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THE CANADIAN BEE JOURNAL

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

VOL. VI, No. 24.

BEETON, ONT., MAR. 15, 1891

WHOLE No. 284

THE "CANADIAN BEE JOURNAL"

Devoted exclusively to the interests of the
Honey Producer.

Seventy-five Cents per annum in Advance.

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Time.	1 in.	2 in.	3 in.	4 in.	1 col. page
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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 change, \$1.

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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 labels 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.

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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.

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THE CANADIAN BEE JOURNAL and
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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.

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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.

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 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 Leghorn, Benner's strain. Black
 Minorcas, Abbot Bros' strain from imported stock.

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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.

LEGHORNS, B. MINORCAS, B. LANGSHANS,

Eggs per Setting, \$3.00 per two settings. \$5.00.

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NO CIRCULAR.

Imported Indian Games !

1st prize winners at Toronto and Brampton, 1890. Eggs
 \$5 per setting. White Wyandottes, winners at Bramp-
 ton, 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
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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 were
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 So buy your eggs and stock from where the prize winners
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 \$4 per 26. Send for our Club circular..

**ACKERLY & CLARK,
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Partridge - Cochins !

My breeding yard e P. Cochins for the year 1891 had
 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-
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 will be sold at \$2.50 per 13 or \$4 per 26. Our club dis-
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Sec. Perfection Fancier's Club, Dunaville, Ont.

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-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 to 96.
 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, \$2.00
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 ONT.**

25 cents will pay for 6 MOS.
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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

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Journal devoted to collecting the latest Apicultural Discoveries and Inventions throughout the world, containing as it were the cream of Apiculture, valuable alike to amateur and yet not so that you want to keep posted you cannot afford to neglect it. SUBSCRIBE NOW. It is a 20-page monthly, only 25 cents per year. Stamps taken in one denomination.

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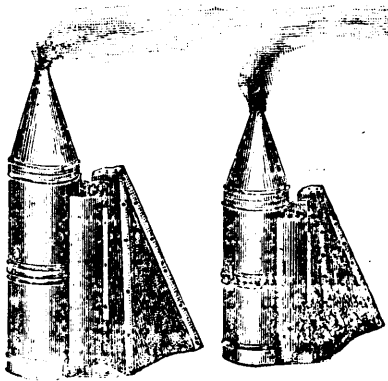
These discounts apply to everything in our pricelist, excepting foundation, honey tins, glass, scales, and wire nails. Up to Feb. 1st, the discount will be 6 per cent.; to March 1st 4 per cent.

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SMOKERS !

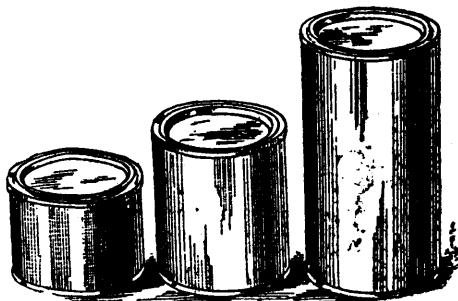
CUT IN PRICE



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."



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
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THE D. A. JONES CO.

BEETON, ONT.

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- Production of Comb Honey, by W. Z. Hutchinson. Paper..... 25
- Cook's Bee-Keepers' Guide in cloth... 1 50
- Foul Brood, its Management and Cure by D. A. Jones. price by mail..... 11
- A. B. C. in Carp Culture, by A. I. Root, in paper..... 50
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- Bee-Houses And How to Build Them 15
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O. J. PUTNAM, Leominster, Mass. has for sale several fine cockerels and pullets, B P Rocks, won 1st 2nd and 3rd on pullets, and 2nd on pen at Ayr Jan. 14 to 16 1890. Eggs \$2 per setting.

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W. COLE'S Black Minorcas. I have bred those birds for 5 years and they are as good as any in Canada, United States or England. 1889 pullets 94 94 94, 94, 96, 96, 96, cockerel 95, J Y Dicknell, Judge Eggs for hatching \$1.25 per 13. WM. COLE, Brampton

HOLY LAND QUEENS. Home and imported raised a specialty. Bees by the pound and frame queens by the dozen. MENTION THIS JOURNAL. GEO. D. RANDENBUSH 445 Chestnut St. Reading Pa.

TESTED ITALIAN QUEENS bred from selected mothers, principally of Doolittle stock. Prices as follows:—for those under 1 year \$2.50 each, shipped the 20th of April, or 2c. less each day until June 10th. Queens under 2 years old one-fifth less. G. A. DEADMAN Druggist & Apothecarist Brussels, Ontario.

