

## Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for scanning. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of scanning are checked below.

L'Institut a numérisé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de numérisation sont indiqués ci-dessous.

- |                                     |   |                                     |   |
|-------------------------------------|---|-------------------------------------|---|
| <input type="checkbox"/>            | Coloured covers /<br>Couverture de couleur  | <input type="checkbox"/>            | Coloured pages / Pages de couleur   |
| <input type="checkbox"/>            | Covers damaged /<br>Couverture endommagée   | <input type="checkbox"/>            | Pages damaged / Pages endommagées   |
| <input type="checkbox"/>            | Covers restored and/or laminated /<br>Couverture restaurée et/ou pelliculée   | <input type="checkbox"/>            | Pages restored and/or laminated /<br>Pages restaurées et/ou pelliculées   |
| <input type="checkbox"/>            | Cover title missing /<br>Le titre de couverture manque  | <input checked="" type="checkbox"/> | Pages discoloured, stained or foxed/<br>Pages décolorées, tachetées ou piquées  |
| <input type="checkbox"/>            | Coloured maps /<br>Cartes géographiques en couleur  | <input type="checkbox"/>            | Pages detached / Pages détachées  |
| <input type="checkbox"/>            | Coloured ink (i.e. other than blue or black) /<br>Encre de couleur (i.e. autre que bleue ou noire)  | <input checked="" type="checkbox"/> | Showthrough / Transparence  |
| <input type="checkbox"/>            | Coloured plates and/or illustrations /<br>Planches et/ou illustrations en couleur   | <input checked="" type="checkbox"/> | Quality of print varies /<br>Qualité inégale de l'impression  |
| <input checked="" type="checkbox"/> | Bound with other material /<br>Relié avec d'autres documents  | <input type="checkbox"/>            | Includes supplementary materials /<br>Comprend du matériel supplémentaire   |
| <input type="checkbox"/>            | Only edition available /<br>Seule édition disponible  | <input type="checkbox"/>            | Blank leaves added during restorations may<br>appear within the text. Whenever possible, these<br>have been omitted from scanning / Il se peut que<br>certaines pages blanches ajoutées lors d'une<br>restauration apparaissent dans le texte, mais,<br>lorsque cela était possible, ces pages n'ont pas<br>été numérisées. |
| <input checked="" type="checkbox"/> | Tight binding may cause shadows or distortion<br>along interior margin / La reliure serrée peut<br>causer de l'ombre ou de la distorsion le long de la<br>marge intérieure. |                                     |   |
| <input checked="" type="checkbox"/> | Additional comments /<br>Commentaires supplémentaires:  |                                     | Continuous pagination.  |

VOL. IV, NO. 19

1888

AUGUST 1

PUBLISHED EXCLUSIVELY IN THE INTERESTS OF THE HONEY PRODUCER

THE CANADIAN



JOURNAL

THE FIRST \$ WEEKLY IN THE WORLD

ONE DOLLAR PER YEAR

THE GREATEST POSSIBLE GOOD TO THE GREATEST POSSIBLE NUMBER

PUBLISHED BY  
THE D.A. JONES CO. LTD.  
BEETON ONT.

ADVERTISEMENTS

WE CLUB

The Canadian Bee Journal and.....		
Cook's Manual, cloth.....	\$2 25	\$2 00
A B C in Bee Culture, cloth.....	2 25	2 00
Quinby's New Bee-Keeping (cloth)	2 50	2 25
Alley's Handy Book (cloth).....	2 50	2 25
Langstroth on the HoneyBee (clh)	3 00	2 75
Heddon's Success in Bee Culture	1 50	1 40
"A year among the Bees," by Dr		
C. C. Miller.....	1 75	1 60
A Bird's-eye view of Bee-keeping		
by Rev. W. F. Clarke.....	1 25	1 15

Books for Bee-Keepers.

We have prepared a series of pamphlets on special subjects relating to bee-culture, containing the best thoughts of our most practical bee-keepers, which we offer at very low rates, as follows:

1. QUEENS, And How to Introduce Them .10
  2. BEE-HOUSES, and how to build them, .15
  3. WINTERING, and preparations therefor .15
  4. BEE-KEEPERS' DICTIONARY, containing the proper definition of the special terms used in Bee-Keeping... .25
  5. FOUL BROOD, its cause and cure..... .10
- Or the whole five books, post paid, for..... .50

THE D. A. JONES CO., LL., Beeton, Ont.

BEE-KEEPERS' LIBRARY.

We keep in stock constantly and can send by mail post-paid the following:—

- "A YEAR AMONG THE BEES," by Dr. C. C. Miller. Price, 75c.
- A. B. C. in BEE CULTURE by A. I. Root. Price, cloth, \$1.25; paper, \$1.00.
- QUINBY'S NEW BEEKEEPING, by L. C. Root. Price in cloth, \$1.50.
- BEE-KEEPERS' HANDY BOOK, by Henry Alley. Price in cloth, \$1.50
- PRODUCTION OF COMB HONEY, by W Z Hutchin-son. Paper, price, 25c.
- THE HIVE AND HONEY BEE, by Rev. L. L. Langs troth. Price, in cloth, \$2.00.
- A BIRD'S-EYE VIEW OF BEE-KEEPING, by Rev. W.F. Clarke. Price 25c
- SUCCESS IN BEE CULTURE as practised and advised by James Heddon—price in paper cover, 50 cents.
- BEEKEEPERS' GUIDE OR MANUAL OF THE APIARY, by Prof. A. J. Cook. Price, in cloth, \$1.25.
- FOUL BROOD, ITS MANAGEMENT AND CURE by D. A. Jones. Price, etc. by mail; 10c. otherwise.
- A. B. C. IN CARP CULTURE, by A. I. Root, in paper 50c.
- HONEY, some reasons why it should be eaten, by Allen Pringle. This is in the shape of a leaflet (4 pages) for free distribution amongst prospective customers. Price, with name and address, per 1000, 3.25; per 500, \$2.00; per 250, \$1.25; per 100, 80c. With place for name and address left blank, per 1000, \$2.75; per 500, \$1.70; per \$50, \$1.00; per 100, 50c.

THE D. A. JONES CO., LL., Beeton.

Barnes' Foot Power Machinery

See advertisement on another page. We have just arranged for the sale of these machines, and we can quote a price F.O.B. cars at Toronto (duty and freight paid thereto). On application we will forward catalogue and pricelist free.

THE D. A. JONES CO., LTD, Beeton, Ont.

PUBLISHERS' NOTES.

We will always be glad to forward sample copies to those desiring such.

Send us the names of three subscribers with \$3 in cash and receive as a premium one C. B. J. Binder.

Send postal card for sample of leaflet. "Honey, some reasons why it should be eaten."

The CANADIAN BEE JOURNAL will be continued to each address until otherwise ordered, and all arrears paid.

Subscriptions are always acknowledged on the wrapper label as soon as possible after receipt.

American Currency, stamps, Post Office orders, and New York and Chicago (par) drafts accepted at par in payment of subscription and advertising accounts.

ERRORS. — We make them: so does everyone, and we will cheerfully correct them if you write us. Try to write us good naturedly, but if you cannot, then write to us anyway. Do not complain to any one else or let it pass. We want an early opportunity to make right any injustice we may do.

We can supply Binders for the JOURNAL 55 cents each, post paid, with name printed on the back in Gold letters.

Subscription Price, \$1.00 per Annum. Postage free for Canada and the United States; to England, Germany, etc. 10 cents per year extra; and to all countries not in the postal Union, \$1.00.

The number on each wrapper or address-label will show the expiring number of your subscription, and by comparing this with the Whole No. on the JOURNAL you can ascertain your exact standing.

ADVERTISING RATES.

All advertisements will be inserted at the following rates

TRANSIENT ADVERTISEMENTS.	
10 cents per line for the first insertion, and 5 cents per line for each subsequent insertion.	
Space measured by a scale of solid nonpareil of which there are twelve lines to the inch, and about nine words to each line.	

STANDING ADVERTISEMENTS.		12 MOS
	3 MOS.	6 MOS
6 lines and under.....	2.50	4.00
One inch.....	\$4.00	\$6.00
Two inches.....	5.50	9.00
Three inches.....	7.00	12.00
Four inches.....	9.00	15.00
Six inches.....	12.00	19.00
Eight inches.....	15.00	25.00

STRICTLY CASH IN ADVANCE

Contract advertisements may be changed to suit the seasons. Transient advertisements inserted till for bid and charged accordingly.

CLUBBING RATES

THE CANADIAN BEE JOURNAL	\$1.75
AND "Gleanings," semi-monthly.....	1.75
"American Bee Journal," weekly.....	1.75
"American-Apiculturist," monthly.....	1.40
"Bee-Keepers' Magazine," monthly.....	1.40
"Bee-Keeper's Guide," monthly.....	1.40
"Rays of Light".....	1.40
"The Bee-Hive".....	1.40
"Beekeepers' Review".....	1.40
"Beekeepers' Advance".....	1.40

TO CONTRIBUTORS

Communications on any subject of interest to the Bee-keeping fraternity are always welcome, and are solicited.

Beginners will find our Query Department of much value. All questions will be answered by thorough practical men. Questions solicited.

When sending in anything intended for the JOURNAL do not mix it up with a business communication. Use different sheets of paper. Both may, however be enclosed in the same envelope.

Reports from subscribers are always welcome. They assist greatly in making the JOURNAL interesting. If any particular system of management has contributed to your success, and you are willing that your neighbors should know it, tell them through the medium of the JOURNAL.

