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

VOL. VII, No. 1. BEETON, ONT., APR. 1, 1891 WHOLE No. 285

THE CANADIAN BEE JOURNAL

Devoted exclusively to the interests of the Honey Producer.

Seventy-five Cents per annum in Advance.

ADVERTISING RATES.

All advertisements will be inserted at the following rates

STANDING ADVERTISEMENTS.

Time.	1 in.	2 in.	3 in.	4 in.	1 col.	page
1 month.....	\$2.00	\$3.00	\$3.50	\$4.50	\$6.50	\$10.00
3 months.....	8.00	4.50	5.00	6.50	11.00	17.00
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18 months.....	10.00	15.00	20.00	25.00	40.00	75.00

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One-fifth column, \$8 per year; \$5 for 6 mos. All yearly advertisements payable quarterly in advance.

Condensed Directory.

Occupying one-half inch space, THREE DOLLARS per annum.

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 eleven lines to the inch, and about nine words to each line.

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 it will be inserted in our regular advertising columns. This column is specially intended for those who have poultry, eggs, bees, or other goods for exchange for something else and for the purpose of advertising bees, honey, poultry, etc., for sale. Cash must accompany advt. Five insertions without charge, \$1.

STRICTLY IN CASH IN ADVANCE

Contract advertisements may be changed to suit the seasons. Transient advertisements inserted till forbid and charged accordingly. All advertisements received for THE CANADIAN BEE JOURNAL are inserted, without extra charge, in THE CANADIAN POULTRY JOURNAL.

THE D. A. JONES Co., Ld., Beeton, Publishers.

PUBLISHERS' NOTES.

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

THE 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.

Subscription Price, 75c. 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, 50c. extra per annum.

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.

Communications on any subject of interest to the fraternity are always welcome, and are 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.

ERRORS. — We make them: so does every one, 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 do not accept any advertisements of a suspicious or swindling nature, but our readers must not expect us to be responsible should our advertisers not do as they agree. They will find it a good rule to be careful about extraordinary bargains, and in doubtful cases not to pay for goods before delivery.

Clubbing Rates.

THE CANADIAN BEE JOURNAL and	
THE CANADIAN POULTRY JOURNAL	\$1.00
THE CANADIAN BEE JOURNAL and premium queen	1.00
Both JOURNALS and premium queen.....	1.25

Job Printing.

All we ask is the privilege of an opportunity to estimate. Free use of all our cuts given to those who favor us with orders. Specimen sheets furnished on application.



THOS. BARRETT,
Norfolk Poultry Yards
BREEDER
AND IMPORTER OF

Langshans,
S. G. Dorkings,
S. C. B. Leghorns,
White Cochins,
Black Hamburgs,
EGGS IN SEASON \$3 per 13 or \$5
per 26, Birds for sale. ANGUS, Ont.

1882 Chester Poultry Yards 1891.

E. J. OTTER,

90, De Grassi St., Toronto, Importer and
Breeder of Exhibition

**DARK BRAHMAS,
ORNAMENTAL BANTAMS**

My birds are second to none. They have won since
1890, 97 money prizes, 4 specials. Birds for sale at all
times. Eggs in season. \$3 per 13, or 26 for \$5. Satis-
faction guaranteed.

**BROWN LEGHORNS
AND BLACK MINORCAS.**

WILL sell a few sittings of Eggs from my grand
breeding pens this spring. My Brown Leghorns
are second to none in Canada. At the Owen Sound Show
I won every first and second prize given, winning eight
first and second prizes, making a clean sweep. I have
kept the honors at Owen Sound for 5 years in succession
on Brown Leghorns. My Minorcas are grand birds. In
looking over the prize lists this winter I find I had the
highest scoring Minorcas in Canada (93 to 98). Eggs
from each variety at \$2 per 13 or \$3 per 26 and will give
satisfaction. Brown Leghorns, Benner's strain. Black
Minorcas, Abbot Bros' strain from imported stock.

Address

J. C. BENNER, Owen Sound
Care Polson Iron Works MENTION THIS JOURNAL.

DON'T - FORGET

where the BEST STOCK in the country is kept.

If You Want Eggs for Hatching

1st Prize Birds as Breeders,

LECHORNS, B. MINORCAS, B. LANGSHANS

Eggs per Setting, \$2.00 per two settings. \$5.00.

FRANK TIER, - - - ARVA,

NO CIRCUAR.

Imported Indian Games !

1st prize winners at Toronto and Brampton, 1890. Eggs
\$5/Per setting. White Wyandottes, winners at Bram-
pton, Eggs, \$2 per 13. Golden Wyandottes, Rose Comb
Brown Leghorns, \$1.50 per 13. All prize winners at
Brampton

MAMMOTH PEKIN DUCKS

Eggs, one dollar per 12.

My stock is second to none. Eggs guaranteed fresh and
well packed in baskets. Give me a trial. I am here to
please you. JOHN A. NOBLE, NORVAL ONT.

J L. CORCORAN

Stratford, Ont.

Breeder of Exhibition

BARRED P. ROCKS

White Wyandottes,
S. G. and Colored Dorkings
Imperial Pekin Ducks.

BIRDS FOR SALE AT
reasonable rates.

Eggs, \$2.00 per Setting.



**Niagara River and Grand River
POULTRY YARD.**

Mammoth Lt. Brahmias & Barred P. Rocks.

STILL to the Front, always winning first place in the
sharpest competition, beating the birds that won
at Toronto, London, Barrie, Detroit, Brampton, Markham
So buy your eggs and stock from where the prize winners
spring from. Eggs from our prize winners \$2.50 per 13
\$4 per 26. Send for our Club circular..

ACKERLY & CLARK.
DUNNVILLE

Partridge - Cochins !

My breeding yard of P. Cochins for the year 1891 has
been selected with the greatest possible care

“HANSLER”

a superb Cockerel has been placed in command and the
EIGHT LARGE HENS

under his care are noted for even pencilling and abun-
dant middle to feathering. A limited number of eggs
will be sold at \$2.50 per 13 or \$4 per 26. Our club cir-
culars free.

R. H. MARSHALL,

Sec. Perfection Fancier's Club, Dunnville, Ont.

JOHN GRAY

TODMORDEN, ONT.,

—BREEDER OF HIGH CLASS—

GOLDEN WYANDOTTES, SILVER WYANDOTTES

WHITE WYANDOTTES, & PARTRIDGE COCHINS.

My faced Wyandottes are large and beautifully faced;
My Partridge Cochins have scored from 91 1/2 to 94.
Cockerel won 2nd at Brampton 1890 show. The above
birds are mated to produce best results. I aim to please
try me. Eggs \$2 per 13. A few choice birds for sale.
Send for testimonials etc., never mind stamps.

GLEN VILLA POULTRY YARDS

A. R. MCKINLAY

IMPORTER AND BREEDER OF

HIGH - CLASS POULTRY.

Autocrat strain of Light Brahmias. Single Comb
Barred Plymouth Rocks, White Plymouth Rocks, Black
Minorcas and Buff Pekin Bantams. Eggs, \$3.00
per 13, & 5.00 per 26. BOX 18, DEER PARK,
ONT.

ADVERTISEMENTS.

25 cents will pay for 6 MOS.
a trial trip of
The Canadian Bee Journal

EDITED BY D. A. JONES,

And published on the 1st and 15th of each month, containing all the good things in the apicultural world as they come to the front. Think of a whole winter's reading for a quarter. Stamps, American or Canadian, of any denomination accepted at par. Sample copy free on application.

The D. A. Jones Co., Ltd., Beeton, Ont

Please mention this paper.

The Bee World

A Journal devoted to collecting the latest Apicultural News, Discoveries and Inventions throughout the world, containing as it were the cream of apiarian literature, valuable alike to amateur and veteran. If you want to keep posted you cannot afford to do without it. **SUBSCRIBE NOW.** It is a 30-page monthly only 25 cents per year. Stamps taken in one or two-cent denomination.

THE BEE WORLD is published by,

W. S. VANDRUFF,

Waynesburg, Green Co., Pa

Sample copies free.

Discounts for Winter Orders

Following our usual practice, we offer the following *very liberal* discounts off orders sent in accompanied by the cash before the date specified. If you will figure out this discount you will see that our offer is an extremely advantageous one for the purchaser, amounting to a great deal more than a good interest—to say nothing of the benefit of having your goods when you want them. We will, in a week or two more have a capacity for fully twice as much goods as formerly, and we will be able to turn them out better.

DISCOUNTS.

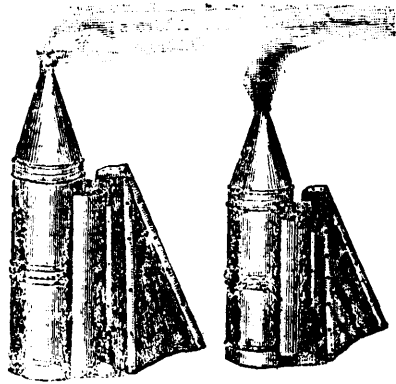
These discounts apply to everything in our pricelist, excepting foundation, honey tins, glass, scales, and wire nails. Up to Feb. 1st, the discount will be 6 per cent. ; to March 1st 4 per cent.

THE D. A. JONES CO. (LTD),

Beeton, Ont.

SMOKERS !

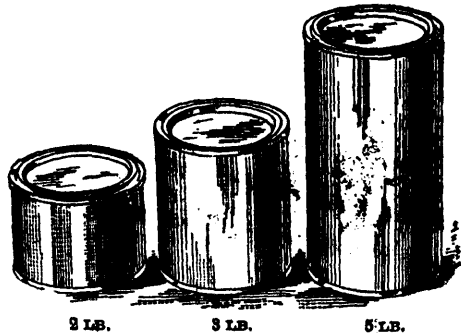
CUT IN PRICE



Since our Catalogue was issued, we have made a contract for a large number of smokers by piece work, at such figures as will enable us to reduce the prices. Here after the price of the No. 2 Smoker will be \$1, (formerly \$1.25,) with goods ; \$1.25 by mail.

HONEY TINS.

We now offer the "Penny Lever" Tin in three sizes. These are probably the handiest tin to handle and the price is a shave lower than the "Screw-top."



PRICES.

NO. LBS.	PER 1000	[PER 500.	PER 100	EACH.]
5	\$60.00	\$32.00	\$6.75	7
3	47.50	25.00	5.25	6
2	40.00	21.00	4.25	5

THE D. A. JONES CO.

BEETON, ONT.

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

VOL. VII, No. I.

BEETON, ONT., APR. 1, 1891

WHOLE No. 285

THE CANADIAN BEE JOURNAL

ISSUED 1ST AND 15TH OF EACH MONTH.

D. A. JONES, - - - EDITOR-IN-CHIEF.
F. H. MACPHERSON, - - - ASSOCIATE EDITOR.

GENERAL.

FOR THE CANADIAN BEE JOURNAL.

Bees—Spring—The "Apl," Etc.

BEES are wintering much better inside this winter than last. This is due chiefly to the fact that the outside temperature has been considerably lower and more uniform. Last winter the bees were generally too warm in bee cellars and other winter repositories, inducing a greater consumption of stores. Unusual brooding and consequent bee-diarrhœa and shortage of stores or starvation. They have been more quiet the past winter, have consumed less stores and have not died off so rapidly, as shown by the condition of the cellar floors. The prospects for coming out in good order are excellent. But there need be no hurry in getting them out of winter quarters. They can remain in safely longer than last spring, for the reasons given above, viz., they are in healthier condition, have more stores and less premature brooding.