SEND your address on a postal card for samples of Dadant's foundation and specimen pages of "The Hive and Honey-bee," revised by Dadant & Son, edition of '89. Dadant's foundation is kept for sale in Canada by E. L. Gould & Co., Brantford, Ontario. CHAS. DADANT & SON, Hamilton Hancock Co., Ill.

1891 Early Italians for Business. Read this. "The Queen I got from you can't be beat. I want to re-queen all my bees from your stock." J. D. Lower Mound, O. Order now and pay when your queens arrive. Each \$1.60 \$4.50. W. H. LAWS, Lavaca, Sebastian Co. Ark.

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BEES WAX FOR SALE—Crude and Refined. We have constantly in stock large quantities of Beeswax, and supply the prominent manufacturers of comb foundation throughout the country. We guarantee every pound of Beeswax purchased from us absolutely pure. Write for our prices, stating quantity wanted.

ECKERMANN & WILL,

Bleachers, refiners and importers of Beeswax, Syracuse, N.Y.

COMMERCIAL

Relations with the Beekeepers of Canada in the past have been encouraging. A

UNION

of those who have become our customers and those who will kindly give us a trial order this season will be appreciated. We make Single and Double Walled Hives, Sections, Feeders, Frames, Shipping Cases, Comb Foundation, etc., at the lowest prices. Send for new price list of 1891 and find out how you can get a Sample Chaff Hive for \$1.00. A Pelham foundation mill nearly new for \$10 cash or thirty pounds of nice Beeswax. Address all orders to to

W. A. CHRYSLER,

Box 450. Quatham, Ont.



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

VOL. VI, No. 24.

BEETON, ONT., MAR. 15, 1891

WHOLE No. 284

CANADIAN POULTRY JOURNAL

ISSUED 8TH AND 23RD OF EACH MONTH.

W. C. G. PETER, . . . EDITOR-IN-CHIEF.
F. H. MACPHERSON, . . . ASSOCIATE EDITOR.

GENERAL.

FOR THE CANADIAN BEE JOURNAL.

Does Comb Foundation Ever Contain Live Spores of Foul Brood?

IN MY paper, on foul brood among bees, read at the recent meeting of O. B. K. A., at St. Catharines, I could not, for the want of space, give the reasons in full for the opinion that the disease may be spread by the use of comb foundation, made from wax from infected hives. The degree of heat required to kill the spores of some other bacteria has been ascertained, but, as far as I can learn, the heat necessary to kill the spores of bacillus alive has never yet been made out. If we knew the heat required all we would have to do would be to make sure of heating the wax up to this point when all would be safe; hence the adoption of the resolution by the association, asking for the assistance of the authorities of the agricultural institutions at Ottawa and Guelph. From what is known to be required for killing the spores of other bacteria, and from a consideration of the process used in the manufacture of foundation, the statement so often made, that these processes are sufficient to destroy the germs of disease in infected wax, may well be doubted. If there is danger of spreading the disease in this way, as

I believe there is, it is not good economy to spend public money for the purpose of stamping it out, while we are unconsciously scattering the seeds of contagion by the use of infected comb foundation. That the question is a disputed one will appear from the following expressions of opinion, both for and against, by prominent beekeepers in Europe and America.

"Now, if combs from hives reeking with foul brood, are put into those (wax) extractors, and the wax extracted from same, we know that the temperature at which wax melts would not be high enough to destroy the germs of bacilli, and consequently the foundation made from infected wax must carry the germs with it, wherever it goes."—"Woodleigh," in *British Bee Journal*.

Mr. F. M. Curry, a member of the committee of the Irish Bee-keepers Association, in a letter to the *British Bee Journal*, says: "There is so much trouble about, from this foul brood disease, and its rapid spread—probably largely due to the use of bought foundation, a quantity of wax from diseased hives finding its way into the market."

In reply to a correspondent who makes enquires about this matter, the editor of the *British Bee Journal* says: "We should think that the long process of heating the crude wax undergoes, before it is transformed into foundation, is quite enough to remove the taint of disease it might have."

