle a honey crop.

Get them to subscribe for our most excellent Canadian Bee Journal, which is admittedly worth many times the price of subscription to any one keeping a colony of bees. These and many other lines might be included in this good work.

By an easy reach of imagination we can, at this stage, hear the voices of some little, narrow fellows as they read, piping out something like this: What's the use any way? What good purpose is to be served? In reply we would say, that, as already outlined, men throughout the country would be very materially helped, and, by the way, this is the object of association of kindred spirits in whatever line it may be.

Then the assistance and benefit rendered would be a special inducement to concerted action in the matter of marketing the honey, as the excellent work done by the Honey Crop Committee commends itself, and no one would think of selling honey below their figures, while most bee-keepers know something of the demoralizing market effects produced by the men who rush their honey to market and sell at any price, and perhaps take goods in exchange.

Now, sir, I have spun this out too long, but in doing so I have simply offered a suggestion which may well be amplified and put into practice to the mutual benefit of the helpers and the helped.

Athens, Oct. 8th, 1909.

**SPECIES-MAKING AND HEREDITY.**

**Fascinating Story of Mendel's Discovery of the Principles Which Have Since Been Known by His Name.**

(Mary Proctor in The New York 'Times' Saturday Review).

In the quiet seclusion of a cloister garden, Gregor Mendel, now recognized as one of the world's really great men, carried out experiments in connection with the theory of natural selection which have made his name famous. Following the clue which his long lost papers provided, we have reached a point from which classes of phenomena hitherto proverbial for their seeming irregularity can be recognized as parts of a consistent whole. Had Mendel's work come into the hands of Darwin, it is not too much to say that the history of the development of evolutionary philosophy would have been very different from that which we have witnessed.

Gregor Johann Mendel was born on July 22, 1822, in the 'Kuhland' district of Austrian Silesia. His father who was a peasant, took special interest in fruit culture initiating his son at an early age into the methods of grafting. The boy was sent to school and showed so much talent that a devoted sister gave him part of her scanty dowry to enable him to complete his course of study at the gymnasium at Troppau, and later at Olmütz.

At Troppau one of the teachers was an Augustinian, who doubtless described the scholarly tranquility of the cloister in such glowing terms that Mendel decided to become a candidate for admission to the Augustinian house of St. Thomas in Brünn, an institution eagerly spoken of as the Königskloster. On admission he took the name of Gregor "in religion," Johann being his baptismal name. In 1847 he was ordained a priest, and in 1868 he was elected Abbot or Prälat of the Königskloster.

The experiments which have made Mendel's name famous throughout the world were carried on in the large garden of the cloister. From the time of his novitiate he began experimental work, introducing various plants into the garden and watching their behaviour under treatment. He was fond of showing these cultures to his friends.

Dr. von Niessel relates how on one occasion he was taken to see two plants which had been cultivated side by side without showing any noticeable change. Mendel jokingly said: "This much I do see, that nature cannot get on further with species-making in this way. There must be something more behind."

He was not in full agreement with the views of Darwin, so he embarked on his experiments with peas, which, as we are informed, he continued for eight years. The plants were grown in garden beds, a few also in pots, and were maintained in their natural upright position by means of sticks, branches of trees and strings stretched between. For each experiment a number of pot plants were placed during the bloom period in a greenhouse to serve as control plants for the main experiment in the open as regards possible disturbance by insects. It appears that a certain kind of beetle was especially detrimental to the experiments and had to be guarded against vigilantly.

In all, thirty-four more or less distinct varieties of peas were obtained from several seedsmen and subjected to a two years' trial. In the case of one variety there were noticed among a large variety of plants all alike a few forms which were markedly different. These, however, did not vary in the following year, and agreed entirely with another variety obtained from the same seedsmen; the seeds were, therefore doubtless merely accidentally mixed. All the other varieties yielded perfectly constant and similar offspring; at any rate, no essential difference was observed during two trial years. For fer-

tilization twenty-two of these were selected and cultivated during the whole period of the experiments. They remained constant without any exception.

During this period of scientific work Mendel was also engaged in an investigation concerning the heredity of bees.

He had fifty hives under observation. He collected queens of all attainable races, European, Egyptian and American, and effected numerous crosses between these races, though it is known that he had many failures. Attempts were made to have the queens mate in his room, which he netted in with gauze for the purpose, but it was too small or too dark, and his efforts were unsuccessful. We would give much to know what results he obtained. In view of their genetic peculiarities a knowledge in heredity in bees would manifestly be of great value. The notes which he is known to have made on these experiments cannot be found, and it is supposed by some that in the depression which he suffered before his death they were destroyed.