Bees wintered in cellars should receive special protection of some kind when put out in the spring. They should be packed with saw-dust, chaff, leaves, straw, or something else to prevent the escape of the heat from the hive and keep

the cold and wind out. This is work and trouble, but it pays. The question is, would it not be better—that is, cheaper and less trouble in the end—to use double-walled, packed hives the year round. I am inclined to think this is what is coming in latitudes necessitating spring and fall protection, and this includes Canada and the Northern States as well, perhaps, as many of the Central. If the double-walled hive can be made lighter and less cumbersome than hitherto, the end will be attained, for the extra expense will be less than that incurred by spring and fall packing and unpacking. Friend Corneil thinks this can be done by using the proper thickness of lumber in the construction, and granulated cork for packing. He uses such hives and considers them a success, I believe, both in point of economy and convenience. The cork packing is the chief obstacle in the way of getting up these hives. Should it turn out, however, that wood ashes may take the place of the cork and answer as well, or nearly as well, this obstacle will be removed. Friend Chalmers is, I believe, testing the ashes as packing, and he will probably give us the results as soon as he comes to a conclusion on the matter.

THE "API" ON THE RAMPAGE.

Mr. Alley, of the *Apl* is greatly exercised over the foul brood question in Canada in his January number, which I have just read. Because I ventured to urge our American cousins to be up and doing on this foul brood question, and all for their own good as well as ours, for we do not care to import the disease afresh from them after we have rid ourselves of it, Mr. Alley gets his "dander up" and

pitches into the president of the *Ontario Bee-Keepers Association* for a service which Mr. Alley ought to be thankful for. If our cousins over there know so well how to rid themselves of foul brood in a manner so "easy, cheap and expeditious," as Mr. Alley says, I would like to ask why do they not do so? Perhaps Mr. Alley can tell us why the "easy, cheap, and expeditious" method is not put into practice over there. One has but to read their own journals to see that the *Api* in this matter is simply on canter of brag and bluster. He says "Americans want no remedies for foul brood from any one." Now, it is generally the case that ignorance knows it all and wants no further light from any body. In this case, however, I think it would be well for Mr. Alley to simply speak for himself instead of all "Americans." Some of them, I know for a certainty would like to get a little more light on the foul brood question—even such deservedly esteemed men as Prof. Cook. And several American bee-keepers have written me for our foul brood bulletin since its issue, who it seems were unable to "rid their hives" of the pest by that "easy, cheap, and expeditious" method known so well to Mr. Alley, but apparently to nobody else over there. He says our remedy is "worse than the disease." Our course now is clear—we must give it up and suppress it—not the disease, but the remedy. My advice to Mr. Alley is to cool off (not too suddenly) and look soberly and sensibly into this matter or it may cost him, and his countrymen who sell bees and queens, more than they anticipate.

Now, were I disposed to talk "bunkum," too, I would answer Henry Alley in this way: "All right, if you don't want advice or anything else from us we want nothing from you, and we shall stop your queens, bees, and foul brood from coming into this country. We will have a negative reciprocity on this point at least. At the last annual meeting of the *Ontario Bee-Keepers Association* I, with one or two others, was appointed by the meeting to interview the Dominion Government and look after this matter, in order to protect ourselves from the importation of foul brood. I shall therefore have your queens and bees prohibited from coming here. You may do the same with ours if you like." That is the way I might talk back, but I forbear, for although a blunderhead here and there among our apiarian cousins over the line may go off into a tangent of gasconade once in a while, that is no good reason why all of them should be punished, especially as that sort of thing does them good and does us no harm.

I have no doubt that should Canadian bee-

keepers, through the O. B. K. A., ask the government to prohibit the importation of bees and queens to protect us from foul brood the thing would be done. We do not, however, intend to go as far as that at present, but we do intend to quarantine the foreign importation. Our American friends need take no offence at this. It is prompted by no unfriendly or un-neighbourly feeling. It is purely a measure of self-protection. Were they all Henry Alleys the proper thing for us to do in the premises would be to cut off the wolf's tail just behind his ears and make a job of it the first stroke. With compliments to our American friends, and kind regards to Brother Alley, I am still theirs and his so far as practicable.

ALLEN PRINGLE.

Selby, Ont., March 18th, 1891.

FOR THE CANADIAN BEE JOURNAL.

Bee-Keeping for Profit.

THIS is the title of Query No. 287 in C. B. J. of March 1st. The question is, "What amount of honey do you consider each colony should yield, taking one year with another, to make bee-keeping give a fair profit for the money and time expended, estimating increase at 50 per cent.?" Some of the replies are certainly unsatisfactory. This is not a question of how much you can "coax out of the bees," (see Doolittle) or what other fellows consider a fair profit, (see Heddon); but what do you consider each colony should, etc. Should there be any difficulty in answering this question? Every bee-keeper should surely know what he considers a profitable yield for the money and time expended. The querist, however, to get much benefit from the replies, should know the average price that each receives for his honey, and in addition thereto the money value that each estimates his time worth. Even then, he will form a better estimate of the men, and their management, than he will of what he should expect as a profitable yield. For instance one prefers handling hives rather than frames, and maintains it is a saving in time. Another, however, makes choice of handling frames. If the former method is such an economy in time, those who adopt it should be satisfied with a less yield per colony. After all, however, it is not known to the querist, whether their estimates are based upon \$500 or \$1,000, whether it is due to good or bad management, or to the speed or otherwise of the operator. We all must know, that some men can accomplish nearly double what others can in a given time, so that, other things being equal, the fast worker would be satisfied with a smaller yield

per colony than the slow worker. Some bee keepers, Doolittle for instance, believe in working a colony for all it is worth, while others, myself included, maintain it is more profitable to keep a few more colonies and expend less labor. This accounts, in a measure, for the difference of opinion regarding the question. I estimate as follows: 1st. I consider that a person who has made bee-keeping a study and understands his business, should receive not less than \$500 per working year for the time and thought expended. I have an idea that some will consider this small pay for such as have spent days (and sometimes nights) in the study of this pursuit. Others, again, will be satisfied with less. This class will comprise those who are not engaged in the business, or if so, are either beginners or know nothing of it as a science, take no stock in bee journals, and flatter themselves that they know all that is worth knowing about bee-keeping. 2nd. I estimate that a person who understands this business, (with extra help in the extracting season) can care for and manage 200 colonies. The returns and expenditures I reckon as follows:

By 8000 lbs. extracted honey, (40 lbs. per colony) at 8c	\$640 00
" Wax from Cappings and other sources.....	15 00
To interest on invested capital	
Taxes and Insurance..	\$120 00
" Hired help	35 00
" Salary estimated, (self)....	500 00
	\$655 00
	\$655 00

I estimate no increase. There need be none, but what little there may be, can be applied towards sundry expenditures, and the wear and tear of fixtures connected with the apiary.
G. A. DEADMAN.

Brussels, March, 1891.

FOR THE CANADIAN BEE JOURNAL.

Notes from the Wellington Apiary.

COMMENCED the season with about 75 colonies, all were in pretty fair condition. Increased to 100 colonies; extracted 2,700 lbs.; took off 300 lbs of comb honey. Owing to the cold and wet weather, the beginning of the season was very unfavorable for brood rearing, consequently the bees suffered considerable. I might say right here, that bee-keepers should make an effort to protect their colonies better after they are set out of their winter quarters. I am a believer in the single-walled hive, with an outside shell filled in with some sort of good

packing material. Mr. J. F. Dunn brings out some very good ideas on page 437.

Last spring when I set out my bees, one half were set facing the north-west, the other half south-west. I simply tried this as an experiment. As far as brood-rearing and honey-gathering were concerned, I could not notice any particular difference.

The bee-keeper who has quite a number of colonies to carry out in the spring, should make himself a light hand barrow, have four legs attached to the barrow about eighteen inches in length. I have used one for a number of years and would not be without it. It also does away with a considerable amount of backaching.

Spring will soon be here, and as our forests are fast disappearing, every bee-keeper, in fact every farmer, should try and plant as many basswood trees as possible every spring, as an ornamental shade and honey producer it has no equal. Last spring I went to the woods and in the course of a day dug up and planted forty dandy lindens, all of which grew splendidly. I also procured a number from the nursery. The nursery trees did by far the best. Come, boys, get to work and plant the lindens.

BEEs.—I have tried all the different races of bees in the country for the past four or five years, and I have come to the conclusion, that for all purposes and intentions the Italians have won the day. A. FYFE.

Harriston, Ont., March 8, 1890.

FOR THE CANADIAN BEE JOURNAL.

The Heddon Hive.

SINCE reading the article of A. E. Hosal, found on page 439, C. B. J., I desire to supplement it by stating a few facts, which have been positively proven by my own and students experience in my apiary. Before doing so, however, allow me to digress sufficiently to say, that when I read the first paragraph of Bro. Hosal's complete and comprehensive essay, I took it, that he was opposed to the hive, all things considered, and it may surprise you when I say that a thrill of pleasure came over me as the result of that false impression. Now, Mr. Editor, all this was because of the novelty and freshness we would all experience at reading a criticism from a fair, logical writer, who had wisely and largely experimented, and yet was adverse to the hive. What a pleasure it would be to read something that wasn't in the nature of the well-remembered H. A. King grab of the property of another. I could honor, yes, almost worship, a bee-keeper who could devise a hive

so much better than mine that my own was no longer worth discussing. It would be so much pleasanter to entertain feelings of admiration for such a man, rather than those of disgust for the writers who are constantly endeavoring to make it appear that many of the self-evidently invaluable functions of my invention are old. There was no controversy about these old (?) things, not even a word of any kind about them in any of our literature until after two seasons' of careful experience, I patented them in the United States and British possessions, and then made them known to the public. Only one who has had the experience can realize the feelings of an inventor who continually finds his valuable discoveries plagiarized and attached to the names of others, while his unpopular inventions, whether valuable or not, are always coupled with his name.

Why will some of our apicultural journals persist in this immoral work? In consideration of this question, allow me to thank your correspondent, Mr. Hoshal, as well as the editor of the C. B. J., for the fairness of the article above referred to.

Now let us, as we begin the consideration of the several points brought forward by Bro. H. again thank him for the self-evident sincerity of his arguments thrice proven by his objections and special reference to his failure in carrying out a few of the functions claimed by its inventor, and others who have reported eminent success in the very points where Brother Hoshal failed.

1st. Allow us to say to your readers that nearly all use the hive with "loose bottom boards," as Bro. H. mentions, in order to carry out the alternating principle, made possible only by the horizontally divisible brood chamber. The outside measurement of the brood chamber cases, as given by Bro. H., are correct, but the end play of the frames as they fit to the case are $1/16$ of an inch, not $1/16$ as is printed by typographical error no doubt.

Our friend's description of the use and advantage of the break-joint wood-zinc queen-excluding honey board, is clearly presented. Let it be remembered that being the inventor, I have used this break-joint honey board constantly, and the bee space for more than ten years, and with the addition of the queen excluding zinc attachment for half of that time, and I am sure these valuable features have come to stay.