# TABLE OF CONTENTS.

	PAGE.
Apiary, Our Own.....	366
Apiculture, Reports of Some Experiments in.....	371
Artificial Comb Honey.....	370
Editorial.....	365
Feeding Back.....	371
Foul Brood.....	369
"    Another case of.....	375
Season, thus far, The.....	367
Some matters of Interest.....	368
Yield at Oshawa, The.....	369

## Headquarters in the West for Pure Italian BEES & QUEENS.

Two-frame nucleus, untested queen, in May, \$2.50; June, \$2.25; after, \$2.00; 3-frame, in May, \$3.50; June, \$3.00; after, \$2.50. With TESTED queen, add 50c. more. Bees, per lb., in May, 90c.; June, 75c.; after, 60 cts. Untested queens, in May, \$1.00; after, 75c.; six, \$4.00. Tested, in May, \$1.50; after, \$1.25. Write for circular of Bees, Queens, Sections, Foundation, etc. 6-3 mos. Address JNO. NEBEL & Son, High Hill, Mo.

### FRUIT PRESERVED WITHOUT HEAT I

TIME, LABOR AND MONEY

SAVED BY USING THE

## Perfect Fruit Preservative.

Fermentation absolutely prevented. Simple, Reliable, Harmless. PRICE 25 CENTS per box.

Sold by Grocers, or supplied by

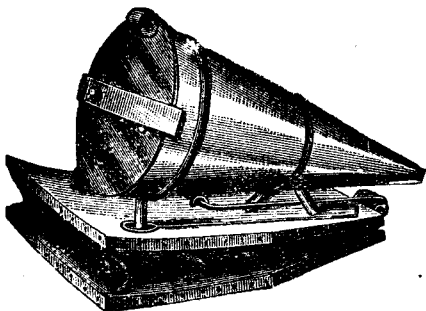
**BOOTHE BROS.,**

Props., TORONTO.

Or  
The D. A. JONES CO. Ltd.,

BEETON.

## CLARK'S COLD BLAST SMOKERS.



We are making these, with late improvements, and can forward them by mail or with other goods by return post. The prices are as follows:

Each .....	With goods. By mail.
6 at one time, each .....	50c. 70c.
	45c.

THE D. A. JONES CO. Ltd., Beeton, Ont

## COMB FOUNDATION I

At hard pan prices.

**WILL. ELLIS,**  
ST. DAVIDS, ONT.

**My 20th Annual Price List** of Italian, Cyprian and Holy Land Bees. Queens and Nuclei Colonies (a specialty); also Supplies—will be sent to all who send their names and addresses.

**H. H. BROWN,**

LIGHT STREET, Columbia Co., Pa.



**ITALIAN BEES AND QUEENS.** Two or three Frame Nuclei or Full Colonies at lowest price. Every Queen bred from Imported stock and guaranteed second to none. Address

**E. HEAL,**

LINDEN APIARY,

ST. THOMAS, ONT.

## SEND US \$2.50

And we will send you a good serviceable man or boy

## Nickle Keyless Watch,

And FOREST AND FARM for one year.

The livliest and Best Weekly Paper published in the Dominion. Send your address for sample copy and full particulars. Special terms to bona fide canvassers.

FOREST AND FARM,

CHAS. STARK, Publisher, 50 Church St., Toronto.

## -Comb Foundation-

Having purchased one of the best machines I am ready to receive wax to manufacture or buy. Pure Italian bees, queens and comb foundation for sale. Agent for the D. A. Jones Co. supplies. Can ship by C.P. Ry or H. & N.W.R., (now G.T.) and by Dominion or American Express.

**H. COUSE.**

Cheltenham, Ont., April 5th, 1888.

## "FEEDING BACK."

There was probably never before gathered together so much reliable information upon the above subject as is to be found in the

THE BEE-KEEPERS'

## REVIEW.

For July. If you have, or expect to have, unfinished sections, read this number. If you have failed to make a success of "feeding-back," its perusal may show you where you made your mistake. The August issue will be a "Fair No."

Price of the REVIEW is 50 cents a year. Sample free. Back numbers can be furnished.

THE PRODUCTION OF COMB HONEY.

A neat little book of 45 pages, price 25 cents. The REVIEW and this book for 65 cents. Stamps taken either U.S. or Canadian. Address

**W. Z. HUTCHINSON,**

613 Wood Street, Flint, Mich.

## BEE-KEEPERS' PRINTING.

We make a speciality of Apiarian Printing, and have unequalled facilities for Illustrated

### Catalogue and Label Work.

Note these figures, which include printing.

	500	1000
Note Heads, good quality.....	\$1 15	\$1 90
"    linen.....	1 25	2 00
Letter Heads, Superfine.....	1 75	2 50
"    Linen.....	2 00	3 25
Envelopes, business size, No. 7,		
white.....	1 15	2 00
Extra quality.....	1 35	2 25
Business Cards.....	1 50	2 50
Shipping Tags, 40c., 45c. and 50c. per 100.		

Our new book of labels contains nearly 100 specimens of elegant honey-labels. Write for prices for any printing required.

THE CANADIAN BEE JOURNAL,  
BEETON.

## EXCHANGE AND MART.

Advertisements for this Department will be inserted at the uniform rate of **25 CENTS** each insertion—not to exceed five lines—and 5 cents each additional line each insertion. If you desire your advt. in this column, be particular to mention the fact, else they will be inserted in our regular advertising columns. This column is **specially** intended for those who have bees or other goods for exchange for something else, and for the purpose of advertising bees, honey, etc. for sale. Cash must accompany advt.

**40** Hybrid and Mismatched Queens for 35c. each or three for \$1.; also 10 Black Queens per 25c. each. R. E. SMITH, Tilbury Centre.

**W**ILL exchange one new Stanley Reversible Honey Extractor, with four frames, suited for L. or Simplicity frames, for comb or extracted honey or wax.—R. E. SMITH, Box 72, Tilbury Centre, Ont.

**HONEY**!—We can take all that offers in exchange for supplies, at prices found in another advertisement in this issue. THE D. A. JONES CO., Beeton, Ont.

**\$1 00** Will secure you by mail, post paid, 250 Noteheads and 250 Envelopes with your name, business and address printed on the corner of each. Send in your order now. THE D. A. JONES CO., Beeton, Ont.

**U**NTTESTED Italian Queens, daughters or granddaughters of that choice queen purchased from G. M. Doolittle, which was selected out of 600. The above will be reared chiefly from natural swarming cells. Price \$1 each. G. A. DEADMAN, Druggist and Apiarist, Brussels, Ont.

## SECTIONS! SECTIONS!

At low prices, and sample free. Send card for sample. Received first prize for

### COMB FOUNDATION!

Toronto Exhibition, 1887. Brood and Section Foundation by return express. All kinds of Bee-keepers' supplies,

S. P. HODGSON & CO.,  
Shelburne, P.O., Ont.



## Italian Queens!

Untested, May, \$1.25; June, \$1.00; July, 80 cts. Send for 16 page ILLUSTRATED PRICE LIST of Bees, Queens, Chaff Hives, Barnes Foot-power Saws, Langdon Miter-Boxes, and Apiarian Supplies. Address

WILLIAM E. GOULD,  
Fremont, Newaygo Co.  
5-3 mos Michigan.

## E. L. GOULD & CO., BRANTFORD, ONT.

All kinds of Bee-keepers' Supplies. Sole dealers in Canada of Dadant's Comb Foundation.

### CANADIAN HONEY PRODUCER!

Monthly: June, July and August (3 months) for 10c. Send for Price List, free. Queens for Sale.

## NEARLY 30 TONS OF DADANT'S FOUNDATION

SOLD IN 1887.

IT IS KEPT FOR SALE BY MESSRS.

T. G. NEWMAN & SON, Chicago, Ill.  
C. F. MUTH, Cincinnati, O.  
JAMES HEDDON, Dowagiac, Mich.  
F. L. DOUGHERTY, Indianapolis, Ind.  
CHAS. H. GREEN, Berlin, Wis.  
CHAS. HERTEL, Jr., Freeburg, Ill.  
E. L. ARMSTRONG, Jerseyville, Ill.  
E. KRETCHMER, C. burg, Iowa.  
M. J. DICKASON, Hiawatha, Kans.  
ED. R. NEWCOMB, Pleasant Valley, N.Y.  
J. W. PORTER, Charlottesville, Va.  
I. B. MASON & SONS, Mechanic Falls, Me.  
DR. G. L. TINKER, New Philadelphia, O.  
D. A. FULLER, Cherry Valley, Ills.  
JOS. NYSEWANDEK, Des Moines, Iowa.  
G. B. LEWIS & CO., Watertown, Wis.  
PAUL L. VIALON, Bayou Goula, La.  
B. J. MILLER & CO., Nappanee, Ind.  
J. MATTOON and W. J. STRATTON, Atwater, Goddell and Woodworth Mfg. Co., Rock Falls, Ills.  
J. A. ROBERTS, Edgar, Neb.  
OLIVER FORSTER, Mt. Vernon, Iowa.  
GEORGE & MILTON, Fremont, Mich.  
J. M. CLARK & CO., 1409 15th St. Denver, Col.  
E. L. GOULD & CO., Brantford, Ont.  
and numbers of other dealers. Write for SAMPLE FREE and Price List of Bee Supplies. We guarantee every inch of our Foundation equal to sample in every respect. Everyone who buys it is pleased with it.

CHAS. DADANT & SON,  
HAMILTON, Hancock Co., Ill.

## BEE-KEEPERS!

**S**AVE money by printing your name and address on your labels, cards, etc., yourself. Your name on Rubber Stamp, 15c. Name and address, 25c. Any number of lines at 15c for first, and 10c for each extra line. If ink and pads are wanted with stamp, add 15c to these prices. Club amounting to \$1.25 sent for \$1. If you send sample of any name printed, to give us an idea of the size and shape you want we can suit you.

Gem Rubber Stamp Co.,  
MALAKOFF, ONT.



"THE GREATEST POSSIBLE GOOD TO THE GREATEST POSSIBLE NUMBER."

VOL. IV. No. 19

BEETON, ONT., AUG. 1, 1888.

WHOLE No. 175

## EDITORIAL

WE have received the premium list of the tri-state fair to be held at Toledo from the 27th August to September 1st inclusive. Dr. Mason is the superintendent of the Apianian department. The list of prizes is not so large as it was last year, owing we presume, to the fact that the larger exhibition is being held at Columbus.