In 1905 Prof. W. Bateson, from whose interesting biographical notice the above is quoted, visited Königskloster, hoping that some trace of the missing books might be discovered. He was most courteously received by the abbot and the brethren of the cloister, and was presented with the photographs of Mendel, which adorn the books under consideration. Prof. Bateson was shown the hives which had been used for the experiments, but the notebooks were not to be found.

The experiments with peas almost met with a similar fate, for the results were communicated to the Brünn Society in 1865, and published in 1866, but they passed unheeded. The total neglect of his work is known to have been a serious disappointment to Mendel, as well it might, but he had confidence that sooner or later it would obtain recognition. "My time will surely come, he was in the habit of

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Prof. Bateson writes:

"This episode in the history of science is not a pleasant one to contemplate. There are, of course, many similar examples, but there must be few in which the discovery so long neglected was at once so simple, and withal so easy to verify. The scientific world may comfort itself with the thought that in this case it sinned through inadvertence. With the exception of Nägeli, perhaps none of the leading naturalists ever saw the paper on peas. We would like to know whether Mendel made any other attempt to interest his contemporaries in his discovery. Probably having tried Nägeli and failed, he gave up further efforts.

With his appointment as Prälat his researches may be said to have ended. In 1872 the Government passed a law imposing special taxes on the property of religious houses, which Mendel strenuously resisted, involving him in consequence in endless trouble and litigation. High emissaries were sent to him proposing a compromise, even offering honors should he submit, but it was all in vain. Even old friends and acquaintances tried to influence him, but he yielded neither to coaxing nor menace.

He also became involved in the racial controversies which are often rife in this part of Austria, and it is only too certain that the last ten years of his life were passed in disappointment and bitterness. From being a cheerful, friendly man he became suspicious and misanthropic. During this period he fell into ill-health and died on Jan. 6, 1884.

The types of the great discoverers are most various. To the naturalist the fact is full of meaning. The wild, uncertain, rapid flash of genius, the scattered, half-focussed daylight of generalization, the steady, slowly perfected ray of penetrative analysis, are all lights in which truth may be seen. Mendel's faculty was of the lat-

ter order. From the fragmentary evidence before us, we can in all probability form a fairly true notion of the man, with his clear head, strong evidence in practical affairs, obstinate determination, and power of pursuing an abstract idea. Through the researches of Mendel the study of heredity becomes an organized branch of physiological science, already abundant in results, and in promise unsurpassed.

Besides the biographical notes by Prof. Bateson and the translation of the longest papers, the book contains chapters on the theories of Mendel as applied to heredity of color in flowers, pigeons, fowl, mice, evidence as to Mendelian inheritance in man, biological conceptions in the light of Mendelian discoveries, and a practical application of Mendel's principles. Full page photographic colored reproductions of sweet peas, primula flowers, and mice, add greatly to the attractiveness of this book. It should be of value to the student of science "for among the biological sciences," writes Prof. Bateson, "the study of heredity occupies a central position."

#### FALL MANAGEMENT.

No successful bee-man will trust to chance the lives of his colonies; he will carefully examine each and ascertain the quantity of honey combined in them. Experienced bee-keepers weigh each hive instead of looking at each frame separately, as they do not consider it wise to disturb the frames so late in the season when the bees have everything glued up tightly for the winter and they are likely to winter better if the frames are not disturbed after August 15th.

In looking over the bees you may find colonies too small to winter, in fact, too small to carry down food from the feeder to advantage. Such swarms should be united. The progress of uniting is quite simple. Place the hives containing the smaller of the two swarms to be united on top of the other, after, of course, re-

moving the cover and quilt from the latter, leaving no crack between the hives large enough for the passage of a bee. This should be done some evening after a day or two of weather too cool and cloudy for the bees to fly. As soon as you have placed the hives in position give them a good smoking at the entrance and rap sharply on the hive for a short time, causing the bees to fill themselves with honey. This will discourage their fighting and also the bees from the colony that have been moved will be more apt to mark their new home and much less likely to return to their old stand. You can now leave them for a few days, until the bees have had a few flights, then open the hives and choosing the best frames from both hives for your united colony you may then shake the bees from the remaining frames in front of the hive and the union of the forces is accomplished. Should there be any choice in the queens kill the poorest one before beginning operations.

To return to the question of stores for cellar wintering they should have at least from 20 to 25 lbs. of honey. The quantity of honey may be ascertained by weighing an empty hive with drawn combs and deducting their weight from the gross weight of each colony, the balance may safely be considered as the weight of the honey. Some allowance should be made for the pollen, which is always found to be stored in the combs at this season, for although invaluable in brood-rearing it is of no use to the colony in wintering.