Next we come to our friend's disquisition upon the shake out function. While I believe it was never claimed that the last bee could be dislodged in this way, we have claimed, and

others using my invention have seconded the claim, that the shake-out function is a practical success with my new hive, and with no other brood chamber, perhaps it might be well to say a possible success. However, we know it to be a positive success, if properly manipulated from first to last.

It is for just such candid and intelligent beekeepers as Mr. Hoshal that I pen the following; To begin with the frames, put the cases in such a manner that no bees can lodge or even go behind them. The set-screws hold them in position with that absolute certainty that wedges or nothing else can, that inversion is practical and sure, one inversion of the brood-cases at the right time fills the shallow frames completely full of comb, and now no lodgement places are left. Again, we come to that useful function of the set-screws, which warrants us in shaking the brood-cases either side up, changing at will. Thus manipulated, we are all ready to try our hand at shaking out the bees. Now, there is much depending on your mental and physical knowledge of how to shake the case, you may lame your muscles and exhaust your lungs, if the case be somewhat heavy and yet not succeed completely. Still there is a little artful combination of tremble and jerk, which loosens the foothold of the little workers to a surprising extent. My own muscles are far below the average, yet I accomplish the object sought in this manipulation with comparative ease. It must be remembered that considerable depends upon the variety and strain of bees used; yet, I find myself equal to the stickiest-footed little fellows to be met with. I practised this function for years with surplus cases of section, and all will recognize that such cases average much heavier than the brood cases in question, and further than this are replete with lodging places for the bees. However, as our friend says, this divided, alternating brood chamber has no end to its wonder of manipulation, and it is usually the case that it presents a multiplicity of ways in which almost any desired end can be accomplished. However, I never use a brush.

Then, again, as to finding queens, it is safe to say that we find and capture any number, from four to eight times as quickly as the same result can be performed with any other kind of hive. Correct, the bottom board is where she will be found nine times out of ten. The sudden admission of light in such shallow cases, with no hiding places or inter-spaces, except between the bottom bars and bottom board, she seeks that locality at once, and nearly always right side up, with feet upon the bottom board.

Mr. Hoshal is evidently writing from practical experience. We vividly recall to mind the sprinkling of new honey some times shaken out, but in this locality that condition of affairs is nearly always coupled with no desire to rob on the part of the bees.

Yes, the contraction system, invented by Oatmen Bros., and first published and long practiced by me, as you well know, Mr. Editor, is a most practical and profitable manipulation. The divisible brood chamber stands in relation to this practice as does an engine to the profitable use of steam. Certainly it is a peculiar circumstance that Bro. Hoshal's swarms should desert the small brood apartment supplied by the use of one brood case only. Such has not been the case here, nor has it in any way marked the hundreds of reports received, while at the same time it will be remembered that in many apiaries this feature is tested by the use of the new hive by the side of others, none of which embrace this new feature. Right here, allow me to remark, that if your bees are building combs from starters only, this empty under-case arrangement is more than worth the extra labor resulting from its use, from the fact that it tends strongly toward the production of worker instead of drone comb. For this fact I am indebted to W. B. Sutherd, of Kalamazoo, Mich.


Mr. Hoshal mentions our ability to handle the bees the season throughout, fully accomplishing all that is needed or useful to us, without the necessity of removing a single wood frame. Just here, allow me to say, that this thought was the fore-runner and parent to the invention, and all hive mechanical applications which accomplish it.

I trust that it will be remembered that nearly all of the points discussed by Bro. Hoshal, in his clear and comprehensive article on page 439, as well as the thoughts contained above, are embodied in two chapters of my book published in 1886, immediately after the issuing of my patents, yet is a fact that most of your readers have never seen that book, and many, no doubt, never will. Let it be remembered that nearly all the alleged "new systems" are nothing more or less than a mongrelized rebash of my inventions of that time. I trust your readers will forgive the plainness of the above statement, on the ground of its self evident truth.

JAMES HEDDON.

Dowagiac, Mich., March, 1891.

FOR THE CANADIAN BEE JOURNAL,
 Apicultural Items—Weighing Sections
 With the Comb.

 YOU seem very much troubled over this matter, all for nothing. When a package or wrapper is necessary, it has to be paid for somehow, and "custom" decides the

manner of the paying. Thus if the weight of section is deducted, a higher price will be demanded for the honey, also when propolis is cleared off, the sections command a better price or a better sale, or it would certainly be left on. Over here a vast quantity of foreign and British products are bought and sold by weight, just as they are—even tea—neither custom house, broker, or merchant, opening and weighing the nett contents. The fact is, the average nett weight of every package is known and the contents are guessed at, or taken as so much. In some things the nett weight of contents are marked in the package. I don't suppose that any Briton puts more than a fire-wood value on any package he buys, but for all that he knows quite well he has to pay its full value or it would not pay the packers to send them. No! there is nothing immoral or dishonest in weighing wooden sections in, any more than the wax combs, and none but those with cross-eyed-common-sense would think otherwise. There is a custom amongst some I must condemn; which is, selling sections at so much each, or per doz., which is a great injustice to buyer and honest seller. For instance, one man has a lot of sections that average 12 oz. each, he calls them "one pound sections," and sells them at so much each, another man, whose sections average 16 oz. or more each, is run down in the price of his, because he is told about the price "1 lb.," sections are selling for. I know, in many places, that all $4\frac{1}{2}$ sq. sections are called "one pound," no matter what they weigh. So, if sections were sold entirely by weight, all would be on a level. These light weights do much harm, as many buyers think they are lbs., or must be, or why the name, and when they get home and find the sections weigh 10 oz. or less, they feel disgusted and are ready to believe all kinds of tales about bogus honey combs, and bogus bee-keepers, who have educated their bees to such a fine point as to fill in 10 oz. to the pound.

DESTROYING SURPLUS BEES.

I am surprised to see you still troubled over this matter: why not work them up into honey as I suggested? and the way that I do, I never have more bees than I want; they are doubled up for the heather harvest, and they then replace themselves in the shape of honey.

THE WINTER PROBLEM.

Mr. G. B. Jones, on page 311, Nov. 1, seems very much concered on this matter, says: "The problem is not solved." I guess it is, and that I have solved it, and I am surprised to see him say different after what I have said.

WHAT IS GOOD WINTERING ?

Mr. G. B. Jones, page 311, would like to know, what is the condition that bees should be in, that have wintered in "the best possible condition." Well, perhaps, every one has his own ideas of what this is, more or less; but my standard is this,—The bees should be quite as numerous on the first of April, as they were on the first of November previous; they should have a nice little brood nest—not very large—not have consumed more than 6 lbs. of honey, this depending entirely on the amount of brood, as before breeding takes place, they eat none at all, or so little, it cannot be detected. This is my idea of what constitutes "good wintering," and is what I get every winter, simply by rearing the queens as they should be reared. My bees winter in their summer hives, on their summer stands, as you describe it, and from harvest to harvest they consume about 12 lbs. of honey or sugar, though I leave them 18 or 20 pounds to save risk of feeding.

BEES LIVING ON NOTHING.

I once put a lot of driven bees into the cellar in the fall, to starve, as the hive they came from showed signs of foul brood; the cellar was lighted by means of an iron grate, so they were not in the dark. I let these bees quite alone, and with a lamp examined them every night, to see if they showed signs of starving; they remained thus for 21 days, at the end of which I got tired and set about a different plan. The bees were asleep, and might, for anything that I could see, have passed the winter.

JOHN HEWITT.

Sheffield, England, March, 1891.

Wax Secretion.

DO CIRCUMSTANCES OR THE BEE GOVERN THE SECRETIONS OF WAX SCALES?—ARE THEY EVER WASTED ?

MANY writers for our bee journals, and some of them our most cautious and able bee-keepers, take the position that bees have to secrete wax, and that if comb or foundation is used the wax is lost. But is it true that bees have to secrete wax? I greatly doubt it. Nature has not arranged things that way. The cow secretes milk when there is a calf that must have milk. When the bees need wax to form comb, then we find wax scales in the wax pockets, otherwise we do not find them. I feel quite certain of this. I have hived swarms on combs, on foundation, and on frames with neither comb nor foundation. In the first two

cases the bees would be very active, and it would be very difficult to find any wax scales. In the other case most of the bees were very quiet, and almost every one would have wax scales in the wax pockets. Even those flying out would show the scales. Now, if, as some contend, the bees in the first cases had to and did secrete the wax, where were the scales? I could find no signs of them, and do not believe they had any existence. In case of using foundation in brood chamber and supers, I have often had great difficulty in finding a bee with the wax scales to show my class; but once have a swarm in an entirely empty hive, and how soon we could find the scales. Indeed, it was hard to find a bee without them. It is hard to explain just how the bees regulate this matter. I have thought it was through activity. If very active, no scales are secreted; if quiet, or active to only a limited extent, then wax secretion was active. When we work mares hard, the young foals get too little milk. The mares cannot secrete a full supply of milk, and work hard at the same time. Is it not quite possible that the same is true of bees? When they want comb, they hang quiet in graceful festoons from the top of the hive, and wax secretion goes on rapidly; and the material for the beautiful combs is abundant. When no comb is needed, true to their instinct, they hie forth to gather sweet, and wax secretion is nearly or quite suspended. This hypothesis is not without support from analogy. The wax is much like our fat or adipose tissue. We know that it is the sedentary men that become rotund, while our Cassiuses—the lean and hungry men—are generally active. This fact does not necessarily prove that it is wise and profitable to buy and use foundation. Whether foundation is profitable or not, must be determined by actual trial; but that we should desist from its use to save wax scales that else will be secreted and lost, I think is not proved. I think a little close observation will convince any one that bees secrete wax only when, in the economy of the hive, they need it.

A. J. Cook.

Agricultural College, Mich.

[Friend C., I am glad you have brought up just this point. I once thought just as you state it; but other things have tended to change my opinion somewhat. For instance, where we feed a colony of bees tremendously with sugar syrup, if feeding is kept up for a sufficient number of days wax scales will form in great numbers; and if they are not permitted to build comb, these beautiful pearly scales of wax will fall on the bottom board in great quantities. You know I once fed a colony all the syrup a barrel of

sugar would make; as I wanted them to fill and seal over some combs to give to other colonies, they were not permitted to build comb at all, except capping cells. Well, the great difficulty in the way of the success of the experiment was, that so much syrup was consumed in the secretion of wax—wax that fell to the bottom board—a good deal of it in the form of wax scales. In hiving a new swarm on a full set of finished combs (or two full sets if you chose) we did not find very many scales on the bottom; but the bees filled up the corners, and built bits of wax all through the corners and crannies of the hives, and put considerable wax on the top of the frames. As this matter is one of great importance, I hope we may have more suggestions on the subject. Although we have foundation to sell, my opinion is, and has been for a long time, that, where the brood combs and honey boxes are all filled with foundation, more or less wax is lost. I hope you are right; but I fear you are not wholly so in your conclusions.

A. I. R.

—From *Gleanings*.