The total value of the honey imported into the United Kingdom during the month of June, 1888, is £1739.

A new paper devoted to bee-keeping is published in Spain, the name of which is *Revista Apicola*. It is edited by Francis F. Andreu, and treats of modern bee-keeping.

The *British Bee Journal* gives the following remedy for bee stings: Drop one drop of phenol diluted in water on the place stung; moisten with alum and rub for a for a few seconds, and the pain will disappear quickly.

From the *British Bee Journal* we learn that Mr. J. M. Hooker is about to publish a new work on bees. Mr. Hooker has been a member of the British Bee-Keepers' Association since its formation, and has acted as a judge in all parts of the United Kingdom, and has carried

off a great many prizes. We may, therefore, expect that a work from his pen, embodying the practical experience of many years will prove acceptable to all bee-keepers.

Since we last noticed the *Bee-Keepers' Advance* as having taken over the publication of the *Feathered Home*, they have added another poultry paper to their list, namely the *Poulterer*. The three papers, the *Advance*, *Poulterer* and *Feathered Home* are consolidated, and the publishers are getting out a really creditable sheet.

Sometime ago we heard that certain parties were raising the report that Dr. Shaver's bees had foul brood. At that time the Dr. wrote us asking us to come and visit his apiary and examine every colony thoroughly, and if there were any signs of foul brood to so state it in our columns. He also generously offered to pay all expenses connected therewith, as he did not wish certain parties to be circulating stories about him when he knew they were unwarranted. We feel perfectly sure that his apiary is quite free from the disease and that a little brood got chilled, which may have given rise to the unwarranted statements. The Dr. also described very fully to us the circumstances and particulars connected with his apiary. We think that he is a very close observer and thoroughly posted, and we feel certain from his statements that he was correct in his

views. We replied to him that we did not think it was necessary to go and examine them, but if he so desired he might get two bee-keepers to examine them and select the worst samples and the most suspicious pieces of comb so that we might inspect them and report. To-day a box arrived containing the samples of comb as requested. We will here state that there is no appearance of foul brood in any of the specimens sent. We are satisfied that the reports are quite false. We hope, however, that no injury has been done him, for it is bad enough to be accused of having the disease in one's apiary when it is true, without being accused innocently.

#### OUR OWN APIARY.

GOOD FLOW SINCE LAST ISSUE.

**L**AST week we mentioned that the bees were just commencing to gather honey and we are pleased to be able to report that they have continued to increase their stores ever since. Some of them seem inclined to swarm, and are only prevented by giving them plenty of room, which appears to stop all further preparations in that direction. This day (July 28) the basswood has ceased to yield entirely and the bees appear to be working on the thistles with more energy than any day yet. It is certainly gratifying to think that there is, at least, some little good in Canadian thistles, and as we pass along fields of oats and peas, or any other late crop where they are thick, the odor from their nectar seems to fill the air: Who has not been delighted, when passing a field of clover, if it were yielding very plentifully, and the air was fragrant from the flowers. Perhaps there is no plant which will make the air more fragrant and produce more honey, when the season is suitable, than Canadian thistle. Some fields could be distinctly traced, for more than half a mile if there was a slight breeze, by the odor in the atmosphere. Passing on through one of these fields we are delighted to see a bee on almost every flower, filling themselves with honey and returning to the hives. There are a great many buds just starting and should the weather continue favorable, as it now is, we may have a flow of honey for about a month to come. This would

place our bees in very fine condition and give us surplus besides. The kind of weather that is most suitable for a good flow of thistle honey is plenty of warm rain. The ground cannot be saturated too much, and we do not want hot scorching suns. When the sun is too hot it seems to dry up the nectar and prevent the secretion, killing the flowers or causing them to blight, but with plenty of moisture and pleasant balmy air, or a cloudy sky preventing the sun from shining part of the day is preferable, and even when the sky is cloudy for days, so that the sun scarcely shines for an hour in the day, the nectar seems more plentiful. Cool nights are not unfavorable to its production, as the thistle seems to yield more honey with a cool temperature than almost any other flower. With some fall flowers, such as bone set, a slight frost does not seem to prevent the secretion of honey, as the bees will work on it all right. Those who have been very much discouraged and downcast should begin to cheer up as the prospects brighten. Bee-keepers should always remember the old saying "that it is the darkest just before the day," and if we have trials in our business, we should live in hopes that a kind Providence will smile upon those deserving, and that all things are for the best, if we can only see it in that way. No doubt, a great many of our bee keepers will remember the great scare there was as to what we should do with our honey; how we should find a market for it; what we should do to establish a foreign market. Now our markets are bared of honey. Instead of us having to hunt customers they have to hunt us. We have raised the price of honey and perhaps it will continue to rise, and the very fact of the scarcity of honey and the increased price that consumers will have to pay will be, we hope, a lasting proof that we do not manufacture it, but that we have to depend on natural sources for our supply. While it will show us that we need not fear the market, it will convince the consumer that the price he pays is made by the production. Some argue that the price can never be raised. We are charging \$1 per 60 lb. can more for it than we were last year. Customers are glad to get it. After all the loss of the fore part of the season, we will be able

to reap much gain indirectly, and we hope that we are now over the worst of our trials and that a bright future is awaiting those who do not get discouraged and give up the business in disgust.

#### BASSWOOD STILL YIELDING.

Just as we go to press to-day (the 30th July) we find to our surprise that basswood is still yielding in some localities. Some trees which we examined on high dry ground were not yielding on the 20th, but we find the bees gathering very rapidly from trees in shady localities where the land is moist, and along the creek bottoms the trees are just swarming with bees, and we even found some buds not yet open so that we may expect a little for a few days to come. The weather is also very favorable for the Canadian thistle yield. On Saturday and Sunday (the 28th and 29th) they were storing very rapidly from that source also.

#### LARGE FINE QUEENS.

Our foreman just tells us that we have got the largest stock of the finest queens that we have had this season and we could send out one or two hundred by return mail. In fact the queens which are hatching now are much larger, finer and brighter than those bred earlier, the weather being so much more favorable for breeding purposes.

#### THE SEASON THUS FAR.

**B**ELOW we give reports which have been received since the last issue of the JOURNAL, for Ontario. Next week we hope to be able to present reports from Quebec and the eastern provinces. In about a month we hope to hear from our correspondents again, and trust that the reports will be more favorable.

#### LANARK.

**CARLETON PLACE.**—Us to the present date there has not been any honey taken in this district. The prospects for a fall flow are poor at present. There have only been six or seven swarms in this district. They would not swarm, no matter how many bees there were in a hive. Thistle is just in bloom, and perhaps we may get a taste.

#### MIDDLESEX.

**PARKHILL.**—I have twenty-one colonies, have

taken sixty pounds per colony. Consider the prospects for fall flow good.

#### MIDDLESEX.

**MAPLE GROVE.**—I started the year with 14 colonies, have increased to 24 with very little honey coming in. In fact honey around here, and in London township this year will be nothing but a total failure. Bee-keepers who have been in the business for years say it is the worst season they have known. I see a good deal said about queen-excluders, wooden and zinc. I have tried both and find the zinc is by far the best. Indeed, a year like this, when honey is so scarce the wooden ones are not worth the trouble of putting on.

#### WATERLOO.

**KOSSUTH.**—I have not taken any honey. White clover a complete failure. Basswood in blossom, bees bringing in some honey from it. They have not sufficient for winter yet. Not likely to have any fall flow in this locality. Have had very few swarms. Increased by the nuclei system. Have in all 112, will likely double them up to 80 or 85 unless more honey comes in than I expect.

**LINWOOD.**—From my stock of 23 colonies I have had 15 swarms and could have had many more, but when the 1st July came I thought it was too late, so I went through a number and cut away all queen cells. We will have extracted over 100 pounds before this reaches you; I expect to extract 100 more. I have taken off some 30 pounds comb honey and have several cases nearly ready to come off, but the season here is very disappointing. White clover flourished well, but yielded but little honey. Spring crops are magnificent; fall wheat poor.

#### WELLINGTON.

**ELORA.**—I went into winter quarters with 60 colonies and came out with 54, but spring dwindle took about one-quarter of the surviving ones. Were not up to the standard of former years, and I sold six of the best, which gave the purchaser good satisfaction as they all swarmed one good swarm each, which they were warranted to do. I have now fifty colonies all told and I don't want any more this season, and all I have do not seem to be able to support themselves, for I keep strong colonies on the scale and find it is getting less each week. They work a little in the morning, and in the evening they cluster about as though there was nothing worth going after. My wife sowed some poppy seed for the sole purpose of seeing the bees show their agility on them, and the mean little fellows refused to give her a free exhibition after all her trouble,



till it rained a little and then they gave us a free show, but as for honey I never heard such a universal cry about nothing coming in, and I have talked to a good many bee-keepers, and some have come out squarely with the truth, no honey this year, and some have felt sick like your humble correspondent. I have taken less than seven pounds per colony spring count, and I am almost certain that I will have to feed back twice as much if the thistle does not secrete more nectar than it did last year, but in my locality they promise well, by their abundance, if that is any consolation. I have raised the price of my honey to 25 cents. The prospects for a fall flow are not good for me.

For the Canadian Bee Journal.

### SOME MATTERS OF INTEREST.

#### HONEY FROM CORN, ETC.

**D**O bees gather honey from corn? is a question that I have never seen satisfactorily answered. It seems more probable to me that the abundance of pollen produced by this staple plant is the chief attraction to the swarm of bees that visit it in the early part of the day, and until the dawn has been dissipated by the heat of the sun. This morning I walked through a field of corn standing at least ten feet high, and coming fully into bloom or "tassle" as our farmers would say. The bees were working in swarms on the bloom, and as I looked toward the rising sun the air was loaded with floating pollen, dislodged, no doubt, by the rapid motion of the wings of the bees as they plied their busy vocation. Underneath the busy workers the fresh, dewy "silk" waved from the well-formed "shoots," and here was a clew to the designs and plans of the author of all economy. The fresh dewy pollen, and maybe some tempting nectar, attracted the bees, and the fanning motion of the bees' wings set the pollen free to float in the air and to so fill all space that scarcely a single one of the millions of silken "tubes," waiting to receive the magic touch, will fail to accomplish its mission. As a general thing I believe that plants that bees visit for pollen yield also some nectar, but corn may be an exception, as the motions of the bees when working on the corn bloom are not favorable to the belief that they find nectar in any paying quantity.