In the *American Bee Journal* Dr. S. S. Butler, an extensive bee-keeper in California, writes as follows: "Foul brood may be carried in foundation made of wax, from foul-broody hives. A friend of mine in this valley, with about 60 colonies found so many of them with foul brood

early in the spring, that he transferred them into new hives, and boiled the old ones. He made new frames, taking a great deal of pains not to let the bees get any of the honey, but made up the beeswax into foundation, and after they got well filled with brood, he found it worse than at first in every colony. He is satisfied that it was carried in the wax."

On this letter the editor makes the following comments: "There is not a possibility of foul brood being contracted by using foundation made from foul-broody combs. It is sheer nonsense, to say the least, to suppose that infection was eradicated, when your friend 'boiled' the old hives, if it would linger in the foundation after the several boiling processes necessary to transform the comb into a perfect sheet."

But even this vigorous reply does not silence Dr. Butler; he writes again in this way: "If we could heat to the same point, 212°, there would be none of the foul brood germs left in it, but it is almost impossible to do it. I render all mine under glass, in my honey tank, at about 150° or 160°, and could melt my wax and make foundation in summer time, never using fire heat, if I wanted to; so for one I do not want any foundation made from foul broody wax."

At a convention of bee-keepers, held in Michigan, Mr. D. A. Jones, the bee-king of Canada, said: "Wax rendered by the solar wax extractor may possibly contain foul brood germs, but the heat necessary in making foundation is great enough to destroy the germs of foul brood."

In a paper read by Dr. A. B. Mason, at the S. E. Michigan convention in 1884, when referring to the case of a bee-keeper in whose apiary foul brood had broken out in a new part of the country where there was no known cause for it, the Dr. said: "I asked him if he had ever bought and used foundation. He said he had. I then asked him if he had the disease in his apiary before or after getting the foundation. He said after."

The foregoing opinions, though sometimes stated quite positively, are to be taken only as what is believed to be the case, and not as statements of well ascertained facts. In considering the matter, the following queries may occur to the thoughtful student, and these queries I have attempted to answer by giving selections from the writings of the best scientific authorities.

The reader will bear in mind that there is the same kind of difference between what is termed "simple vegetative organisms," the "fully developed bacterium," the "adult organisms," the "finished organisms" and

their spores or seeds, that there is between the fully developed vegetable and the tiny seed from which it grew.

He will bear in mind, too, that "the death point of bacteria is the maximum temperature at which they can live, or the minimum temperature at which they cease to live."

Query 1.—What is the death point of the most resistant of the fully developed bacteria?

"The fully developed bacterium is demonstrably killed by a temperature of 140°."—*Tyndal*.

"It appears to be very generally held that the simple vegetative organisms are deprived of life at a temperature as high as 140°."—*Huxley*.

Query 2.—How does the death point of spores compare with that of the fully developed bacterium?

"By the excellent researches of Dallinger and Drysdale, it has been proved that germs, as compared with adult organisms, possess a power of resistance to heat in the proportion of 11 to 6."—*Tyndal*.

Query 3.—Is the death point of spores affected by their condition as to dryness or moisture? If so, how?

"It appears that in a dry state these germs are able to bear far greater extremes of heat and cold than in the moist condition. Pasteur found that the spores of fungi could be exposed, without destruction, to a temperature of 248° to 257° while the same spores when moist were killed by an exposure to 212°."—*Huxley*.

"Now as regards the death point of contagion we know that in air it may be much higher than in water, the self-same temperature being fatal in the latter, and sensibly harmless in the former."—*Tyndal*.

Query 4.—What are the necessary conditions for the germination of spores?

"Heat and moisture are the requisite conditions for the germination of spores."—*Trouessart*.

"Water is absolutely necessary for the life and growth of schizomycetes." (bacteria).—*Ward*.

Query 5.—Are spores of all bacteria equally resistant to the effects of heat?

"Some seeds (ordinary plant seeds) are killed by the briefest exposure to the boiling temperature, while others withstand it for hours. The germs of the air vary as much among themselves as the seeds of the botanist."—*Tyndal*.

"It is not very easy to say exactly what the limits of temperature are, as they appear to vary in part with the kinds of living matter, and in part with the conditions of moisture which obtain along with the temperature."—*Huxley*.

Query 6.—What is the explanation of the fact

as stated by Tyndal, that spores which resist the temperature of boiling water for several hours, may be killed by repeated boilings for a few minutes at a time?

"The explanation is that spores which resist the first and second boiling have time to begin germinating in the interval, and they then succumb at once, when the liquid is thus boiled."—*Ward*.