We recollect having some experience very much like friend Root, and we had about arrived at his conclusion, but on another occasion where we fed equally as much or more, no wax was secreted. So far as we could see it was done in this way. In the first instance, they apparently secreted the wax to cap the comb, but secreted rather more than they needed. We found many scales on the bottom board, but accounted for it in a measure by the cool weather, as it was late in the season, and it is not an unfrequent occurrence when the colony has too much upward ventilation, or where it is too small for the hive they are placed in that they drop many of their wax scales on the bottom board. Sometimes these scales are taken up and used again by the bees. The other case, however, rather changed our opinion. We took a large hive full of combs and bees, removed their sealed stores and all their combs. They being very strong we thought they would store it more rapidly, so we continued to feed them, and as fast as they filled the combs, and before they started to cap them, we removed the combs and gave them to other colonies, giving the bees empty combs. We continued in this way until they had stored a large quantity, and we saw no signs of wax on the bottom board or on the bees. We recollect

examining them carefully and they had not apparently secreted any wax. From other tests we have made we are now inclined to the opinion that bees do not secrete wax because they cannot help it, but do so simply when they require it, or imagine that they will require it. We do not pretend to argue that it is profitable to give full sheets of comb foundation when bees are managed most economically and for profit. Now when honey is coming in rapidly, and a full set of clean combs is given a colony, instead of remaining in the hive in a quiet cluster for days building combs, they go forth to the field and all appear to be engaged in gathering honey. I have frequently examined such bees, and have never found that they secreted wax, while on those hanging in festoons in the hive building combs, the wax scales can be seen easily. Circumstances, no doubt, have considerable to do with this matter, and one or two tests will not prove anything conclusively to us, but from our many observations, we are inclined to Prof. Cook's view of the matter.

The Promotion of Bee Culture.

SIR,—I visited to-day in the city of Kingston the winter quarters of 120 hives of bees, whose summer pasture is the township of Pittsburg, near the St. Lawrence. The owner has devotedly followed bee farming for several years and has found it a profitable occupation. He has sold of the crop of 1890, something over three tons of extracted honey. There is a bee farmer in Storrington township whose sales are considerable, and in the townships fronting on the Bay of Quinte bees won a fair reputation years ago, but I fear that of late with the removal of the forests they have not done so well. The region which invites the attention of those who would promote bee culture as a profitable addition to the agricultural resources of the country, is that of the free grant townships. The burnt woodland, with their second growth of willow, popular, sumach, blackberry, wild cherry, raspberry, thistle, golden rod and catnip, afford, with the green unburnt timber of adjacent areas, maple and basswood, and with the abundant huckleberry on the rocky ridges, the finest bee pasture in the north temperate zone. I doubt if the natural pasture needs anything from the occasional buckwheat field and clover meadow of the settler.

The Encyclopædia Britannica states that the German government encourages bee culture in every possible manner; teachers paid by the State travel through the rural districts teaching the best methods of cultivation, and all school masters before receiving their diplomas have to pass an examination in the subject. Bee clubs in the villages are common, money for prizes and expenses being in part supplied by the Government.

The professor of entomology in the State Agricultural College of Michigan, Prof Cook, is a practical apiarian, who imparts instruction in bee culture. The Rhode Island State Agricultural College makes the same subject part of its course of study. There are not a few successful and enthusiastic bee farmers in Ontario, who might be employed at farmers' institutes in giving instruction in their craft, and it is worthy of consideration whether it might not be very advantageous to establish some half-dozen bee farm stations on the colonization roads, where people could resort to learn those methods of management which in the past few years have added a handsome sum to the wealth of the United States, as well as various parts of continental Europe.

—J. B. in Toronto Globe,

The above article, appeared in the *Daily Globe* of March 28th. We deem worthy of a place in the *JOURNAL*. There is no doubt that many of our bee-keepers have unfavorable localities, and would be pleased to know where they could do better. Now there are thousands of locations in new sections of country in the northern part of Ontario, where land may be had free, and we believe in Quebec as well, which offer great inducements to specialists. The pasture there is almost unlimited. In his enumeration of the honey sources J. B. forgot to mention willow herb, improperly called by some fireweed, also the aster, which produce honey very plentifully late in the fall. From this source principally our esteemed friend, Mr. Schulz, took over 300 pounds of honey from some colonies after the honey season, or rather, the time for the honey season was over. Two years ago in our locality—Mr. Schulz is so modest in his statements, that he would not tell us how much he actually did get from some colonies fearing that it might have a bad influence—we are credibly informed that he had one or two colonies which gathered 500 pounds each from that source. Fancy

a locality that, after the clover, basswood and thistle are gone, will supply from fall flowers a bigger yield in favorable seasons than from our principal honey sources during the season, even though it is a favorable one. Last year we received large consignments of honey from parties in the free grant townships who had secured it largely from fall pasture, which consisted chiefly of willow herb and asters. No more suitable place could be found for bee-keeping where a person could have undisturbed possession of their entire range, than many of these northern counties. Much of the land is burnt over, and it is one sea of flowers in their season. In the low, marshy and damp places by the sides of the hills, amongst the rocks and edges of the mountains, basswood, willow, mountain ash, and especially ground maple, grows in abundance; the latter producing honey in about three weeks, commencing at the end of the fruit bloom and continuing until white clover. No doubt if the Government would make an effort to encourage bee culture in these localities the result would be highly gratifying. The honey that now goes to waste in these sections, if gathered, would add very much to the wealth of our country.

HE DESERVES CREDIT.

Happening to be in Oilsprings, that embryo city, recently, I called to see an old friend, Mr. R. McBride, and visited the extensive oil-producing territory of the Messrs. McBride—Mr McBride's son, W. T., being associated in the business with him.

I was quite astonished to find on the premises about 60 colonies of bees, every hive being apparently placed in the best of shape for the winter. Mr. T. W. McBride has evidently given close attention to bee-keeping, notwithstanding his onerous duties in connection with the oil trade. He has an A 1 extractor and seems to be practically familiar with the proper management of bees. He sold over fifty dollars worth of honey last season, and reserved a large quantity, not having had time to extract as much as he would have liked to. I think he is well entitled to credit for his enterprise, and therefore send your ably conducted *JOURNAL* the above item.

Yours truly,

A CONSUMER OF HONEY.

Petrolia, March 2, '91.

For THE CANADIAN BEE JOURNAL.

The Different Races of Bees and My Experience With Them.

The following interesting paper written by Mr. Ila Michener, of Low Banks, Ont., was read at the Welland Co. Bee-keepers' Association.

On this subject, as well as all others, we must adhere to the exact truth. And I could have no other motive, having ceased to rear queens for sale, for they have become so cheap as to render queen rearing unprofitable.

My experience with bees dates back forty years at least. Away back in the dim light of the early dawn of my existence, I can just remember the long row of straw hives containing Grandpa Kinnard's bees. Having always been an enthusiast with bees (my greatest earthly happiness consisting in the care of them) I can remember with joy my boyhood days, when in the golden time of autumn, father and I used to hunt wild bees in the woods, and we found many rich swarms.

During my recent years of sorrow, caused by the death of my wife, and the cares of a large family of children, what could I have done without the bees to cheer me?

Black or native bees were the first we had of course, obtained from the woods; at first kept in box hives, but while a boy I used to construct hives with doors and drawers and glass, so that I could observe the bees at work, but having no text book then and no bee journal, my education in bee lore was limited.

In the summer of 1865 we obtained our first movable frame hive, and then began my study of bees in earnest, having yet nine years experience with Black, I think I can give a truthful testimony.

Black bees are the most irritable of all the different races I have tried. They do not like one to approach the front of their hive, neither can they be handled without smoke, but they are very easily subdued with it, and made as submissive as flies. Indeed they are easily frightened out of the hive, which is a good quality where one is extracting from an upper story, for a little smoke will cause them to leave it altogether, but in taking off comb honey, one has to be very careful not to get them frightened, or they will rush to the cells, uncapping the beautiful comb honey, in order to fill themselves and spoiling its appearance greatly. Black bees are not very good at protecting their combs from moth, but the careful bee-keepers will remove all combs not covered by them, and therefore the moth trouble is not of much conse-

quence. One good quality of Black bees is they do not cap their honey close on the honey as Italians do, but cap it a little raised, that is the cell is not quite filled, so that all their comb honey appears more white and beautiful, even buckwheat honey. They are good comb builders and enter the sections more readily than the Italians, and in a season of plenty they will store as much honey as any other race, but in a season of scarcity, or when they have to fly a great distance, they are far behind Italians. They will work on buckwheat more readily than Italians, but they cannot work on red clover to any extent, and they are great robbers.

In the summer of 1874 I procured my first Italian queen from Mr. Dean, River Star, Medina Co., Ohio, and another that same season from Mr. Alley, Wenham, Mass. I afterwards obtained queens from Mr. Blakeslee, Mr. Nellis, and several from A. I. Root, including an imported queen direct from Italy. We found the Italians far more gentle than the Blacks, but more vindictive when badly handled, also that hybrids or a cross between the two races, were apt to possess the vindictiveness of the Italians, and the irritableness of the Blacks. But the Italians as a rule are far superior to the Blacks, more easily manipulated, sometimes without smoke or protector, and taking one year with another, they will gather more honey. Yes, sometimes double the amount, for they can work on red clover readily in dry seasons when the heads are small and always on the second crops, and they will fly greater distances than the blacks. They are excellent to protect their hives from robbers, and from the ravages of the moth, and will adhere nicely and evenly to their combs (their queens being very easily found) and properly managed by the aid of foundation they will store more comb honey. Their best quality of all, which most writers have overlooked, is, they will breed up early in the spring, and when the honey flow commences they will cease breeding so profusely and bend all their energies to gathering in the precious nectar. Even the queen seems to understand it all, and will walk leisurely over the combs, apparently proud of the great wealth of the colony, not trying to lay drone eggs in every place possible and wanting to swarm. Bear in mind I mean pure Italians not hybrids.

In the summer of 1881 we obtained from our esteemed friend, D. A. Jones, of Beeton, two select tested Syrian or Holy Land queens, reared on one of his isolated islands in the Georgian Bay, and although I have been sorry a thousand times, I never said anything against them publicly. But I feel it my duty to say

now, 'tis a pity our friend D. A. Jones went to such a great expense to introduce such a vicious and worthless race of bees. They are so very prolific that they will spend the whole summer till away in the fall rearing brood and storing very little honey. Crossed with the Italians, some of them are very good honey gatherers, but it always requires two to work with them, with facility, one to use a smoker constantly.

Pure Syrians will allow you to stand before their hive without molesting you, and you can open their hive bare-headed and without smoke if you are careful enough, but woe-betide you if you jar a comb or crush a bee. It is impossible to shake or brush them from the combs without an attendant and plenty of smoke. Another bad thing about them is they are so apt to get drone laying workers, if only queenless for a few days. We crossed them with Italians, and my son Eli having learned the bee business by this time, we were able to work with them pretty well, he all the time protesting though and longing for the old Italians. With this cross we obtained as large yields of honey per colony as we ever did with any race of bees, but growing tired of their stinging propensity, we concluded to try the Carniolans. We ordered a Carniolan queen from Dr. Morris in 1885. The next year he sent us two others. The second queen the Doctor sent us produced such very gentle bees and good honey gatherers that we soon had our whole apiary Carniolanized, and thought we would never want any other bees. But we soon came to the conclusion that Carniolan bees are nothing but a very gentle race of Black bees, and not a distinct race at all. Although they have some fixed and peculiar habits, they are gentle to a fault. Why it seems difficult to cause them to sting at certain seasons, when the honey is coming in plentifully. Go at them bare-headed if you choose and without smoke; shake, brush, and even crush some of them, and they will not resent it. They were not all so gentle though, and it may be such swarms had a little Black blood mixed in, as it would be difficult to tell it by appearance.