#### THE COMMON MILK WEED.

I know of no blooming plant that is so eagerly sought by the bees as is this rank and intoxicating weed. To my ideas the bloom of this weed has a beauty peculiar to itself, and a light "sniff" of its strong and characteristic odor is rather pleasant to me than otherwise. I never knew my

bees to gather a sufficient quantity of honey from the milk weed to impart to the surplus its distinct flavor, but in one season, and that was in the rainy season of 1882. I got some milk weed honey that season, and it was so strongly flavored with the peculiar odor of the bloom that I imagine but few people would be pleased with it.

A clump of this weed is growing in sight of where I am now writing, and a few minutes ago I counted seven bright Italian bees, all trying to monopolize a single cluster of its bloom. This weed has a peculiar effect on some of the bees while searching for its sweets. But these effects are only noticeable when the atmosphere is sluggish and humid. I have often seen bees overcome by its intoxicating odor, just like they had been drinking "red liquor."

Whether or not they recover from their stupor I have not been able to ascertain. The fact that some of these stupified bees are found nearly motionless on the milk weed in the early morning, having "laid out" over the night, has led some people into the error that it is the habit of bees to stay out during the night.

#### SWEET CLOVER.

Sweet clover is a great honey plant wherever it can be induced to grow. But the assertion so often made, that it will grow anywhere, is about as far from the truth as anything can be. I have scattered the seeds in waste places year after year, and I could carry every plant under my arms at one load that has grown in the waste places. I at one time sowed an acre of land with imported seed, and not a plant came to maturity. At another time I sowed the seed with red clover on an eight acre field, and there was but one small plat of ground in the field where the sweet clover took hold and flourished. Three years ago I sowed a small meadow with red clover and timothy, and mixed four or five pounds of sweet clover seed with it. The result is I have about two rods of the sweet clover all in one patch; the rest was a clear failure. I would consider the sweet clover plant a great acquisition to our bee forage if it could be spread to any extent. I have known it to be grown as a yard and garden plant in a "bed," for years and years without its spreading in the least.

#### RENDERING WAX BY THE HEAT OF THE SUN.

The editor of the CANADIAN BEE JOURNAL raises a doubt as to whether the heat of the solar wax extractor is sufficient to destroy the germs of the so-called foul brood. In the first place nobody ought to have foul brood among his bees. I have never seen anything resembling the disease and if it should turn up in my apiary I would make a "clean sweep" of it. But I am quite sure

that the heat generated by my solar wax extractor would destroy any living organism.

G. W. DEMAREE.

Christiansburg, Ky.

For the Canadian Bee Journal.

### FOUL BROOD.

I HAD NO FOUL BROOD IN 1885.

ON page 329 of the C.B.J. of July 18th, 1888, I see a big mistake in my letter. It reads, "I lost over fifty colonies with foul brood in the summer of 1885." That 1885 should be "eighteen seventy-five." It is thirteen years since I had foul brood and lost over fifty colonies with it. I have not had any of it since, and NEVER expect to have it again. If I do I will cure it in the honey season.

On page 327 we have a letter from "Ena" on "dead brood." If I had a colony with such dead brood as his, in the honey season I would remove the queen to a good nucleus, and then as soon as the most of the brood was hatched I would take out the combs and give them another set. The combs with dead brood in which I took out, I would send to the wax extractor. I would then extract each evening for four days, so as to get away all the honey which the bees took when I removed the dead brood. After that I would put in nucleus and queen with them and all would be right. Bees that are raised in cells that brood lately rotted down in, will have to consume their food and the remains of a rotten bee, and that is the real cause of foul brood. When foundation is so cheap we should never either put combs with dead brood in into a colony or keep them there to have brood raised in rotten cells.

Wm. McEvoy.

Woodburn, July 20th, 1888.

For the Canadian Bee Journal.

### THE YIELD AT OSHAWA.

PACKED sixteen colonies last fall on their summer stands, and all wintered in good condition, some of them being much stronger in the spring than when packed. Some queens were laying in February, as I could frequently find immature brood at the entrances that had been pulled out of the cells; young drones were noticed early in April. Some may object to have such early brooding on account of being hard on stores, nevertheless it is what I want, for I find that in this locality the honey crop has got to be taken from fruit bloom principally, therefore I pack my bees to brood early, and come out strong in the spring ready for the harvest.

The season opened here about ten days later than last year. Bees commence to work here first on swamp willow which this year yielded honey for four or five days. The weather being fine this was soon followed by the yellow willow, which also did well for several days, along with elm; about the 19th or 20th of May the hard maple commenced to yield and it fairly poured out nectar for three or four days in a nice warm sun without any wind. Upon examining hives at the commencement of the flow, I found them full of bees and brace comb being built, and on putting on sections the bees were right into them, and those sections that had drawn comb are partly filled with maple honey. The maple flow was soon followed by dandelion and the apple bloom, the bees preferring the apple bloom, which was one of the finest we ever had, at the close of which several colonies were capping over their surplus. When there was a lull for about a week or ten days, then the raspberry commenced to open out. On the fifteenth of June my first swarm issued, followed by others for a few days till I had fourteen swarms. My first swarms have filled their hives and given me partly filled surplus cases. Some of the last ones will not fill up. Up to the raspberry bloom the season was all that I could desire, being nice sunny weather and no high winds to dry up the nectar. The bees had a good chance and they improved the opportunity. The dry weather seriously injured the berry flow which I was depending on, as in former years, for a crop of honey. The few trees of basswood near here yielded well, but they are like hen's teeth, almost.

White clover, also, don't amount to much around here. A little grows around the back streets of the town. Some years it won't yield any nectar, owing to cool nights and cold day breezes off the lake; as for alsike it is of no account at all. There are not ten acres of it grown for seed within five miles of here, the farmers prefer red clover. The result of my operations this season, will be a little over three hundred pounds of comb honey and about twenty-five or six colonies to go into winter quarters. I had been calculating on over eight hundred pounds and forty colonies, but—"The best laid plans of mice and men gang aft aglee."

W. H. KIRBY.

Oshawa, July 27, 1888.

For the Canadian Bee Journal.

### FOUL BROOD.

ANSWERS TO MR. MCEVOY'S QUESTIONS.

REPLYING to Mr. McEvoy's questions on page 330 of your issue of 18th July, I would say: (1) The bees as a whole were in good condition when put into cellar. In one or two cases some dampness had found its way in through the lid by the searching

medium of slushy snow. (2) The date of putting in was 24th November, and the temperature about 42°. In February the temperature got down for a few days to within one or two degrees of the freezing point, but was raised again by means of a coal oil stove. (3) Cannot say as to their breeding in early part of winter; was not living on the premises, and on my flying visits just made as little disturbance as possible. Jones hives were put on seven and eight combs—Langstroths on eight and ten. Having answered these queries, I would add, in reference to my last letter, that in two of the hives referred to I find now a cell or so of brown ropy matter. The fact that I bought empty combs and hives along with the unfortunate "foul broody" bees in Port Elgin last year and ran quite a number of swarms on to the combs before I discovered the danger, makes it impossible to say positively that direct contagion is not the cause in these cases and so complicates matters, but where the trouble is "dead brood" alone I am inclined to the belief that it had its origin in the cellar, the use of part of which was merely given me as an accommodation, and as I was not inclined to trespass more than necessary upon the room the bees were crowded up and partitioned off in one end; there was no circulation of air, and towards spring lots of a large quantity of apples piled on the floor were decaying and the smell from the bees was quite heavy and unpleasant, while there was some dampness in their end. A few hives (especially weak hives) shewed the early stage of the disease on being taken out in spring, and were destroyed.

Another strange fact I might mention regarding a hive starved for foul brood beginning of this month, and where the starving was literal that about half of the bees perished, is that I now find a "Dead Brood" in one of the new combs. Possibly the trouble is with the queen, some kind of "fever and ague" in her bones, which only medication of herself will remove.

E.N.A.

For the Canadian Bee Journal.

## ARTIFICIAL COMB HONEY.

**A**S we are among the bee-keepers the most opposed to adulteration, having circulated, ten years ago, at our own expense, a petition to the Congress of the United States signed by more than 30,000 names, asking for a law against adulteration of honey; besides, as we have suffered from the Wiley lie since we produce honey and manufacture comb-foundation, and as many visitors, after seeing our shops, asked for the privilege of being shown how to put glucose in the combs, we desire to review the article of Mr. Wiley published in the C. B. J. of July 18.

Mr. Wiley, after reproducing the following sentence:—"In commercial honey, which is entirely free from bee mediation, the comb is made of paraffine, and filled with pure glucose, by appropriate machinery," adds: "In the article in question I do not give my authority for the above." Then he tries to put it on the shoulders of another chemist, who is dead.

Was the article signed by Mr. Wiley? Yes! Then he cannot get rid of the responsibility for what it contains. Was the above sentence true or false? False. Then it was a lie. Was this statement defaming the bee-keepers and injuring their trade? Yes. Then Mr. Wiley was not only a liar, but a slanderer and an evil-doer.

Of course such accusations will not reach Mr. Wiley, for he thinks himself so much above all of us bee-keepers that he writes:—"I take no notice of attacks made upon me in language which excites the possibility of its author being a gentleman."

This haughty phrase reminds me of a thief who, in a crowd, became angry against a man who had seized his hand in his pocket, insulted him, and played indignation, till the policeman found on him several watches and handkerchiefs. Mr. Wiley, who has slandered the bee-keepers, accused them of malicious slanders. Such accusation would be risible if not so bad; especially as it comes from a man who, by mistake probably, has been appointed to the high position of chemist of the U. S.