"The body of the germ may be so indurated by time and dryness as to resist powerfully the insinuation of water between its constituent molecules. Some are more indurated than others, and require a longer immersion to soften and germinate. For all known germs there exists a period of incubation, during which they prepare themselves for emergence, as the finished organisms which have proved so sensitive to heat. If, during this period, and well within it, the infusion be boiled for even the fraction of a minute, the softened germs which are thus approaching their phase of final development, will be destroyed. Repeating the process of heating every ten or twelve hours, before the least sensible change has occurred in the infusions, each successive heating will destroy the germs thus softened, until through a sufficient number of heatings, the last living germ will disappear."—*Tyndal*.

Query 7.—In causing the death of spores by the application of heat are there other conditions besides a high temperature and a saturated or moist condition of the germs?"

"Denser media are less fatal than thin ones."—*Ward*.

"It was noted that a long exposure to a lower temperature produced the same effect" (as a higher for a shorter time).—*Huxley*.

"There is very strong reason for believing that the influence of temperature on life is greatly modified, first, by the nature of the medium in which the organisms are placed; and secondly, by the length of time during which any given temperature is kept up."—*Huxley*.

"Dr. Roberts, of Manchester, further proves that that there are two factors in the induction of sterilization, the degree of heat on the one hand and the duration of its application on the other. For example, speaking roughly, an exposure of one hour and a half to a heat of 212° appeared to be equivalent to an exposure of fifteen minutes at 228°"—*Huxley*.

From the foregoing answers the following inferences may be drawn:

1. Since it is admitted that wax made from foul-broody combs, rendered in the solar wax extractor, may contain germs of foul brood, and

since to sheet wax it is melted in a water bath and kept at a temperature just above the congealing point, not being heated to more than say 160° in any part of the process, it is highly probable that such sheets may contain live spores of the microbe of foul brood.

2. Since we do not know the death point of the spores of bacillus alvie, our only safe course is to treat them as amongst the most resistant, requiring a temperature of 257° to destroy their vitality.

3. Since denser media are less fatal than thin ones, it follows that to kill spores in honey a higher temperature is required than in water.

4. Since it appears that to kill spores by the process of discontinuous boiling, it is necessary that they become saturated with the water, and since spores in wax in boiling water are not likely to become softened on account of their coating of wax, the only sure way of killing such spores is to subject them to a temperature of 257°, the same as if they were air germs.

5. Since the effect of a long duration of the application of heat is equivalent to a higher temperature for a shorter time, and since it may be difficult to apply a temperature of 257° to wax without injuring it, until definite information is obtained as to the death point of the spores of foul brood, arrangements should be made to keep all wax heated to at least 200° or over for some days, so as to be sure that all spores it might contain are cooked to death before the wax is worked up into foundation.

S. CORNELL.

Lindsay, 28th Feb., '91.

Science and practice do not always accord, and I am willing to believe that they do not in the present instance. I am not prepared to say that the heat ordinarily required for the boiling of honey or wax will kill the foul brood germs or spores, which may be in them, but I do say that in all my experience, and I have had a good deal, I have never had a case of its return, after submitting them to this heat. I have often taken foul brood honey and put it into a dish, suspending the dish in boiling water, but not allowing any water to get mixed with it. In this way I have rendered unfertile all germs of disease which were in it—at least there were none ever appeared afterward. I have also made similar tests with wax, with the same results. Wax melted in the sun, or at a lower temperature than the boiling point of water (212°) may, per-

haps, not be free from the fertile spores. I should not care to risk it. My beliefs in this direction have suffered no change since I put myself on record at the Michigan convention some years ago, as stated by Mr. Corneil.

In the case cited by Dr. Butler, that California bee-keepers *may* have been entirely mistaken, or he may have been correct. If the wax was subjected to no more heat than it would receive through being under the Solar wax extractor, the germs *might* not have been destroyed, and the disease continued in that way, but it does not appear to me, from the statement as given us, even though they were transferred to clean hives, that all the honey they took with them was consumed, in which case, the foundation was probably not at all in fault. Any one who has the proper arrangements (by steam) for sheeting wax, can heat the wax to a point, which will, in my estimation, render sterile the foul brood spores. If allowing it to stand for a time, subjected to this continuous high temperature, will render the wax any less liable to contain the fertile spores, by all means let us do it. We can carry out the plan here at Beeton, though it will render the work of melting rather slow and tedious. It will not, in my estimation, hurt the wax, rather improving it, if anything. We have frequently allowed wax to stand for hours in this way, allowing it to cool slowly. All the pollen and other impurities will gradually settle in the bottom, leaving the wax very much improved in color. It also seems to anneal it, (if I may be allowed the use of the word here) making it tough, yet pliable, and easily worked by the bees.