Now, I have told all that is really good about them, that is, wherein they differ from other races. They are just as nearly like the Black bees in everything else as is possible for them to be. Splendid honey gatherers when all the blossoms are dripping with honey, and when they do not have to fly far or work hard to get it. Splendid comb builders, capping their honey so as to appear white, and if it becomes necessary to smoke them they will run out of their hive. They do not work on red clover to amount to much, and

here let me say I believe all Black bees ever seen working on red clover had Italian blood in them, for we know that in some hybrid swarms, some of the bees are perfectly marked three banded bees like pure Italians, and others are perfectly black.

Carniolans are not proof against the moth. They are apt to get drone-layers when deprived of their queen for any purpose, and they are much inclined to swarm.

In view of all this, in 1888 we ordered one of G. M. Doolittle's best tested Italian queens and Italianized our whole apiary, and now we are going to quit. We don't and never will want any other bees. We have drawn a long breath and feel happy again.

Carniolan and Syrian bees winter and come through the spring well, because they do not commence to rear brood early, while Italians do sometimes begin brood-rearing rather early, but they need no other stimulation than plenty of sealed stores, and they are ready for business at the right time. I believe common Black bees are next to Italians in this respect, but when Blacks get strong they are bound to swarm.

A cross between Italians and Carniolans is good (in fact we have reserved a few such swarms for comb honey) and they are gentle, but taking all things into consideration, nothing in my experience equals pure Italians.

ILA MICHENER,

Low Banks, Ont.

Your remarks in reference to Carniolans being a race of Black bees, are quite in line with the opinion of many others who have bought them. Few people can tell the difference between them and Blacks, and doubtless many who intended to send out pure Carniolans, sent out home-reared queens that were crossed with the ordinary Blacks. The Black bees of Eastern Canada and those of the Western States are the same American Black bees, yet our Eastern bees are blacker and slightly smaller than Western bees. The Brown Black Bees of Missouri and the West are often spoken of as a different breed. We have compared them and find but a slight difference. They are a little larger and somewhat lighter, verging on a brownish tinge, but this, we believe is owing to climatic influence, food and surroundings. Some claim that the brown or black bees of the West are more docile and better honey gatherers than ours of the East, but the difference, we believe, is due to climatic

influences. How many of us have not noticed that on a cool day, or when a damp raw wind is blowing, and especially when honey is scarce that bees are very irritable. In a warm locality, however, where the atmosphere is all that could be desired, even though there be no honey coming in, bees are not irritable. The difference in the temperament of the bees, without doubt, is due principally to the difference in the atmosphere. There is little doubt if the bees we now have were selected and bred very carefully they would give us as good results as any that we are likely to find in foreign lands, unless perchance some new race is discovered which possess superior qualities. If all the money and effort that have been put forth to secure foreign races had been judiciously expended in improving the bees we have, we have no doubt that the results would be more satisfactory. If we have climate, food and surroundings that are desirable, we can improve our bees every year by careful selection. Careful and systematic selection has given us the finest grades of stock which we now have.

For THE CANADIAN BEE JOURNAL.

Sterilizing Wax.

I AM pleased to see the candour with which Mr. Jones discusses the subject of my paper in the last issue of the C. B. J. It is evident that he is not disposed to contend unreasonably for the interests of the supply business, if they are found to be opposed to the interests of bee-keepers.

In the Norwegian cooking apparatus, it will be remembered the food is boiled for five or ten minutes, and then the saucepans are placed in a box lined with felt, which retains a great part of the heat. At the expiration of nine or ten hours the food is found to be thoroughly cooked.

In this apparatus the principle is the same as I have suggested for "cooking" the spores in wax, viz: that a long exposure to a lower temperature produces the same effect as an exposure to a higher temperature for a shorter time. Whether this is the only way or the best one I do not know, but I trust those who use foundation will not allow the matter to rest till the manufacturers adopt some infallible method for sterilizing their wax.

Mr. Jones admits that he would not care to

risk wax melted at a lower temperature than 212 °, because it might not be free from fertile spores. Did he ever test the temperature reached when rendering combs in the Jones wax extractor? I have found that a thermometer kept in the soft melting combs in the basket only went up to 175 °, and that when the bulb of another instrument was held in the stream of melting wax running from the spout, it varied from 180 ° to 200 °.

Mr. Jones says that in melting the wax by steam, preparatory to sheeting, it can be heated to a point which will kill the foul brood spores. It may be so, but did Mr. Jones ever test the temperature of a tank of wax just liquified by steam? When the only object is to melt it, I doubt very much if the heat of the liquid mass is ever higher than 180 ° or 190 °.

Mr. Jones says that in his somewhat extensive experience, he has never had a case in which foul brood returned after the germs had been submitted to the temperature of boiling wax, or of boiling honey. I wanted to get the temperature of boiling wax lately, and as I had no suitable thermometer, I got a friend who has one that registers up to 360 ° to attempt to make the test. He heated the wax until the mercury went up to the top of the scale, and yet there was no sign of boiling, but there was smoke and when cooled the wax was very much darkened. Will Mr. Jones please give us the temperature at which wax boils? I agree with him that it would be certain to kill the germs of foul brood.

As to 235 °, the temperature of boiling honey, being sufficient to kill the germs, the results reached in the bee-yards are not quite uniform. In a report of the N. E. Convention, page 54, A. B. J., 1881, a Mr. Riens is reported as saying that he fed out foul-broody honey which he had boiled till it nearly boiled over; in consequence he had ten or a dozen stocks affected with foul brood instead of two.

But Mr. Jones goes farther, and says that the temperature of boiling water will kill the germs. He believes so because he never had the disease return after feeding honey which had been subjected to this degree of heat. Again the experience is not uniform. Dr. Dziertzon tells us in his "Rational Bee-Keeping," that after boiling a hive the disease reappeared, and he attributes it to the fact that the germs were not killed by the temperature of boiling water.

If a very careful experimenter was set to work to sterilize honey by heat, his first step would be to satisfy himself that it actually contained spores. Mr. Jones is so certain that the disease lurks in the honey of infected hives, he

would probably consider it a waste of time to make such an investigation. This opinion he has arrived at by observation and experience. But here again the experience is not uniform. If Mr. Jones will turn to page 85 of the current volume of the A. B. J., and page 166 of that journal for 1889, he will find an apparently well authenticated case, in which a hive, far gone with foul brood, was robbed, and yet the honey carried off by the robbers did not communicate the disease.

I can almost imagine I hear Mr. Jones suggesting suppositious explanations, and errors in practice, for the results reached by others, which differ so much from those worked out by himself. There is so much uncertainty about the results obtained by what Mr. Jones calls "practice" that the whole thing is little better than a magnificent system of guessing. Science is gathered knowledge, and is always in accord with correct practice, but it would require a very elastic sort of science indeed to be in harmony with results differing so widely as the above.

The death point of spores of foul brood is somewhere between 191° and 257°, but just where that point lies it is clear will never be determined experimentally in the bee-yard, because the surroundings are such as to expose the work of the most careful experimenter to too many sources of error. The exact degree of heat which will kill the most indurated spores of foul brood can be ascertained by careful and pains-taking experiments in the laboratory only. When that point is determined we shall have no further anxiety about sterilizing honey or wax.

Mr. Jones fears that the method I suggested would render the work of melting slow and tedious. A tank 3x4x6 feet will hold two tons. If the wax were sterilized in batches of this quantity it is probable the manufacturers could keep up with their orders.

If this method is adopted, the manufacturers will not only have the satisfaction of furnishing their customers with *cooked* spores, instead of serving them up *raw* as heretofore, but as Mr. Jones says, the quality of the wax will be better than any now in the market.

S. CORNELL.

Lindsay, 27th March, '91.

Mr. Cornell's article arrived too late for us to make room for comments, but we shall have something further to say next issue.

THE CANADIAN BEE JOURNAL

ISSUED 1ST AND 15TH OF EACH MONTH.

D. A. JONES, - - - EDITOR-IN-CHIEF.
F. H. MACPHERSON, - - ASSOCIATE EDITOR.

BEETON, ONTARIO, APRIL 1, 1891.

Mr. R. F. Holtermann will resume the management of the supply business of E. L. Goold & Co., Brantford, from this date.

Death has visited the families of quite a number of bee-keepers this last month or two. The wife of Mr. P. L. Viallen, Bayon Goula, La., died on the 3rd March, and on the 15th March the wife of Mr. C. Wurster, Klienburg, Ont., died of typhoid fever. Our sympathies are with the bereaved ones.

Mr. J. Dunn requests us to state that he does not manufacture for sale, the winter case described on page 437, as he does not deal in supplies of any kind. He wishes this known so that he may be saved the trouble of answering questions.

The spring meeting of the Brant Bee-Keepers' Association, will be held at the Court House, Brantford, on Saturday, April 4th. Papers will be given by J. R. Howell and Geo. Barber, and Mr. F. A. Gemmill will lecture on foul brood.

Mr. Macpherson is still unable to resume his duties, and he is at present under the medical care of Dr. W. T. Aikens, of Toronto, who states that *complete brain rest* will be the only cure for his trouble, caused by the accident about a month ago.

Extensive changes had been contemplated in the "get-up" of the BEE JOURNAL, commencing with the volume of which this is the first issue, but those will have to be postponed, pending the return to health of Mr. Macpherson, who has charge of the business management of the Co. When these changes do come our subscribers will be more than pleased with them.

It may be well to mention that many letters relating to the C. B. J., and other matters are not answered, because of the absence of Mr. Macpherson, into whose department these matters come.

Queries and Replies

UNDER THIS HEAD will appear Questions which have been asked, and replied to, by prominent and practical bee-keepers—also by the Editor. Only questions of importance should be asked in this Department, and such questions are requested from everyone. As these questions have to be put into type, sent out for answers, and the replies all awaited for, it will take some time in each case to have the answers appear.

Contraction of Brood Chamber,

QUERY No. 291.—Do you practice contraction of the brood chamber during the honey flow, and to what extent?—J. M. B.

R. MCKNIGHT, OWEN SOUND.—No.

DR. C. C. MILLER, MARENGO, ILL.—No.

J. ALPAUGH, ST. THOMAS, ONT.—No.

S. CORNEIL, LINDSAY, ONT.—No sir.

H. D. CUTTING, CLINTON, MICH.—Only in a very few cases.

C. W. POST, MURRAY.—No. I want 10 Langstroth frames of all worker comb.

PROF. A. J. COOK, LANSING, MICH.—Yes, when hiving new swarms in the honey season.

M. EMIGH, HOLBROOK, ONT.—Yes, sometimes when I want a nice lot of comb honey, leaving four or five frames below.

EUGENE SECOR, FOREST CITY, IOWA.—I have, to the extent of taking out two Langstroth frames, out of eight and substituting dummies.