He writes that, while writing the sentence, he did not believe in the possibility of manufacturing comb honey, and he adds that he did not seek to purposely pervert the truth! He is wonderfully skilful if he can reconcile these propositions with one another.

To my mind, when he wrote the statement he was convinced of its truth. No doubt a buffoon had taken him as his dupe, and now that the absurdity of such an idea is demonstrated, fearing to be held as destitute of common sense, he denies it. But supposing that he wrote it as a good joke; then he lowered himself to the level of a clown, forgetting that the duty of a professor is to act so as to be considered, by the pupils, as altogether respectable and truthful. Who can accept as true the teachings or experiments of a man guilty of such a lie.

He continues, adding that adulteration of honey is practised to a most alarming extent in this country. Such affirmation is but the continuation of his lie, for if so much adulterated honey is manufactured, how is it that so little honey can be found now on the market. Yet, as the bee-keepers last year have had a poor crop it would be just the time for the adulterators to come forward. But the actual low price of honey hinders adulteration.

Nearly as soon as Mr. Wiley was in office at Washington, he published a number of chemical experiments in which he seems to have aimed at proving that nearly all the honey offered is adulterated, for he pronounced as adulterated, or *probably adulterated*, the products of several bee-keepers who are above suspicion.

We will conclude our article in adding that, as soon as Mr. Wiley saw that his lie was accepted as a truth by several journals, his strict duty as a scientist, as a professor, even more, as an honest man, was to write without delay to these

journals that such artificial comb-honey had never been, and could never be, made. Did he take this trouble? No. Then, in this also, he showed either his lack of discernment as to what is right or wrong, or that he was not then altogether certain that such honey could not be manufactured, or that he did not care for the consequences of his slander.

Therefore, by his conduct in the whole affair, he deserves the scorn of all the bee-keepers of the United States, and of all those who despise the liar and slanderer!

CHARLES DADANT & SON,  
Hamilton, Ill., July 24, 1888.

From the Bee-Keepers' Review.

### FEEDING BACK.

**W**HETHER feeding back to secure the completion of partly filled section pays, in the long run, I shall not now attempt to decide, but shall content myself with suggesting three or four points which must be maturely considered before the question can be rightly determined.

First, the honey thus produced is never, I think, of the finest quality. I always imagine it to have a flavor foreign to comb honey produced in the ordinary way; and, at least, it candies readily, which alone is likely to place it among the lower grades of honey. Secondly, when it becomes noised abroad that comb honey is produced by feeding the bees, consumers will be startled, and the markets will be affected more or less; and the sale of candied comb honey will have even greater effect upon the market. The inexperienced will buy it unawares and the purchase by them of no more honey of any kind would be a very natural result. Thirdly, to be a success, feeding-back must be done in the interval between basswood and fall flowers, when, of all the year, the weather and the bees are the most trying—a combination which makes the labor very undesirable. Fourthly, if foul brood should find a lodgment in an apiary, and remain for a time undiscovered by the apiarist, nothing else would spread it so rapidly and so effectively as feeding back.

Were it not for these troubles me matters, feeding-back to make partly filled sections available for the market, would no doubt, be profitable. To test the matter somewhat, three years since, I fed one colony extracted honey sufficient to complete three cases of sections—not sections partly filled but new sections with foundation. When completed I found I had fed 124 pounds and had in three cases 78 pounds of comb honey in fine shape. There was not a pound of honey in the brood chamber either when the experiment was begun or when it ended. In this case there was perhaps profit enough, as markets usually are, to pay for the labor involved besides leaving the colony in greatly improved condition.

Now, suppose I had varied this experiment by taking six cases partly filled, containing, say 60 pounds of honey. As the foundation would be well drawn out, and consequently the honey more rapidly stored, I estimate that the 124 pounds would have been sufficient to complete the cases and turn out at least 150 pounds of well-capped

comb honey. We may approximate the profit by comparing the expenses with the result. The 60 pounds of unfinished sections would be worth not more than the extracted honey, which being added makes 184 pounds at, say 8 cents giving an expense of \$14.72, which, taken from \$24, the value of 150 pounds of comb honey at 16 cents, leaves a profit of \$9.28, or 63 per cent. The improved condition of the bees and, the increased salableness of the product may be considered an equivalent for the necessary labor.

To insure the largest success I have found that the following several particulars must be faithfully observed.

First—If separators are not used, it will not do to put the unfinished sections into cases haphazard. The comb of some must be trimmed and sections equally worked out must face each other in order to secure shapely sections of honey.

Secondly—Fairly strong colonies of proper characteristics must be selected for the work. Italians will not do well. So far as my experience goes, a cross between the Italian and the black, with the blood of the latter predominating, rather than that of the former, is best.

Thirdly—The brood chamber must be contracted to the capacity of five L. frames.

Fourthly—The work must be done during warm weather and should be undertaken promptly on the cessation of the flow from white clover and basswood.

Fifthly—The feeders must be kept constantly supplied with honey, which, I think, should not be diluted, but fed as it comes from the extractor.

The feeders should be capacious, the one known as Heddon's is far the best—and are to be placed immediately above the sections.

By observing these hints and the dictates of sound common sense any one may, I think, attain fair success; but as I have intimated the work is not a pleasant one, and it is well worthy of consideration whether it would not be better to keep a few more colonies and thereby obtain equal results with less of wearing labor.

R. L. TAYLOR.

Lapeer, Mich., June 22 1888.

From the American Bee Journal.

### Report of Some Experiments in Apiculture.

#### STARVED BROOD.

**A** DISORDER which has been quite common in several States during the past season is resultant from conditions prevalent during severe and protracted drouths, and long periods of extremely high temperature, such as has existed over large areas.

The disorder is significant and important, not so much on account of the actual numerical loss entailed upon colonies affected, which in my own case, and in many cases reported to me, have been severe, as in furnishing proof of failure on the part of those food elements indispensable during the breeding season to meet the large

demand for larval food, and essential in maintaining the health and vigor of the bees while the digestive and secretory organs are being taxed to the limit of their capacity. This failure of natural resources results in low vitality, susceptibility and predisposition to disease, and inability to successfully perform the function of hibernation. With some exceptions, due to local advantages, throughout the States stricken by the drouth of the past summer, the bees have entered upon the period of hibernation under conditions more or less unfavorable in proportion as they have suffered in greater or less degree from the effects of the all-consuming drouth and heat.

The symptoms of starved brood are distinctively characteristic. Upon opening the hive a slightly offensive odor may be noticed if the colony has been suffering for some time. If the comb frame be lifted from the hive, and the bees shaken off, few if any eggs can be found. Of such brood as is sealed, the cappings to be thin and flat, and slightly sunken, and commonly of darker color than is usual in prosperous colonies. Upon opening the cells they are found to contain dead pupæ in various stages of development, always inferior in size, and the food supply exhausted.

In the midst of sealed brood patches of uncapped larvæ appear, and sometimes a patch of 5 or 6 inches square, and sometimes there seems to have been no effort made towards sealing half the grown larvæ in the hive, although the time for such sealing may be far overdue. The membranes of such larvæ do not present the plump, pearly-white appearance common to well fed larvæ. On the contrary, the membranes are more or less shrunken and wrinkled, and not infrequently, when the larvæ have reached the advanced pupa stage, the compound eyes begin to color, and the cells are partially capped and then abandoned, and the appearance is that commonly designated by the term, "bald-headed bees." Sometimes a few of these bees, dwarfed in size, emerge from the cells and engage in the hive with what vigor and for such term as their limited development will permit.

In a number of tests made during the past season, the progeny of the same queen, reared under directly opposite conditions of larval growth, so varied in size as not to be recognizable as offspring of the same progenitors. The reason for this variation was not far to seek. The changed conditions of the colony during the time when the different generations were being reared, determined the modification in development. The remedy I used and prescribed for others was a preventive rather than a curative.

Starved brood means starved bees. If the cause be removed, the effect speedily disappears. All that needs to be done is to supply them with a substitute for these resources essential to their own health and vigor, and indispensable in brood-rearing, in search of which they are rapidly and vainly wearing out their vitality.

The recipe for preparing the remedy is as follows:

To 10 pounds of sugar add half a pint of dairy salt, 2 table-spoonfuls of soda, 2 table-spoonfuls rye flour, 2 table-spoonfuls of very finely powdered bone ash, and 1 table-spoonful of cream-of tartar. Mix thoroughly, then add 2 quarts of hot water, and stir until thoroughly dissolved, then boil for two or three minutes only. To one-half a pint of fresh milk add three fresh eggs thoroughly beaten, and when the syrup is cool enough to feed add the eggs and milk, and when thoroughly stirred, feed warm. Feed in the hive as one would feed honey or syrup.

I used this same food for preventing spring dwindling, and for building up colonies to full strength and efficiency, so that all colonies may be ready for work at the very beginning of the season, when surplus honey may naturally be expected. This food fed in the hive keeps all the bees at home to aid in performing the functions of brood-rearing, and in keeping up the temperature of the hive instead of spending their little remaining strength in battling against the cold, damp winds while searching for the food elements needed to repair the waste and drain upon their vitality while hibernating, and indispensable in brood-rearing. This food is not intended for use until after the bees have had a good flight in the spring, and almost any grade of honey or sugar may be used. This special food is a potent stimulant and tonic to the adult bees, giving tone and vigor to the organism, and furnishes the elements essential in brood-rearing in the place and in the manner suited to the convenience and tastes of the bees. No greater quantity should be fed than is required for the current needs of the colony.

#### THE CONTROL OF REPRODUCTION.

In ordea that the laws of heredity and the active principles of selection may be practically and persistently applied in the breeding of bees, I have in obedience to your instructions continued my experiments, striving to discover a simple and practical method for securing control of the natural process of reproduction.