Mr. Corneil's article shows much thought and research, and as a document of reference is valuable.—D. A. J.

FOR THE CANADIAN BEE JOURNAL.

To Prevent Increase In Producing Comb Honey.

LAWSON'S AUTOMATIC EXTRACTOR.

BELIEVE it is generally admitted by producers of comb honey, that no system of management has yet been devised that the apiarist can, at the beginning of the honey flow in June, place the section supers on his

hives and have the bees enter the sections readily, and continue storing honey throughout the season without showing the least symptoms of swarming. Now, I don't claim my plan to be infallible, but I do claim it will bring swarming to a minimum. I will give you a short description of my system of management and how it come to be brought about.

In the seasons of 1886 I selected out fifty strong colonies to run for section honey, and I ran them on the invertable plan. I used the Langstroth hive and tacked 5/16 inch strips across the ends of frames to hold the frames in place, and turned the hives bottom side up with ½ inch blocks under the front corners, and set a case of sections on each hive. This was about the first of June. Every second day I lifted off the sections and turned the hives bottom side up. About the 8th or 10th of July they commenced to swarm and they kept it up until I think all had swarmed. At the same time I worked two colonies on a different plan altogether. When I carried them from the cellar in the spring I placed the two colonies close together, but facing opposite directions, and every day from the time of setting them out in the spring, until after swarming season, I exchanged places of the two hives. To my surprise they went right along about their business, and produced more comb honey than any two colonies in my apiary that season. As this lifting hives was very heavy work and could not be tolerated, I invented a revolving stand which was constructed as follows :

A REVOLVING STAND.

Set a post about about 10 inches in diameter securely in the ground, cut it off square 4 or 5 inches above the ground. Then nail a piece of 2 inch plank on the post, one foot square, and countersink the rail heads. Then take a jack plane and a spirit level and get down and work it perfectly level both ways. Now take two pieces of 2 inch plank, 6 feet long by 1 foot wide, and nail them together in the centre at right angles, then set them on the post perfectly true, and bore a ½ inch hole through the cross planks and into the post, and put in a bolt. Nail some thin strips of board on the ends of planks to reach nearly to the ground. Lift off the cross arms and grasse the top of post; replace it and your stand is ready for 4 colonies of bees.

In the spring of 1887 I placed 8 colonies on two stands, as above described, and when the bees got flying briskly I gave the stands one-quarter turn, and continued it at short intervals throughout the day. After that I gave them a quarter turn every morning. I ran them for

section honey, and these eight colonies were second to none in the apiary in honey gathering, and not a swarm issued that season, while others were swarming all round them in the same yard. The next season, 1888, I ran two colonies of Black bees and two of Italians, on one stand, and four colonies of Italians on the other. All went splendidly up to the 18th of July. I was preparing a colony to raise queen cells. Through the loss of their queen and brood the bees were out flying almost like a swarm, when one of the black colonies on the revolving stands came rushing out and joined with them. This was about 3.30 p. m. I placed the queen in the hive that I was preparing to raise cells from, but nearly all the bees went back to the hive on the revolving stand. I opened this hive and there was not the least vestige of a queen cell in it. I then took their brood from them and let them build a batch of cells, and they built 16 as fine cells as I ever saw. They were given $\frac{1}{2}$ turn every day while building them. I allowed one of the cells to hatch, and after the queen was 5 days old I did not turn the stand for 4 days, but after that, went on as usual and the combs were soon filled with brood. I ran them the same in 1889 and they did remarkably well, and not a swarm issued.

During the past season I ran a car load of bees to an out apiary, and as the eight colonies on those two stands were very strong I moved them away on the 20th June. There were several colonies then in the apiary making preparations to swarm, but not one on the revolving stands.

The reason that I do not run more on this plan is that I have given up the production of comb honey. There is something fussy about it that I do not like. I would like to see some comb honey producers try it, and if it is any advantage to them they are welcome to it.

LAWSON'S AUTOMATIC EXTRACTOR.