G. M. DOOLITTLE, BORODINO, N. Y.—I allow only 5 or 6 Gallup frames to all new swarms. Rarely contract the brood nest (9 frames in parent colony.)

J. K. DARLING, ALMONTE—Only partial, but shall do so more in the future. Without it there is too much brood when it is not wanted, and too little honey when it is wanted.

ALLEN PRINGLE, SELBY.—Yes, I do, to the extent of diminishing and eight or ten Langstroth say to six frames for the queen; or a Heddon to one section of the brood chamber.

J. F. DUNN, RIDGEWAY—Not as long as honey is stored rapidly in the supers. When the bees fail to store in the supers I soon get at the trouble by examining the brood chamber, and if necessary, contract; but never have to do much of it.

G. A. DEADMAN, BRUSSELS.—Yes. I confine the queen on four Jones frames when running for extracted honey. I double any weak colonies so as to have eight frames or more, of brood, in each hive, and then confine the queen as above, adding empty frames from which to ex-

tract. I consider this far better than caging the queen, it being somewhat of a compromise.

JAS. HEDDON, DOWAGIAC, MICH.—SURE. The same as described in my book, "Success in Bee-Culture." I consider the practice a most important one. I have now, (since the Oatmans, the originators, have gone out of the bee business) used the contraction method longer than any bee-keeper in the world, so far as the records show, and I swear by it.

J. E. POND, NORTH ATTLEBORO, MASS.—I do not. I have a plan originated and first made known to the bee-keeping public by myself some years ago which I then called, and it is now called, "The Close Spacing Principle." It will require too much room here to give the principle in full, but it will be found discussed in the bee journals for the last two years. The idea is that all combs should be spaced just *bee space apart*, during the honey gathering season.

G. W. DEMAREE, CHRISTIANBURG, KY.—I do not. The best contraction is a standard size brood chamber filled with brood and sealed honey. There can be no reason why a brood chamber filled with brood alone, is in a better condition for storing surplus above it, than if a brood chamber with same amount of brood and the rest of the space filled with sealed combs of honey. Bees are governed in a peculiar way by habit, when once started in the surplus cases bees, by obedience to habit, will neglect the brood nest, and often come through the honey season in a starving condition, after the surplus is removed. For this reason I want my bees to have room for stores in the brood chamber.

BY THE EDITOR.—Yes, giving queen small brood chamber, just enough to satisfy the calling.

An Under-rim for Ventilation.

QUERY No. 292.—Do you advise the use of a 2-inch rim between the bottom and brood chamber for wintering, and what other purpose does it serve besides preventing dead bees clogging the bottom of the frames?—A. B.

DR. C. C. MILLER, MARENGO, ILL.—Yes. Gives more air.

EUGENE SECOR, FOREST CITY, IOWA.—I do not. I believe it is not necessary to success.

ALLEN PRINGLE, SELBY, ONT.—For loose bottoms I think it is good. The "other purpose" would be facilitating ventilation.

R. MCKNIGHT, OWEN SOUND.—Sometimes I use 4 inch rims. Not aware that they serve any other good purpose than the one stated.

M. EMIGH, HOLBROOK, ONT.—I have never used such a rim. I think it would be all right as far as wintering is concerned.

G. M. DOOLITTLE, BORODINO, N. Y.—I use them to a certain extent out doors, and extensively in the cellar. 2nd. It allows of better ventilation.

C. W. POST, MURRAY.—No. I place 1/2 in. blocks under the front corners of my hives and give the hives a two inch slant forward, and it answers every purpose, and much less trouble.

J. K. DARLING, ALMONTE.—Have never tried it, but think it would be a benefit to full colonies as it would give more chance for the air to circulate, without giving direct draught.

H. D. CUTTING, CLINTON, MICH.—I use the inch space under nearly all my hives in winter, and find it an excellent thing. I advocate plenty of bottom ventilation, and not a particle on top.

S. CORNELL, LINDSAY, ONT.—If provided with a small opening under the rim, at the end opposite the entrance, it makes ventilation a certainty, that is assuming the entrance to be above the rim.

J. F. DUNN, RIDGEWAY, ONT.—I do not doubt that that would be an advantage, but if you keep your entrance clean by running a wire in entrance, and scraping bees off bottom board, they will do as well without the two inch space.

PROF. A. J. COOK, LANSING, MICH.—There is no expense or trouble, I should like it much. I do not use it except in a small way for experimental purposes. I feel certain that it is a benefit from actual trial. I presume it aids in keeping all sweet and clear.

J. ALPAUGH, ST. THOMAS, ONT.—The bottom hives in my cellar are raised on a one inch rim, to keep them from getting clogged up with dead bees. I have rims under some of the ones I am wintering out of doors, but as yet cannot say anything about them.

J. E. POND, NORTH ATTLEBORO, MASS.—It makes little difference whether such rims are used or not; the only object that I see that it can serve, is to catch dead bees, which I think ought to be removed, instead of being allowed to remain.

JAS. HEDDON, DOWAGIAC, MICH.—Well, I am not real sure that the rim is a real advantage, though I favor it. I am testing it still another time this winter. Some times it seems a real benefit, and I guess it is. I do not know that any one can tell all of the reasons why.

G. A. DEADMAN, BRUSSELS.—I suppose it would be very good, but for my part I see no need of going to this trouble as my bees winter without. Have large entrances when in the cellar and loose bottom boards. Should any bees collect on the bottom board they are then easily removed.

G. W. DEMAREE, CHRISTIANBURG, Ky.—I do not have any use for such an arrangement, and, therefore, do not advise its use. I think it most probable that to raise the hive by means of a 2

inch rim put under it, would help to keep the comb dry and keep the entrance from being clogged with dead bees, especially when wintering in the cellar.

BY THE EDITOR.—We use tight bottom boards and much prefer them, but can arrange them to be both tight and loose as required. Would it not do to hang the frames in supers if necessary, this would raise them about four inches at bottom.

SELECTIONS.

THE KOCH LYMPH OF GREAT DIAGNOSTIC VALUE.

In the March number of the *Popular Science Monthly*, I have just been reading an address given by a medical friend of Dr. Koch, at the City of London Hospital for Diseases of the Chest. In this address the author mentions the value of the Koch remedy as a diagnostic, whereby is readily determined the existence of tubercles in the system. I consider this of such value, that, even though it is not very intimately connected with bee-keeping, still its importance will probably warrant the use of the space it occupies:

"One c. c. of a one per cent. solution—that is to say, a dose of 0.01 c. c. of the remedy—is the smallest dose which affects healthy adults, and the symptoms, more or less marked, following its administration are, in the majority of cases, slight pains in the limbs and a sense of transient fatigue. Only a few persons after this dose show a rise of temperature up to not more than about 100° Far. The word "reaction" is used to indicate the symptoms, mild or severe, which follow upon the use of the remedy. In non-tuberculous adults there is no real reaction consequent upon the administration of any dose of the remedy less in amount than 0.01 c. c.; therefore, the presence of reaction in an adult after a dose less than 0.01 c. c. of the remedy shows the presence of tubercle in the patient. If in the adult no reaction were obtained by any dose short of 0.01 c. c., then it would be certain that the case in question was not one of tuberculosis. This is a law to which no exception has hitherto been found, and it gives the remedy great diagnostic value, which, it seems likely, will be one of its most useful clinical applications. The law applies to both man and to beast and all tubercular conditions; Already cases have occurred in which the presence of tuberculosis was not even suspected until the remedy was injected, and reaction followed."

* * Clubs of five, at one time, to any address for \$7.25; ten at one time \$6.00; 20 at one time \$11.00; 50 at one time \$25.00. This is an excellent opportunity for associations.

CAPPINGS.

CUT FROM A VARIETY OF COMBS.

Bees In His Breeks.

STRANGE ADVENTURE OF A COOL SCOTCHMAN OF HOWICK, COUNTY OF HURON, ONT.

SANDY Barns, of the 9th Con. Howick, is perhaps one of the best known farmers that township. By industry, straight and honorable dealings, he stands to the top of the ladder, notwithstanding the many mishaps that have befallen him during his life. About twenty years ago he nearly chopped off his left hand while hewing a wedge. A few years ago while driving a reaper his horses ran away, knocked him down and ran the reaper over him, mangling him so much that those who saw him concluded that his end had come, but Sandy did not think so and was soon to be seen at work again as usual. However, one day last week, Sandy's genuine Scotch blood was made to almost stand still in his veins, and this is how, we are informed, that it happened. He is a great lover of bees, keeps innumerable colonies and takes great delight in working among them. Upon this occasion he was trying to secure a fine young colony that had just swarmed and had nearly succeeded when the queen lighted upon Sandy and began prospecting for a suitable location. Now, unfortunately, there was a place on the seat of his pants where a patch should have been, and this opening the queen soon found, and in she went, followed by a thousand of her faithful subjects. Here was a dilemma that taxed this cool, canny Scot. He knew to attempt to stop them would be fatal, and as every second added to his trouble he shouted for help, but when help arrived the inside of his pants were bulged out with bees. What was to be done, anger the bees and death was certain, and although he had received many a good sting he still stood solid as a rock, not daring to move. The assistants had wits and soon procured a pair of scissors and by gently handling the pant-legs and shirt, he was soon cut out of his clothes and safely in the house, although his legs, body, face and hands, were badly swollen from the effect of the many stings. Presence of mind and cool Scotch courage saved him this time as it had saved him many other times before.—*Harrison Tribune.*

CONDUCTIVITY OF HIVE-WALLS.

With a view to test the relative conductivity of different hive-walls I recently spent about a week in conducting experiments, and in making preparations for them. The hives used were eight frame Langstroth. No. 1 was a single-walled hive, made of scant 7/8-inch lumber, sent to a neighbor as a sample hive from the factory of Mr. Heddon. Nos. 2 and 3 were half an inch wider, and one-eighth inch lower inside. Both of these were double walled, with 1 1/2 inches for packing. The outer walls were plump 3/4-inch, ship-lapped, and lined with one thickness of building paper to keep the wind from driving in through the

joints. The inside walls were composed of picture-backing, say about 1/4 inch thick. In No. 2 the walls were firmly packed with cut straw, such as is used for fodder, and in No. 3 they were packed with granulated cork.

The bottoms were removed. In order to cause the cooling to take place as much as possible through the sides, each hive was covered with two cushions of wool tacked down with strips, the cushions weighing together 29 oz. There was a difference of only half an ounce in the weights of the three covers. To prevent the escape of heat as much as possible downward, similar cushions were fastened on the under side of the bottoms.

The first step was to verify my thermometers. I tested five instruments simultaneously, and, as it happened, the variations were so slight that, in experiments of this kind, they might be ignored. When everything was ready, a tin ball, containing 7 1/2 lbs. of boiling water was set on each bottom-board, and the hives set over them. The thermometers were then inserted through slits in the quilts, so that the bulbs extended into the water. After the mercury began to fall in each instrument, readings were recorded every half-hour for ten hours and thirty-five minutes. At the end of that time the temperatures, which at the first reading were 170, 171, and 175°, had dropped to 40, 48, and 58° respectively. It was noticeable, that at first the thermometer indicated higher in the single-walled hive than in either of the others, the heat in the latter being absorbed, I presume, in warming up the thicker walls.