If the hives are packed on their summer stands you should allow more stores per colony, say from 25 to 30 lbs. each, as they will consume more outside than in the cellar and even with this allowance they will need careful attention in early spring or they will sometimes run out of stores, even if thus well provided for.

Having ascertained the quantity of stores in each hive, and marked it plainly on the hive front where you can readily

see it, the next step is to feed any that may lack sufficient stores. The feeding should not be done too early, nor yet too late. If done too early the bees will use much of it in brood rearing, if too late they will not store it in the combs readily. The proper time is just after the first killing frost, when the nights are cool enough to discourage brood rearing and yet early enough for the stores to become thoroughly ripened and sealed in the combs before the bees are prepared for winter. At this season feeding can be done quickly and the danger of robbery minimized. In feeding you require some large feeders. These feeders are large enough to hold sufficient syrup to feed a colony, unless the colony requires nearly the whole amount necessary for winter, feeder until sufficient had been given. These feeders are used by simply placing the empty super on the hive, which will contain the feeder, with room to spare.

The syrup for feeding is made by dissolving granulated sugar in half the quantity of water. If you feed in the proper season you can dissolve the sugar in cold water, but if fed later in the season it will be much sooner carried down by the bees if fed about milk warm.—Exchange.

#### NOTICE OF MEETING.

The annual meeting of the Middlesex Bee-Keepers' Association will be held in the City Hall, London, Ont., on Saturday, Nov. 6th, at 10.30 a. m. and 1.30 p. m.

All Bee-keepers are cordially invited.

GEORGE KIMBALL, President.

E. T. BAINARD, Lambeth, Sec.

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**TWO QUEENS IN A HIVE.**

In the American Bee Journal, October issue, Page 340, Dr. Miller's Question Box, see article "Two Queens in One Hive." Last July I made several nuclei with young virgins raised in a hatching super. I kept watch over these, supplying them with their needs from time to time. About the end of August, in looking over the combs of one I found a fine large queen cell. Expecting a case of supercedure, I concluded to let nature take its course and closed the hive. In a few days queen had hatched and both were together on one comb, about an inch apart and quite contented. I cannot say whether the young queen was laying before the end of the season; she may not have been mated, because the drones were nearly all killed off before she was old enough to fly. I put both into one winter case. The mother was a daughter of a leather colored Italian, apparently mated with a five-banded or golden drone, and was quite bright and large. I will give you an article on this experience for publication next season. T. S. GILL,

Cranbrook, B. C.

**MARYLAND B K. A.**

Your communication of the 13th inst., is duly received and I beg to say in reply that the coming meet of the Maryland State Bee-Keepers' Association will be held in Baltimore, Dec. 1 and 2. I am now arranging the program, and will have Dr. Phillips and Dr. Gates of the U. S. Department of Agriculture, and Prof. Surface of Pennsylvania, and have the promise of Mr. E. R. Roote to address us on this occasion. We hope to have a large exhibit. In connection with the meeting, miscellaneous premiums are being offered for various exhibits. I might say that our meeting will be held during the week when the Maryland Horticultural Society. State Grange and Corn

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THOMAS B. SYMONS.  
State Entomologist.

**AN OVERCROWDED COLLEGE.**

The number of new students who have entered the Ontario Agricultural College this fall is so great that the accommoda-

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tion is overtaxed. President C. C. Creelman, is making an effort to secure increased residence and class room accommodation, and additions to the teaching staff. There are 220 men students in residence, and 70 boarding out, while the lady students at the Macdonald Institute number 117 in residence, 15 boarding out; while for 37 it has been found impossible to find accommodation in the class rooms. There are 50 men in the third year, while the previous record was 35. The increase is phenomenal, despite the raising of the fees and the establishment of other agricultural courses at different points in the province. The situation is a serious one for the management and faculty.

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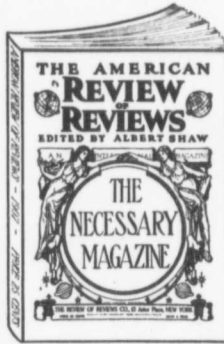
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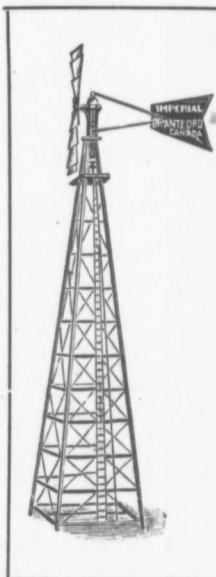
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