Now, while I am writing I would like to say a few words about the new Lawson Automatic Honey Extractor. I have not used it in my apiary as you were under the impression that I had. Mr. Lawson extracted his last season's crop with one similar to it, but it was not at that time brought to its present state of perfection. I was at Mr. Lawson's apiary several times last summer, and tried the extractor with heavy frames in it, and if you were blind-folded you could not tell whether there were combs in it or not. As the combs revolve from the centre on a pivot, you scarcely discern the power required to turn it. This new machine is going to do the work. The principle is right

and there is no mistake about it. It's the extractor the bee-keepers of America have been looking for, for the last twenty years. I hardly expect there will be many put on the market this season. Mr. Lawson has an expert pattern maker now at work on the Langstroth size frame. The patterns are all got up in brass, and all the cog work cut by machinery to secure perfect accuracy, and the working parts will all be of the finest grade of malleable castings.

C. W. POST.

Murray, March 4, '91.

The interchange of hives to prevent or retard swarming is not new, but the novel plan adopted by Mr. Post is certainly fresh to me, and it appears to work perfectly according to that gentleman's experience. True, it does seem a little fussy, but if it is going to do away with that great bug-bear, in the production of comb honey—swarming—why not adopt it. I am sure it is very little trouble to go through the apiary every day and give each of those "revolving stands" a quarter turn. Out apiaries could be run on this plan with but little expense. Hire a good, smart boy in the neighborhood of the apiary, and let him do the necessary turning each day. Then the "boss" apiarist needn't call excepting as the hives required other manipulation.

I am glad to have Mr. Post's explanation with regard to the Lawson Automatic Extractor. I was under the impression I had heard Mr. McEvoy say, on the road home from the St. Catharines meeting, that Mr. P. had either worked or seen it worked the past summer. Now, if that extractor can only be kept down to a price that will be within the reach of all bee-keepers who follow the pursuit in a moderate degree, I fancy we shall have solved at least one of the problems recorded by Mr. Ernest Root in his paper on the "Demand of Apicultural inventions."

FOR THE CANADIAN BEE JOURNAL.

Sectional Hives, Etc.

(REPLY TO MR. HEDDON).

ON PAGE 418 Mr. Heddon admits he was laboring under a misapprehension, as I have not made his close fitting frames for five years, but instead the suspended Langstroth, which I have found to be greatly preferable. Neither have I used, nor do I recommend, his divisional brood chamber since 1886,

as shortly after I devised the present hive I am using, having found, after years of experimenting, what is regarded as a perfect hive, I am obliged, however, to admit that the solicited testimonial which I gave Mr. Heddon, in Oct., 1886, was greatly strained, as there were many things about his hive I did not like, and within a year made public. Had these objectionable things been stated, that testimonial, on which Mr. Heddon dotes so much, would have been shorn of any value to him. So much for my efforts to befriend him. It was like Father Langstroth's testimonial, and a lot of others, from our best men, who, directly after lapsed into ominous silence! And I think that I should have kept silence also, had Mr. Heddon given me the credit of my inventions that he so freely accords me in his last article. I did not then, and do not now, ask for more credit than he has at last given. Thus he might have saved all the hard feelings and acrimony that has since resulted. Now, that the cause of our ill-will is removed, I am ready to make friends with him at any time.

There is left little for me to reply to. I am pleased to learn that Mr. Heddon does not "design to lay claim to my new system of management," as his first article was not clear in regard to what he did claim. His misapprehension was in supposing I was still using and recommending his hive.

As to the matter of a re-issue of his patent, I know only what was published at the time. My suspicions were those of many others, that his patent did not cover the claims made after the patent was issued.

As to the author of the contraction system, I know nothing about the controversy referred to or where it may be found. Mr. Doolittle's first published ideas on the subject were given in A. B. J., for 1881, page 114. He does not there use the word "contraction," but the principle is stated, as I believe, for the first time in print, and so to Mr. Doolittle belongs the credit, as I have given it. Mr. Oatman, Mr. Heddon and others, may have practiced the system, but the credit belongs to the man who first makes public new principles. Unless Mr. Heddon, (who, in a reply to Mr. Doolittle's article referred to, recommends 8 L. frames, while Mr. D. recommends only 7, in producing comb honey) can go back of this article of Mr. Doolittle's, I shall refuse to believe that Mr. Heddon antedates him as alleged. Give us the dates, and where published, Mr. Heddon.