It would, perhaps, be interesting to the reader to be able to examine the record of the readings in detail, but it would take up considerable space.

The outside temperature during the time the readings were taken averaged about 1 below 0. The following figures show the times of cooling down 100°.

Single-walled hive.....	330 min.
Straw-packed ".....	450 "
Cork-packed ".....	450 "

When this experiment was finished, I was not satisfied with the result. The double-walled hives did not stand close on the bottom-boards. I tried to fill up the cracks with Oakum; but with a wind blowing, and a zero temperature, a very slight crack would vitiate the result; so I resolved upon another trial.

In the second experiment I fixed up the bottom-board so that they would hold 2 1/2 inches in depth of dry wood ashes, this being a very good non-conductor of heat. On these beds the hives were placed, and pressed down so that they were comparatively air-tight at the bottom. In this case the bulbs of the instruments were not placed in the water, but extended below the covers about two inches. During this experiment the outside temperature averaged about 10° above 0. The times of cooling down through 65° were as follows:

Single-walled hive.....	390 min.
Straw-packed ".....	460 "
Cork-packed ".....	475 "

In this experiment I found that, having the hives close together, affected their rate of cool-

ng perceptibly, from which we may infer that, by placing hives close to each other in clamps, cellars, etc., they will keep warmer than when a greater distance apart. I thought, too, that after all, keeping the bulbs in the water gave safer indications of the rate of cooling, so I determined to try it over again once more.

In the third experiment the hives were placed on beds of ashes as before; but I now packed soft wet snow around each hive, and crowded it up against the walls every hour to prevent air-spaces forming. The bulbs of the instruments were placed in the water as in the first case. This experiment I regard as the most reliable of the three. The times of cooling down 75° were as follows:

Single-walled hive.....	503 min.
Straw-packed "	570 "
Cork-packed "	675 "

When Count Rumford made his elaborate experiments on the conductivity of materials used in clothing, about 100 years ago, his method was this: "A mercurial thermometer was suspended in the axis of a cylindrical glass tube ending in a globe, in such a manner that the center of the bulb of the thermometer occupied the center of the globe; the space between the internal surface and the bulb was filled with the substance whose conductive power was to be determined. The instrument was then heated in boiling water, and afterward being plunged into a freezing mixture of pounded ice and salt, the times of cooling 135° were noted."

My experiments were imperfect in this respect. Although the hives had been kept over night in the kitchen, there was a great difference between their temperature and the temperature of the water placed in them. Owing to the difference in material and thickness of the walls, the amount of heat absorbed by the walls in each case was not the same. If I could have placed the whole in a large oven, so as to heat all the materials to the same degree, as was done in Rumford's experiment, the result obtained would have been more reliable. As it is, however, the experiments give some indications of the comparative warmth of the different hive-walls.

S. CORNEIL.

Lindsay, Ont., Feb. 20.

HOW TO KEEP BEES AWAY FROM WATERING TROUGHS.

Among some of the good things we learned at Keokuk last fall was a little hint worth remembering from A. N. Draper. He is an extensive honey-producer—a man who owns several out-apiaries. Said he: "People have had a good deal to say about keeping bees away from watering troughs. I will give you a secret that is worth them all. Take a weak solution of carbolic acid, and paint it around the edges of the trough, and then they won't bother your neighbors. If you get them out of the habit of visiting such places, they will stay away." We have used enough carbolic acid in the apiary to feel pretty tolerably certain that this will work. Put this down in your note-book, and try it next season and report.—*Gleanings*.

A pigeon fancier in Hamme, Westphalia, made a wager that a dozen bees, liberated three miles from their hive, would reach it in better

time than a dozen pigeons would reach their cot from the same distance. The competitors were given wing at Rhyndern, a village nearly a league from Hamme, and the first bee finished in a quarter of a minute in advance of the first pigeon, three other bees reached the goal before the second pigeon, and the main body of both detachments almost simultaneously an instant or two later. The bees, too, may be said to have been handicapped in the race, having been rolled in flour before starting for purposes of identification.

Catalogues Received.

A. I. Root, Medina, O.—Seventy-second edition catalogue and price list of everything in the apiary—revised to January, 1891.

W. T. Falconer Man'g Co., Jamestown, N. Y., U. S.—Simplicity hives, bee-keepers' supplies, etc. Catalogue, 1891.

Dr. G. L. Tinker, New Philadelphia, Ohio.—Eighth annual circular and price list apiarian supplies.

Orange Judd Co., 52 & 54 Lafayette Place, New York.—Catalogue of Rural Books.

Lambton Bee-Keepers.

The Lambton Bee-Keepers' Association will hold its semi-annual convention in the Watford council chamber, Watford, Ont., on the 11th of May 1891. All interested in bee-keeping are cordially invited.

W. E. MORRISON, Secretary, Alvinston.

Central Michigan Bee-Keepers.

The Central Michigan Bee-Keepers' Association will be held at Pioneer Room, at Capitol Lansing, on Wednesday, May 6th, '91, an invitation is extended to all.

W. A. BARNES, Secretary, Lansing.

WANTING—a situation by a practical Beekeeper, one who has had experience in all branches. Good references given. Address Box A, Mellis Corners

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ADVERTISEMENTS.

EXCHANGE AND MART

25 CENTS pays for a five line advertisement in this column. Five weeks for one dollar. Try it.

BEEES

WAX WANTED—Say with return mail how much you have and color. Price in cash. CHARLES MITCHELL, Molesworth, Ont.

FOR SALE—50 colonies of Italian and Hybrid bees, frames 9 x 16 1/2 inside. My hives are the excelsior, all pine. Satisfaction guaranteed. Prices on application. CHAS. F. ALLYN, Jr., Comber, Ont.

WANTED—An experienced hand to work in the bee yard, and to take charge of an out apiary if required. Also good beeswax. B. Leghorn eggs for sale, \$1 per 13. JACOB ALPAUGH, Box 704, St. Thomas, Ont.

GREAT CHANCE for the Beekeepers—For sale very cheap, one 10 inch comb foundation mill, (W. Felham make), new and used very little. Will sell for \$20 cash. L. Deslandes, P. O. Box 10, Acton Vale, Que.

FOR SALE OR EXCHANGE—50 colonies of Bees in 8 L. frame hives, for lumber wagon, double set of harness, or bob-sleigh, or anything useful on a farm. Address W. ELLIS, St. David, Ont.

MENTION this Journal if you are writing about anything advertised in its columns.

LOOK HERE !

If you want Hybrid or Black Bees from March 15th to May 15th at \$1 Per lb or Hybrid Queens at 50 cents and Blacks 25 cents. Send me your orders and see how promptly I will fill them. Have shipped bees successfully for 10 years to Northern States and Canada. Safe arrival and satisfaction guaranteed. Mrs. JENNY ATCHELEY, Farmersville, Tex.

CLAMPS FOR SPRING PACKING.

All practical Beekeepers concur in the opinion that bees wintered in the cellar, should be packed on their own stands in spring, to keep them in the best condition. We are making a light clamp specially designed for this purpose.

This clamp consists of a bottom board of 3/4 in. lumber to cross pieces 7/8 x 3 in. to set hive on to allow of packing under; the four wall and a bevelled rim to cover the packing above. Arranged so as to allow of using the ordinary lid of hive for cover. To be used with 4 inches of sawdust or chaff, and will be in sizes to suit the Jones Combination or Langstroth hives, at the following figures:—

Each	5	10	25	100
	75	70	67	63

They will be shipped in panels, ready to nail together.

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

POULTRY

A FEW Silver Laced Wyandotte Cockerels for sale from American prize winning birds. Eggs for hatching in season. W. J. O'NEIL, Paris, Ont

THE following birds for sale—a good trio of Pekin Ducks, \$9; Silver Wyandotte Cockerel, \$2.50; Golden Wyandotte Cockerel, \$2.50 and other stock. JOHN GRAY, Todmorden, Ont.

FOR SALE—Eggs from my prize stock of Blue Andalusians, \$2 per 13. I will give a silver cup for the best pair of Andalusian chicks from my eggs at the Ontario show at Bowmanville 1892. W. H. DUSTAN, Bowmanville, Ont.

IMPORTED INDIAN GAME—Poultry Pigeons, Rabbits, Ferrets, Guinea Pigs, Shetland Ponies, Mares, Cats, Dogs, Garden Seeds and Flowers. Send for my Circular. Address Col. J. Lefel, Springfield, Ohio.

FOR SALE—Langshang Cockerels and Pullets from imported stock, or will exchange for Bremen Geese or Bronze Turkeys. Langshang, Dark Brahma, White Leghorn and Pekin duck eggs, \$1 per setting. AYLWEN & HAMILTON, Hamilton, Ont.

EGGS from choice W. Wyandottes, R. C. B. Leghorns B. Plymouth Rocks and S. C. W. Leghorns at \$2 per 15, or \$3 per 25. Fine Pekin duck eggs at \$1 per 11. My birds win at Canada's largest shows. Satisfaction guaranteed. R. J. GRACEY, Wellandport, Ont.

R. BLOYE, Todmorden, has eggs for hatching from grand pens of White Wyandottes (Knapp) White Plymouth Rocks (Empire) and White Javas at \$2 per 13. Pekin duck eggs, \$1 per 12. Correspondence a pleasure.

FREE 1 pack Mam. Russ. Sunflower seeds with each order. Dark Brahma and Toulouse Geese. Eggs 10 and 40 cts each, respectively. From best prize-winning strains. Price reduced one half, owing to large numbers. Mention this Journal. S. R. B' SMITH, Brighton, Ont

FOR SALE—Four White Leghorn Cockerels, scoring from 92 1/2 to 95 1/2; 4 Black Leghorn Cockerels, scoring from 92 to 95 1/2 by Smelt and Jaryis; 3 Black Minorca Cockerels, Picknell's strain, also one pair of White Bearded Poland Chicks. I guarantee satisfaction. JOHN PLETSCHE, Shakespeare, Ont.

FOR SALE—My entire stock of Black Leghorns, one Cock, 3 Cockerels, 10 Pullets and four hens, for twenty dollars, with following score cards, Cock, 95, Cockerels, 95 1/2, 95, 92 1/2, hens, 93 1/2, 94, 95 1/2, 93. Pullets from 94 to 96. Have to sell for want of room. Eggs from White and Brown Leghorns and Black Minorcas for \$2 per setting. JOHN PLETSCHE, Shakespeare, Ont.

WHITE WYANDOTTES,
EXCLUSIVELY

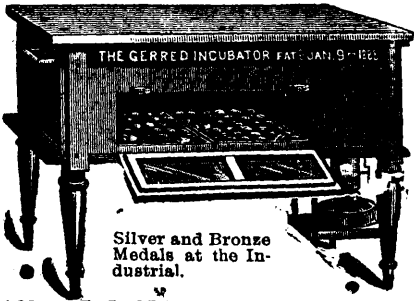
BRED to large size. Red ear lobes, bright yellow legs and fine rose combs well spiked—fine white plumage, closely feathered. This strain are grand egg producer. Pen headed by 1st PRIZE COCKEREL AT INTERNATIONAL BOOKED 96 POINTS, two females in this pen scored 95 1/2 and 97, and more just as good. This mating will produce prize winners. Eggs \$1.50 per setting. Stock for sale after Oct. 1st. J. F. DUNN Ridgeway, Ont.