I devised and constructed a fixture, which I call a fertilizing cage, 22 feet square and 26 feet high. Selecting a level plot of ground I set 4 rows of posts, 4 posts in each row, forming a

quadrangle. The posts are 4 inches square and 30 feet in length, set into the ground 4 feet, and exactly 7 feet apart. Four rows of girders, 2 by 4 inches by 22 and 4 inches are halved in two and bolted to the inside of these posts, the first row 5 feet from the ground, then three rows at intervals of 7 feet until the top is reached. The upper 3 lines of girders are continued from each side of each inside post, forming a brace on each side of each post at intervals of 7 feet, and forming the bearings for the wire-covered frames which cover the top of the cage. The space from the ground to the first girder, 5 feet, is covered with matched lumber nailed to the outside of the posts, leaving a smooth surface on both sides. The upper 21 feet on the sides and the top of the cage is inclosed by wire-covered frames 7 feet square, bolted to the girders on the sides, and securely fastened with screws to the frame-work at the top.

The height of the frame is thus adjustable at 25 feet, 19 feet or 12 feet from the ground by simply lowering the screen frames forming the top, and the upper row (or two upper rows as the case may be) forming the sides of the inclosure, the purpose being not only to determine whether queens or drones would mate in this cage at full size, but also how small an inclosure would be sufficiently large to give suitable freedom and range of flight.

These wire-covered frames are framed like a two-light window-sash, with a mullion in the centre, on which the two breadths of wire-cloth meet. Strips of wood secure the edges of the cloth, and cover all joints at the sides of the frames. With the lower board of the siding settled into the ground, and earth filled against the inside, and the door tight-fitting, the cage is bee-tight. I used drab-colored wire-cloth, which obstructs the light but very slightly. A shelf is fitted against the four sides of the cage on the inside one foot from the ground, and alighting-boards directly opposite on the outside. Upon this shelf the hives are placed.

Each hive has an exit cut in either end, and an exit is cut through the wall of the cage registering with the outer exit of each hive, over which, on the outside of the wall, a piece of queen-excluding zinc is nailed. These hives are painted strikingly distinguishing colors, as red, white, blue, green, yellow and black, and a space opposite each of the alighting boards, and a corresponding space on the outside of the wall of the cage are painted in corresponding colors. The colors are repeated in the order named, which separates the hives of the same color a sufficient distance to prevent confusion, and the bees and queens readily distinguish their own

hive by means of color as readily as by location. If the inner exit be left closed for a day or two after a colony is placed in a cage, the worker-bees readily learn to enter their own hive upon returning from the fields. I found that the queens had no difficulty on returning to their own hives after taking flight in the cage. To test that fact I frequently opened a number of hives in succession, and placing the queens upon the palm of my hand, tossed them high in the air, when they would take wing and fly away.

Upon re-opening the hives a few minutes later they would be found upon the combs. The queens and drones appeared to fly and disport themselves with as much freedom and regularity in the cage as they did in the apiary outside. The virgin queens were introduced from the nursery by various methods. Some were hatched in colonies in the cage from cells matured in strong queenless colonies, and some from cells built under the swarming impulse, which this season could be produced by artificial means only. Mature drones were selected from the hives in the apiary, and also from those returning from their excursions and liberated in the cage, and sealed drone-brood was removed from the hives in the apiary and hatched in strong colonies built up in large hives in the cage, and these drones all flew with freedom and regularity.

A few times I observed a queen embrace a drone and fly all about the cage with entire freedom, and then, the embrace being broken, each flew away in different directions, the queens returning to their hives, and the drones at once rejoined their fellows in the upper part of the cage. It is needless to add that in such cases no accomplishment had taken place.

The results realized from this line of experimental work have been so meager, and the circumstances attending the experiments so exceptionally unfavorable that it is not easy to form an estimate of their value, or determine their significance. Of the many scores of trials made, but six were successful; but six queens were fecundated in the fertilizing cage. However, as the improvement of the bee to the highest attainable excellence outranks all other considerations in practical importance and scientific interest, the methods and results of any intelligently-conducted experiments having this end in view, are well worth placing on record. Besides, future trials may receive direction from a multitude of failures, and the trying experience of the past season is not without compensating features, for even the little gains we make in positive knowledge, although apparently trifling in themselves, have often significant meaning, and brood bearing on questions of great value and importance.

My experience and observation lead me to believe that the main reason why this experiment was not satisfactorily successful was because of the protracted drouth and high temperature which lasted through the entire breeding season, the like of which has not before been known in this region. From May, 1885, until December, 1887, drouth prevailed, broken only at long intervals by light showers. The succession of two summers of excessive heat and unbroken drouth insured disaster to the present season cumulative in kind and intensified in degree. Continuous feeding has been required to keep up breeding and to prevent starvation.

Whenever feeding was suspended for two or three days, throughout nearly the entire season, oviposition would cease, and the bees ate their eggs, and it has required persistent trials and careful management to rear drones and keep them alive. It has been difficult to get three or four queen-cells matured in colonies such as in ordinary seasons would rear from 25 to 40, and of those permitted to remain outside in the apiary and seek a mate at will, two of every three failed of fecundation.

During the entire season a large number of larval queens, being insufficiently fed, died in the cell, and when for days and weeks together the temperature ranged from  $110^{\circ}$  to  $120^{\circ}$ , F., in the sun during several hours each day, the pap-food would ferment and turn a dark amber color and dry up to the consistency of thick glue at the bottom of the cells with the dead pupæ. When the temperature ranged from  $100^{\circ}$  to  $110^{\circ}$ , F., in the sun, the average temperature in the hive was from  $5^{\circ}$  to  $2^{\circ}$  higher until  $112^{\circ}$  was reached. Then, when the range in the sun was from  $115^{\circ}$  to  $125^{\circ}$  the temperature did not go above  $112^{\circ}$  in the hive. The fanners were able to prevent the temperature rising above  $112^{\circ}$  in the hives standing in the sun with a shade-board above the hive-cover. The worker larvæ seem to be able to endure a higher temperature than queen larvæ.

This season, as a rule, the drones were much smaller than drones from the same ancestors in the summers of 1885 and 1886, and there was a great inequality in the size of the drones and queens of the same parentage, and reared at the same time in the same hive, and a very unusual proportion of the queens were deformed and unable to fly.

Continued observation and experiment furnish corroborative evidence of the correctness of the theory advanced in my last annual report, namely, that drone bees differ in degrees of procreativeness, properly classified as the impotent, the conditionally potent, and the potent; and

that it is the prerogative of the worker-bees to determine the degree of development, and dominate the function of the drones as they determine the kind and degree of development of instinct and organism, and dominate the queen.

The volition of the queen determines the sex of every one of her descendants; but the life of every individual, as well as the modifications in organism and instinct, depends upon and receives its direction from the worker-bees, whose unerring prescience forbids the rearing or maintaining of individuals for whose services there exists no present or prospective demand. It is only when this keen apprehension of the present or prospective conditions of environment indicates a necessity for rearing and maturing potent or potentially potent individuals that such are reared and matured and furnished for the functions they are to perform. Under circumstances unfavorable in the extreme, a condition of seeming prosperity may be artificially produced, and drones numerically plentiful may be reared and preserved alive. It has taxed my skill and patience to the last degree during the last season to do this. I resorted to every stratagem I could devise to secure a supply of mature drones, but in most cases the workers were either unable or unwilling to supply the drone larvæ with food suitable in kind and quantity, for a large proportion of the drones were dwarfed. Dissection showed the sex organs of this sort to be inferior in size, dry, and empty.

Not one drone in one hundred of those which were fully developed, when held by the legs or wings, or when pressed upon the thorax, were able to perform the expulsion act, and the sex organs of such, with rare exception, contained nothing but a little clear, thin mucous. I have during the past season at various times examined the contents of the sex organs from scores of drones well developed and structurally perfect of the class which I believe to be potentially potent, in which I have not been able to discover active spermatozoa, nor was the mucous secretion present of that color and consistency which I believe to be the product of special feeding, and indispensable to sexual desire, and for liberating and floating the spermatozoa into the spermatheca.

Without wishing to appear dogmatic, after another season exceptionally favorable for such observation and experience as has furnished more complete data and corroborative evidence, I venture to reassert my belief as set forth substantially in my last annual report, that the preparation for and exercise of the reproductive faculty in drone bees, as well as in queens, depends upon and is determined by the workers. As with the queen, so with the drone, desire and capacity wait upon the will and resources of the workers.

As the queen must be bountifully supplied with egg-food before the egg-cells begin to germ-

inate and mature in the ovaries, so I believe the drone must be well supplied with that special food suited and intended to produce the desire and capacity for performing the act of copulation, the giving and withholding of which is instinctively determined by the worker bees, as the present and prospective condition demands.

Throughout the past season of extreme heat and protracted drouth there was almost a total failure of all natural resources, and all the influences of nature to which bees are subject, warned them that there was no actual necessity, for feeding and maturing drones, and that the abundance and prosperity with which I had supplied them were artificial and deceptive.

In the impotency of the drones, almost universally prevalent, I find the reason for the almost total failure of this experiment. The fact that both drones and queens flew with freedom and regularity in the cage, and the fact that in a few cases queens were successfully mated outside, leads me to believe that under favorable conditions satisfactory success may be expected. Experiments in breeding bees during the prevalence of such climatic conditions as those of the past season, are attended with hindrances which I have not been able to overcome. My experience and observation have suggested some changes in the size, shape, and manner of constructing the cage which I believe would be an improvement. If, under favorable circumstances, the control of the process of reproduction can be secured by the use of a device permanent in kind, and of moderate cost, then every queen-breeder and progressive bee-keeper may apply the laws of heredity and the principles of selection to the breeding of bees with assurance of realizing results alike in kind and degree to those which have by the persistent application of the same laws and principles been realized in breeding all kinds of domestic animals.

I have, by establishing mating stations in localities remote from other bees, secured the mating of queens and drones selected on account of their excellent paternity and perfect development. I controlled the flight of the different varieties by the use of queen-excluding zinc.