Yes, it is a fact that at first it was thought to get the wood-zinc queen-excluder patented and shortly after I sent the device to Mr. Doolittle,

and, as I remember, he advised against it. Some months afterwards I gave it to the public, in Gleanings, as stated. In the subsequent application for a patent an amendment was sent in claiming the wood-zinc combination, which was allowed with the patent. But the amendment was cancelled. It seems that I was imitating Mr. Heddon, who had obtained an invalid patent upon his slatted break-joint honey board that had reverted to the public through the expiration of the two years limit. My object in sending in the amendment was to prove my claims to the invention, which was, as I understood the matter, disputed by Mr. Heddon, and a few others. My circulars continued to show my purpose that the invention should be free to all bee-keepers to make and use, the same as my patented Nonpariel section super.

In regard to the three years secret use of his new hive, before getting it patented, if I have made mistakes in the dates published, Mr. Heddon should correct them, both in his book and wherever they have since occurred, as a man who writes for the press cannot afford to have his veracity a matter of question. I regret he did not correct these mistakes of the printers long ago.

My new system of management is a method of controlling swarms so as to keep each colony of bees together and preventing increase. It may be applied to the management of most hives now in use, as stated in my new book, and it is well that Mr. Heddon did not lay claim to it. As regards the use of the queen excluder in connection therewith the new system is original with me, but Brother Heddon infers that I have little to claim, "that the least a man has, the more willing to divide up." Now, all this depends upon the man. Some, unfortunately, can see only personal interest and personal rights, failing entirely to recognize that Christian spirit that would do good to others, though no consideration be given in return. My purpose, in writing for our bee periodicals, like that of many others, I feel sure, is to do what I may be able to make our noble pursuit a profitable, as well as an enjoyable one, and I have not yet lost faith that I shall thereby gain more treasure, of an enduring kind than to labor to fill my pockets with sordid gain. If it is this spirit, as I think, that Mr. Heddon is making light of, I can stand it.

DR. G. L. TINKER.

New Philadelphia, O.

* * If you require catalogues, circulars, note heads, envelopes, or anything in the line of job printing give us an opportunity of estimating.

Unprotected Colonies—Buying Saws—Driving Nails.

MARVELL Lepper says : Do up your unfinished section in tissue paper and sell them. Put them on the breakfast table and let the youngsters feed upon them—I say.

[What if you haven't got any youngsters to feed on them, like me?—Ed.]

Mr. Holterman bewails the prevalence of unprotected colonies in winter, but he fails to show the least cause for his fears. It is true Mr. Holterman tells us of a railway trip he took some time ago and of his seeing "more than one instance of hives standing unprotected on their summer stands." No doubt he did. But hives are not colonies. It is quite likely during a railway trip at any season of the year one might see hives on their summer stands. If Mr. H. had dropped off at the nearest station to where he saw those hives in the winter and tramped back to where they stood he would probably have found them tenantless, and if he had "inquired within he would likely have been told they stood there tenantless for a year or two. I know of several such instances. Mr. Holterman's evidence is defective—very.

A peripatetic gentleman, known as Rambler, appears to have a roving commission from *Gleanings* to sewer the country and pry into the cellars and backyards of bee-keepers. He is admirably fitted for the business he is engaged in. He bears about with him a suave manner, a sharp led pencil and kodack—sketches and shoots as he goes. He is a good cartoonist and makes very funny pictures. Let me suggest a subject for his ready pencil. A stranger drops into a bee-keeper's dwelling just before dinner, announces himself a "brother chip." The good man of the house receives him kindly, takes him out into the bee yard, explains the excellencies of his appliances and shows him around the premises. Returning to the front of the bee hives the visitor brings his kodack to the "ready;" "fires, and retires" to the house. Meantime the good lady has pulled her snow white table cloth from the bottom drawer of her best bureau, spread it and laid the table with the best dishes and food the house affords, and with genuine American hospitality the stranger is fed sumptuously, after which he rises, tucks his umbrella under his arm, picks up his 6x9 camera case and strides away. Tableau—The good wife standing at the window with blinds half drawn shaking her fist at the now vanishing intruder.