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THOUSANDS OF BOTTLES GIVEN AWAY YEARLY.

When I say Cure I do not mean merely to stop them for a time, and then have them return again. I MEAN A RADICAL CURE. I have made the disease of Fits, Epilepsy or Falling Sickness a life-long study. I warrant my remedy to Cure the worst cases. Because others have failed is no reason for not now receiving a cure. Send at once for a treatise and a Free Bottle of my Infallible Remedy. Give Express and Post Office. It costs you nothing for a trial, and it will cure you. Address—H. G. ROOT, 66-67, Branch Office, 186 WEST ADELAIDE STREET, TORONTO.

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Silver and Bronze Medals at the Industrial.

Address E. J. OTTER, Manager, Gerred Incubator Co., 90 De Grassi street, Toronto.

All sizes, 50, 100 and 200 egg machines. Send for descriptive circular. MENTION THIS JOURNAL.

EGGS, \$1.00 for 13.

- Light Brahmas—Six yards. Fletcher, Duke of York, Williams and Bucknam strains
- Dark Brahmas—Three yards. Mansfield and Bucknam strains
- White Cochins—Two yards. Lovell strain
- Partridge Cochins—Three Yards. Williams, Booth and Washington strains
- Buff Cochins—Three yards. Gold Dust strain
- Black Cochins—Two Yards Williams strain
- Langhans—Three yards Groat strain
- White Plymouth Rocks—Four yards
- White Wyandottes—Two yards
- Silver Wyandottes...Two yards
- Barred Plymouth Rocks...Twelve yards. Drake Upham and Corbin strains
- Hendans—Two yards Pinckney strain
- White-Faced Black Spanish—Two yards McMillan and McKinstry strains
- Rose-Comb Brown Leghorns...Two yards Forbes strain
- Rose-Comb White Leghorns...Two yards Forbes strain
- Single Comb White Leghorns...One yard
- Single Comb Brown Leghorns...Two yards Bonney strain

I make a specialty of furnishing eggs in large quantities for incubators at reduced rates. Send for 1890 catalogue.

E. H. MOORE, Melrose, Mass.

MENTION THIS JOURNAL.

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—ESTABLISHED 1876—

CHATHAM. . . . ONT.

Largest variety, Best Quality, Lowest prices. All the worthy old and promising new Fruit, Nut and Ornamental Trees, Bushes, Vines; Roses, Plants, Bulbs, etc. Best improved Pumps for spraying trees, bushes, sidewalks, floors, bees, etc., and washing buggies, windows, etc. Galvanized Iron, \$3.50, Brass, \$4.70. Wilson's Improved Woven Wire Tree Guards, for hindering Rabbits, Mice, etc., 50 cts. per doz. \$4 per 100. Great Dane and St. Bernard Dogs, 8 weeks old, \$20 to \$25 each, smooth-coated Fox Terrier, 8 weeks old, \$5 to \$10 each. Above dogs are from the best blood of Europe and America and won the best kennel prizes in Toronto Greatest Bench shows in '89 and '90, where there were hundreds of competitors.

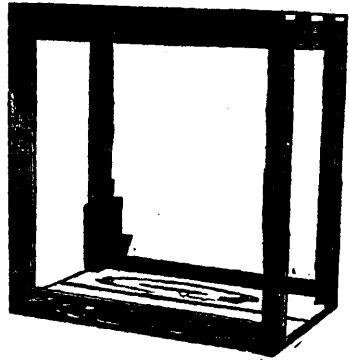
TERMS:

CASH—small but sure profits. Send your address now for my large catalogue and Guide to Fruit Growers, which will be issued about March—free to intending purchasers.

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Nurseryman, Chatham, Ont.

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Save money in express charges by buying light, we made coops—weigh only 5 1/2 lbs.

We keep in stock one size only, 20 in. x 13 in. x 20 in for pairs or light trios.

PRICES MADE UP.

	Each	10	25	100
Skeletons, only,	30c.	\$2.75	\$6.2	\$22.50
With Canvas,	40c.	3.75	8.55	30.00

PRICE IN FLAT.

Skeletons, only,	50c.	2.50	5.00	12.00
Name and address printed on canvas 5c. each extra,				\$3.00 per 100.

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OTHER SIZES.

We make coops in any size desired, and shall, at all times, be prepared to quote prices. In asking for estimates please give size and number wanted.

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For shipping and exhibition coops, to hold one pint water. Price,

Each	10	25	100
15c.	\$1.40	\$5.25	\$19.00

The water cannot slop out or become dirty. Larger sizes made to order. Ask for Prices.

MAKE YOUR HENS

Earn their living by scratching for it.

—TRY—

Christie's Improved Feeder

It gives the fowl constant exercise and saves you the trouble of feeding them—they feed themselves automatically.

	1 qt.	2 qt.
Each, by	\$.50	\$.80
Per doz.,	4.00	4.80



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WILL. A. LANE,

TURNERVILLE, ONT., BREEDER OF HIGHEST TYPE

Mammoth Bronze Turkeys

I am selling eggs this season from one of the finest matings of Mammoth Bronze Turkeys in America. I have spared no pains nor expense to bring my flock up to the highest standard of excellence, to do which I have made several costly importations of eminent prize-winners. The Cock that leads my pen is a famous prize-winner, having won several first prizes in strong competition. Mated with him are the largest and handsomest pullets and hens I could procure; notable among them being the first prize hen at the great Cleveland show (score 98). Eggs from this grand pen 30cts. each; \$3 per nine. To those ordering one or more settings before April 1, I will send one extra egg for each setting ordered. Free circular.

Prices to suit the Times

A FEW pairs of Silver Laced Wyandottes and a few Plymouth Rock cockerels for sale cheap. Brown White and Black Leghorns, White and Barred Plymouth Rock, White and Silver Laced Wyandottes. Eggs of any of the above varieties, or mixed, at \$1.50 per setting, or two settings or \$

WM. MOORE,

MENTION THIS JOURNAL Box 462 LONDON, ONT

LOOK HERE I

Dunville P. P. Stock

3rd Exhibition

1st and 2nd on S. C. B. Cock. These birds are for sale 2nd on S. C. B. Hen, 96; 1st on Blk Minorca Pullet, 94 1st on S. C. B. Leghorn, B. P.; 1st on Blk Minorca B. P.; 1st on Pekin Duck, 1st on Pekin Drake, drake for sale. A 1 birds for sale now.

C. H. McRae

Park Poultry Yards, Dunnville.

Poultry Netting & Fencing.

We can now furnish the best Poultry Netting at the following low prices for 9 in. mesh No. 19 wire, in the various widths, in full roll lots (150 feet to roll):

24 in.	30 in.	19 GAUGE.	48 in.	72 in.
\$3 10	4 00	36 in.	60	9 50
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\$3 25	4 00	18 GAUGE.	6 30	9 90
		00		

Less than full roll lots the price will be 1/2 c sq ft

D. A. JONES, CO., BEETON,

CARNOLIAN :- QUEENS.

I expect to continue the breeding of Choice Carnolian Queens next season, and orders will be booked from date. No money sent until queens are ready to ship. JOHN ANDREWS, Paten's Mills. Wash. Co. N.

BLACK AND WHITE LEGHORNS

AND IMPERIAL - PEKIN - DUCKS.

Will be able to spare a limited number of eggs from the above varieties. My Black Leghorns have always won highest honors wherever exhibited and have genuine standard legs, "no artificial coloring about them." My whites are headed by "Snowball," recently purchased from R. H. Marshall of Dunnville, Ont., having scored 96 1/2 points last winter at the Ontario and 94 1/2 again this winter at Dunnville as a cock. I have him mated with Hens and Pullets, scoring from 94 1/2 to 97. I consider this as grand a pen as there is in Canada to-day. My pen of ducks comprise the 1st prize Drake and 2nd prize Duck at Industrial last fall, owned then by Aller Bogue, London, Ont., also 1st prize Duck at Milton this winter. Leghorn eggs \$3 per 13 or settings one of each, \$5. Duck eggs \$2 per 11, packed carefully in baskets with handles. Address P. E. Hamilton, Hamilton.

ATTENTION FANCIERS!

I shall soon import from England a large number of

BUFF LEGHORNS

AND Indian Games.

Orders received until Nov. 20th for imported birds. Buff Leghorns are all the rage. Send for prices. I have some fine BLACK LEGHORNS for sale.

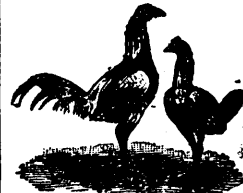
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Box 1293, Springfield, Mass.

GAME

Bantam Fanciers

NEW FANCIERS.



Eight Black Red Cockerels—grand ones, guaranteed Bred from a Crystal Palace cup winner. Sure to please you; from \$2 to \$5 each. Some Fine Brown-Reds at \$4 to \$5 per pair; also a good Pile Bantam Cockerel, (yellow legged), bred from a great English winner, fine station, color, etc. Price only \$3, these are sold on account of having too many birds; also large Game fowls. All are in fine health and condition. First money gets the best. E. F. DOTY, 47 Wellington Place, Toronto

THIS SIZE AD.



3 months..... \$3 00

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Payable in Advance.

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J. & E. H. MYERS,

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The Wide Awake Bee-Keeper

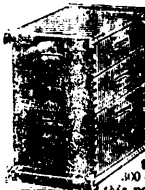
Who reads the BEE-KEEPERS'S REVIEW one year, or even a few months, is almost certain to become a regular subscriber. As an inducement to non-subscribers to thus become acquainted with the REVIEW, I will send during the three succeeding months for 20 cents in stamps, and I will also send three back numbers, selecting those of which I happen to have the most, but

of different issues. A list of all the special topics that have been discussed, the numbers in which they may be found, and the price of each will also be sent. Remember the Review has been enlarged, a beautiful cover added, and the price raised to \$1.00. W. E. Hutchison, Flint, Michigan.

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

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SWARM HIVER

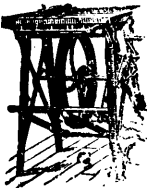
Thoroughly tested and guaranteed to SELF HIVE every swarm that issues. Sample by mail for \$1.00. American Apiculturist one year and swarmer by mail \$1.50. Sample Apiculturist giving full illustrated description of Swarmer free

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12,000 ACRES
GOOD FARMING LAND
—TITLE PERFECT—

On Michigan Central and Detroit & Alpena and Loon Lake Railroads, at prices from \$2 to \$5 per acre. These lands are close to enterprising new towns, churches, schools, etc., and will be sold on most favorable terms. Apply to R. M. PIERCE, West Bay City, or to J. W. CURTIS, Whittemore, Michigan.

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Read what J. J. Parent, of Charlton, N. Y., says—"we cut with one of your Combined Machines, last winter 50 chaff hives with 7 inc cap. 100 honey racks, 500 broad frames, 2000 honey boxes, and a great deal 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, 64 Ruby st. Rockford, Ill.

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	Untested	Tested	Select Tested	Bees by lb. fr'm Virgin	May
May	\$1 50	\$2 50	\$3 00	\$	\$1 25
June	1 00	2 00	3 00	60	1 00
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August	75	1 50	2 00	50	75
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