By crossing selected individuals of different varieties, and by mating selected bees of the same variety avoided in breeding, I have laid the foundation for some ancestral stock of superior excellence. This kind of work requires much patience and persistence during such a season as that just ended. I have begun many other experiments, many of which failed, and others, lacking in completion, require no mention here.

N. W. MCLAIN.

Hinsdale, Ills., Dec. 31, 1887.

## SUNDRY SELECTIONS.

### ANOTHER CASE OF FOUL BROOD.

D. F.—I send you by this mail a package containing a specimen of diseased brood supposed to be foul brood. Please examine and report the result.

The package duly arrived this morning and we examined it thoroughly. It

is unquestionably foul brood, and the piece of comb that you sent us had no symptoms of any other disease than pure foul brood. The disease seemed to be in a very advanced state, and what is not usually found until it gets in that condition is that the cappings were so far decayed round the edge of the cells. Some of them had been drawn down into the cell by the brown, ropy, elastic matter. The various thicknesses of paper were all removed from the box and the odor of foul brood was so strong that we came to the decision that it was a case of pure foul brood before we examined it. We think the sooner that any colonies affected with the disease are treated by the fasting system, as set forth in our pamphlet on foul brood, the better. Now that there is plenty of honey coming in from the thistle it is a good time to operate, as there is less liability of robbing and having other bees become affected with the disease.

## A RARE CHANCE!

The Authorised Capital by Government Charter of the D. A. Jones Co is \$40,000, the subscribed and fully paid-up Capital is \$19,000. We yet require

## TWO PRACTICAL MEN

To assist in the management of our large supply business, who could invest \$2,000 to \$3,000, each of which will be fully secured, and good salaries will be paid. We want those who would remain permanently with the company. Good chance for suitable men. Arrangements can be made to take farm lands in lieu of cash. Principals only dealt with.

D. A. JONES,  
BEETON, ONT.

## UNTESTED QUEENS

For Sale, Reared from natural swarming cells. Foul brood has never been in this locality. Price \$1 each.

W. H. KIRBY,  
OSHAWA, ONT.

## PURE—ITALIAN BEES FOR—SALE!

Full colony in A. I. Root's Simp. hive \$6.00. Two-frame nuclei \$3.00. Three-frame \$3.50. Each nucleus and full colony to contain a tested queen and plenty of bees and brood, all on wired L frames, combs drawn from fdn. Hives new, everything first-class. To be shipped in June. Safe arrival guaranteed. I shall do by all as I would be done by. Address

N. A. KNAPP,  
ROCHESTER, LORAIN Co., O

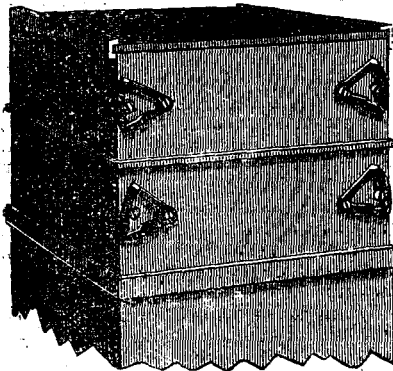




# OUR NEW Reversible Honey - Board

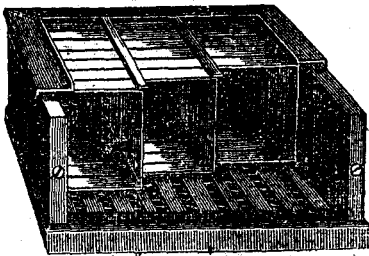
—AND—  
**SUPER REVERSER.**

This is the invention about which so much has been said in the bee journals during the past winter, and we are satisfied it will meet



THIS CUT SHOWS THE GENERAL APPEARANCE OF THE SUPERS.

with the approbation it merits. We have tested it thoroughly in our own apiaries, and have had it in operations in the apiaries of three other able, practical and successful bee-keepers.

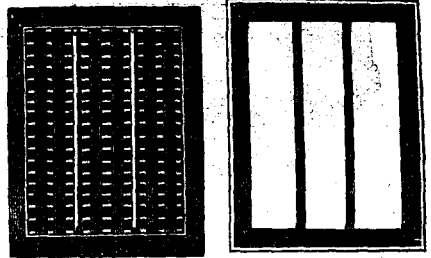


IN THIS ENGRAVING THE SECTIONS ARE SHOWN AS RESTING ON THE HONEY-BOARD WITH THE REVERSER COVERING THE JOINTS OF THE SECTIONS.

We claim for it:

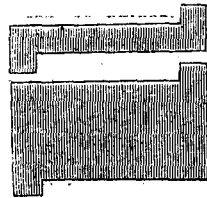
1. That section-honey can be produced with less expense and with less handling than with other hives.
2. The great simplicity of the whole arrangement which adapts itself to the requirements of the merest novice as well as to the skilled apiarist.
3. It can be adapted to any hive in present use at very small cost.
4. The cost of wide frames, section cases, skeleton crates, **L** rests, etc., is done away with.

5. The hive and supers are rain proof and wind proof.
6. The trouble of having the sections propositioned together is done away with entirely.



SHOWING REVERSIBLE HONEY-BOARD AND REVERSER.

7. A most perfect and exactly correct bee-space is maintained at all times.
8. There is no shrinking and swelling of wide frames or section arrangements, there being none.
9. The sections may be reversed or interchanged, either by the whole crate or individually, with the utmost simplicity.
10. Separators can be used with this style of super just as readily as with any other.



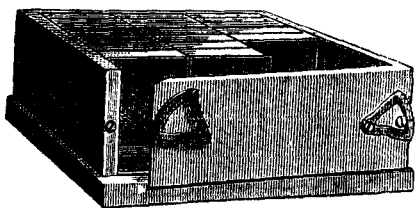
CROSS SECTIONS OF SIDES OF REVERSIBLE HONEY-BOARD AND REVERSER.

11. The sections are brought just as close to the brood chamber as it is possible to get them in the tiering up system, and a quarter more sections can be put in every super.
  12. There being less weight and bulk the shipping charges will be much less than ordinary.
- The prices of these honey-boards and reversers, for the different styles of hives, are given under their proper headings. We keep on hand a stock suitable for the "Jones," "Combination" and "Langstroth" hives. In ordering for any other style of hive, be particular to give the exact inside and outside measurement of the hive, so the honey-boards may be made to fit properly.

## SPECIAL PORTABLE SUPERS.

Almost any super will suit this new arrangement, and we give in the price list the prices of the honey boards and reversers separately. We make a special "portable" super which is put together with a very light hive clamp, which answers its purpose capably. When the sections are ready to take off, all that you need to do is to unfasten one corner (see out following), and lift off the whole super. We make

them for the Combination Hive only, except to order.



SHOWING PORTABLE SUPER WITH SIDE THROWN OPEN SO SECTIONS MAY BE REMOVED.

The price in flat includes the clamps and screws necessary to put them together.

Portable Supers each.....	made up	in flat
" " 10 and under, each	\$ 25	\$ 22
" " over 10 and up to 25	22	20
" " 25.....	20	18
	19	17

THE D. A. JONES CO., LD.,  
BEETON, ONT.

## THE COMBINATION HIVE

We believe that for all general purposes this hive is the best and cheapest in the market today. It combines all the good qualities of the most expensive hives offered, and the simplicity wanted by the novice or beginner in bee-keeping; its cheapness alone being one great characteristic.

The inside dimensions of the hive are: Length, 10 $\frac{1}{2}$  in.; width, 13 $\frac{3}{4}$  in.; depth, 12 $\frac{1}{2}$  in. The frames are 10 $\frac{1}{2}$ x12 $\frac{1}{2}$  in. In other words, the frames are of the same dimensions as in the "Jones single walled hive" but are turned over on the side. There are those who object to using a hive with so deep a frame as the ordinary Jones hive for comb honey, while the frame turned on its side meets their views; the supers are worked by the use of skeleton crates or  $\perp$  rests, and either 3 $\frac{1}{2}$ x4 $\frac{1}{2}$  or 4 $\frac{1}{4}$ x4 $\frac{1}{4}$  sections may be used, unless, of course, you desire the new reversible honey-board and reverser, prices of which are given farther on, when neither skeleton crates or  $\perp$  rests are needed.

### COMPLETE HIVE FOR EXTRACTED HONEY

Will consist as follows: 1 Brood Chamber, (including cover, bottom and frames) 75c.; 1 Second Story, (including frames) 65c. Total (ready for use) say.....\$1 35  
3 and up to 5..... 1 20  
Over 5 and up to 10..... 1 10  
Over 10 and up to 25..... 1 00  
Add 15 per cent. to these prices for one coat paint; and 25 per cent. for two coats.

The prices of the above complete hives in the flat, will be:—

Over 3 and up to 5.....	\$1 00
" 5 " " 10.....	90
" 10 " " 25.....	85
" 25 " " 50.....	82
" 50 " " 100.....	78
" 100.....	75
Brood chambers alone, in flat, each...	55
Second stories, alone, in flat.....	45

### COMPLETE HIVE FOR COMB HONEY

Consists as follows: Brood chamber (including cover, bottom-board and frames) 70c. two supers made up, each 15c. (30c) say..\$1 00  
Over 3 and up to 5 each..... 95  
" 5 " 10 each..... 90  
" 10 " 25 each..... 87  
" 25 " 50 each..... 85

Add for one coat paint 15 per cent; two coats 25 per cent.

Prices in the flat—include brood chamber, as above, and two supers—and are as follows:

Over 3 and up to 5 each.....	\$ 75
" 5 " 10 each.....	70
" 10 " 25 each.....	65
" 25 " 50 each.....	63
" 50 " 100 each.....	60
" 100.....	58
Supers, in flat, each.....	15
" " per 10, each.....	10

Strips of sheet iron for bottoms of supers or section cases are included.

We do not include the  $\perp$  rests or skeleton crates, in prices of the comb honey hives. We prefer leaving the choice with the customer. If you use  $\perp$  rests you will require to buy 3 $\frac{1}{2}$ x4 $\frac{1}{2}$  sections; if skeleton crates, 4 $\frac{1}{4}$ x4 $\frac{1}{4}$ .

We make up sample surplus cases complete with sections in any of the above ways at 45c. each.

The prices of ordinary queen-excluding honey-boards of metal and wood to fit this hive are as follows:—

	MADE UP.	IN FLAT.
Price, each.....	\$ 25	
" per 10.....	2 35	\$ 2 10
" " 25.....	5 50	4 75
" " 100.....	20 00	17 00

### Prices for New Reversible Honey-board to suit the Combination Hive

#### WITHOUT PERFORATED METAL.

	Made up.	In flat.
Honey-boards, each.....	25	22
" 10 and under.....	22	20
" over 10 and up to 25. 20		18
" over 25.....	19	17

#### QUEEN-EXCLUDING BOARD WITH METAL.

	Made up.	In flat.
Honey-boards, each.....	30	25
" 10 and under.....	28	23
" over 10 and up to 25. 27		22
" over 25.....	25	20

#### REVERSERS.

	Made up.	In flat.
Reversers, each.....	15	13
" 10 and under.....	14	12
" over 10 and up to 25. 13		11
" over 25.....	12	10

The super arranged as above holds 24 sections 3 $\frac{1}{2}$ x4 $\frac{1}{4}$ .

Where separators are wanted add 10 cents to the price per super.

#### PORTABLE SUPERS.

For the prices of these see page 5. We only stock these to fit the Combination Hive.

THE D. A. JONES CO., LD.,  
BEETON, ONT.

D. A. JONES, Pres.

T. H. MACPHERSON, Sec.-Treas.

# THE D. A. JONES CO., LD.,

## BEEETON, ONT.

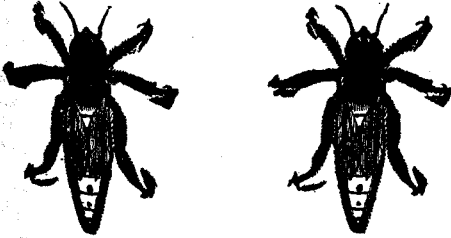
### Manufacturers of and Dealers in Apiarian Supplies

OUR CIRCULAR SENT FREE ON APPLICATION.

Publishers Canadian Bee Journal.

Fire Book and Job Printers.

#### QUEENS.



Our trade in queens grows greater each succeeding year, and we seem to be giving better satisfaction as well. We endeavor to raise queens which will produce good honey-gatherers irrespective of breed or race.

We pay much attention to the class of drones with which our queens come in contact.

The annexed table shows the prices at different seasons, of different varieties. These are, of course, subject to change depending upon the supply and demand. All changes will be noted in the CANADIAN BEE JOURNAL :

MONTH.	Untested	Tested	Selected	Virgin
May	1 50	2 50	3 00	
June	1 00	2 00	3 00	0 60
July	1 00	2 00	2 50	50
August	1 00	2 00	2 50	50
September	1 50	2 00	2 75	
October		2 50	3 00	

Three at one time, deduct 10 per cent ; six at one time, deduct 20 per cent.

#### EXPLANATIONS.

We are not, owing to our high latitude, able to sell queens before May, nor later than October.

Untested queens will be ready for sale as soon as mated, and before they have had a chance to prove themselves.

Tested queens are those which have been proven as to race and honey-gathering qualities.

Selected queens are chosen because of color, size and honey-gathering qualities.

Queens cannot be shipped unless the weather is warm enough, except at risk of purchaser otherwise safe delivery is guaranteed.

We replace all queens lost in transit, but not those lost in introducing.

#### BEEES.

Bees should always go by express, unless they are personally cared for *en route*.

We do not hold ourselves responsible for breakage or delay in transit of colonies of bees they always leave our hands in good shape. We will send out only such colonies as we are sure will give satisfaction. Our bees will be such as the queens we offer will produce.

MONTH.	Italian	Italian Crosses	Carntolan Crosses
May	\$8.00	\$ 8.00	\$ 9.00
June	7.00	7.00	8.00
July	7.00	7.00	8.00
August	6.50	6.50	7.00
September	6.00	6.00	6.50
October	6.50	6.50	7.00

The above prices are for up to four colonies ; five colonies up to nine, take off 3 per cent. ; ten colonies up to twenty-four, 5 per cent. ; twenty-five colonies and over, 10 per cent—*always cash*. Bees at these prices will always be sent out in the Combination Hive, and each colony will contain a good queen, some honey, and brood according to the season.

#### BEEES BY THE POUND.

Just as soon as we can raise them in the spring, we will have for sale, bees by the pound at the following prices :—Up to July 1st, \$1.25 per pound ; after that date, 90c. per pound. Orders must be accompanied by the cash, and they will be entered and filled in rotation as received. We are booking orders now. Do not delay in ordering if you want prompt shipment.

#### NUCLEI.

A two-frame nucleus will consist of one-pound of bees, two frames partly filled with brood and honey, and an extra good queen, price \$4. Two at one time, \$3.75 each—up to July 1st.

After that date the prices will be \$3 singly ; two at one time, \$2.75 each.

We can send frames that will suit either the Jones or Combination hive. Please specify which you wish. Should you prefer the nucleus in either Jones or Combination hive, add price of the hive, made up, to the cost of nucleus.

Bees by the pound and nuclei must always be sent by express. Orders for nuclei filled in rotation the same as bees by the pound.

# APIARIAN SUPPLIES

MANUFACTURED BY

W. T. Falconer, - Jamestown, N.Y.

Are unsurpassed for Quality and fine Workmanship. A specialty made of all sizes of the **Simplicity Hive**. The **Falconer Chaff Hive**, with movable upper story continues to receive the highest recommendations as regards its superior advantages for wintering and handling bees at all seasons. Also manufacturer of **FALCONER BRAND FOUNDATION**. Dealer in a full line of **Bee-Keepers' Supplies**.

Send for Illustrated Catalogue for 1888. Free.

W. T. FALCONER.

## Bee-Keepers Guide

—OR—

MANUAL OF THE APIARY.

The fourteenth thousand just out. 10th thousand sold in just four months. More than 50 pages and more than 40 costly illustrations were added to the 8th edition. It has been thoroughly revised and contains the very latest in respect to Bee-Keeping.

Price by mail, \$1.25. Liberal discount made to dealers and to Clubs.

A. J. COOK, Author & Publisher,  
STATE AGRICULTURAL COLLEGE,  
LANSING, MICH.

## BEE-KEEPERS !

I will send to any address a good substantial **Bee Veil** for 15c., post paid. I carry a good line of **Apiarian Supplies** and solicit your patronage. Send for catalogue.

A. D. ELLINGWOOD,  
MILAN, COOS Co., N.H.

250 ENVELOPES

—AND—

250 NOTE HEADS

FOR \$1.

On good paper, printed with name and address, post paid.

CANADIAN BEE JOURNAL OFFICE,  
BEETON ONT.

## Muth's Honey Extractor.

Perfection Cold Blast Smokers, Square Glass Honey Cars, etc. Send ten cents for "Practical Hints to Bee-keepers." For circulars apply

CHAS. F. MUTH & SON,  
Cor. Freeman & Central Avenues, Cincinnati

### COMB FOUNDATION.

I manufacture the best, or as good as the best foundation in Canada. Comb foundation for sale to suit almost any sized frame or section. Pure bees wax worked on shares or for cash. Samples with prices on application. No circulars. All freight to **Ridgeway station**, if by mail to **Henry S. Parker, MORPETH, ONT.**

### BEEES FOR SALE CHEAP.

30 COLONIES OF ITALIAN BEES FOR SALE. In lots of 3 or more \$6.00 each. Now is the time to send in orders for spring delivery. Bees second to none.

Address  
**LEWIS JONES,**  
DEXTER P.O. ONT.

THE CANADIAN

## POULTRY REVIEW

IS THE ONLY PAPER PUBLISHED IN CANADA IN THE INTERESTS OF THE

**Poultry, Pigeon and Pet Stock Fraternity.** Circulation always on the increase. Subscription only \$1.00 a year. Address,

H. B. DONOVAN,  
20 Front St. East, Toronto.

FRIENDS. IF YOU ARE IN ANY WAY INTERESTED IN

## BEEES AND HONEY

We will with pleasure send you a sample copy of our **SEMI-MONTHLY GLEANINGS IN BEE-CULTURE**, with a descriptive Price-list of the latest improvements in Hives, Honey Extractors, Comb Foundation, Section Honey Boxes, all books and journals, and everything pertaining to bee-culture. Nothing patented. Simply send your address on a postal card, written plainly. A. I. ROOT, Medina, Ohio.

## BEEES AND HONEY.

TO ALL that are interested in Bees and Honey, send for our **Free and Illustrated Catalogue of Apiarian Supplies.** Address

M. RICHARDSON & SON,  
Port Colborne, Ont

## BARNES' FOOT-POWER MACHINERY



Read what J. J. PARENT, of Charlton, N. Y., says—"We cut with one of our Combined Machines last winter 50 chaff hives with 7 inch cap. 100 honey racks, 500 broad frames, 2,000 honey boxes and a great deal of other work. This winter we have double the number of bee-hives, etc. to make, and we expect to do it all with this saw. It will do all you say it will." Catalogue and Price List free. Address W. F. & JOHN BARNES 544 Ruby St., Rockford, Ill. 21

## SECTIONS FOR THE MILLION.

We are turning out sections at the rate of 10,000 per day right along, in addition to our regular hive and supply trade, and we are prepared to furnish them in any regular size and style in large quantities at very low rates.

Our prices are as follows:—

1000	\$ 4 50
3000	13 00
5000	20 00
10,000	37 50

All orders entered as received, and shipped with promptness. Order early to avoid the rush. These prices are spot cash.

THE D. A. JONES CO., LD.,  
BEETON, ONT