Saws have been a long time in use. There are several in the British museum that were

made 2000 years before the Christian era. They have been used in nearly every country from a very early age. Long as they have been employed, there are but few people qualified to select a good one and use it properly when chosen. Dr. Miller has not yet learned how to judge a saw, for he tells us he "paid a dollar for one that is not worth a dime." A poor mower rarely gets a good scythe. For the doctor's information I will tell him a few important points by which to judge a saw. See that its ring is bell-like and clear when held by the handle and struck on the point. If it trembles or jars in the handle when so held and struck, it is not well hung and should be discarded. The color of the blade should be dark and carry a good polish. These, with the teeth properly spaced and pitched, and the gullet and gauge what they should be for the work the saw is intended to be used in, are some of the important points to be followed in judging a good saw. The man who knows no more about a saw than to pay a dollar for one that is not worth a dime will soon spoil the best one Disston ever made. I don't like the doctor's nail box. It looks like the back-woods man's knife box of the long ago. If a nail needs to be straightened a little in driving do it with the claws of the hammer" says this Solon in carpentry. Get away will you; we are not babies. It is only a botch who bends nails. Place your nails directly over the course they are intended to travel, strike them with a good hammer square on their heads and there need be no clawing.

No. Two.

FOR THE CANADIAN BEE JOURNAL.

Foundation In Full Sheets vs. Starters

ISEE, in an editorial, the CANADIAN BEE JOURNAL invites discussion of the above subject. I did not think any journal would refuse to receive light upon the subject and the individual who thinks the supply dealer is so very anxious to keep up the demand for comb foundation can hardly know what he is talking about, his aim and uncharitable proclivities are stronger than his information upon this particular line of business. I am to-day, in no way connected with a supply business, and bee-keeping is largely the source of my livelihood. For quite a few years I was connected with a supply business, and should be able to speak from the position of a supply dealer and view the matter as he does. A supply dealer, of course, likes to sell comb foundation as long as he can make the article and secure the wax. Almost all supply dealers doing an extensive business find it a very difficult matter to get

good wax, and especially do they find it difficult when the season is drawing to a close. This shows it is a difficult matter to meet the demand, and unless the profits are very large he must feel as if it would be a relief to have the demand lessened. I think I can prove, to the satisfaction of any unprejudiced man, that the profit is not great with comb foundation. You may be a man of very fair standing, financially, and you walk into the office of a supply dealer and say: "I am a little pressed for money just now. Can I get a hundred dollars worth of supplies? I may be able to pay you in three months, will agree to do so in six months." Of course supplies are supposed to be cash, yet in exceptional cases the dealer may consider it, and he will probably say: "Well, Mr. J——, what would you like to get?" Now, if it is all hives, or wood work, or even all tin goods, he may consent, but if it is all comb foundation, he will generally not accept. We must come to this conclusion, the profits are greater on the former articles, and next, the profit on comb foundation is not large enough for him to do anything but a strictly cash business in it, unless other things are taken with it, to raise the average profit on all. He can dispose of all the comb foundation he can lay his hands on, for cash. Again, you will find a notice in the journals, will exchange supplies for honey at such and such a price, we cannot exchange for comb foundation. This goes to prove what I say. What do I practice as a honey producer? Well, I would gladly do away with purchasing so much comb foundation if I could. I have read carefully much of what has been written on comb building and on starters, and I believe no system is sure and practical by which we can secure worker comb without fail, on starters. I believe, as the Hon. R. L. Taylor stated at Detroit last month, that combs are something we intend to have for many years and for that reason it will be best to have them of the very best. I believe the way to do this is to get them built on full sheets of foundation. I have not, so far, succeeded in securing such combs in any other practical way, although I have tried it. I say practical, for there is one way, viz., giving starters to nuclei. They will, if not allowed to become crowded, build out worker combs very nicely. But that is the kind of a colony I care to have very little to do with, and I think no one will advocate that system as profitable, especially if the apiarist's hive is worth anything. As to section foundation, it is very nice to have on the table a section of best honey stored in entirely na-

tural comb. But when we consider the gain, in even appearance, well filled sections, time, etc., we cannot find our comb honey raisers favoring even starters, as a body, and this is the class upon which the supply dealer is supposed to impose. I think that spirit is most undesirable, and injures no one more than the one who allows it grow on himself, by cultivation. The consumer of honey thinks the bee-keeper is gulping him in fine shape by charging him from 10c to 25c per lb. for what costs the bee-keeper nothing, the bees just gather it. The bee-keeper thinks the supply dealer is a first class *dead beat*. The lumber in that hive is not more than 15 feet and worth, say 15c. Of course he can get lumber at \$6.00 a thousand. Allow, say 5c, for cutting out the hive, makes it worth 20c. Then the supply dealer is gulled by everybody, and if he does not run a journal, the journal is getting rich fast because he is charged too much for advertising. Of course the bee-keeper, too, is gulled by the journal. The supply dealer, too, feels he can go no where, open his mouth no where, advocate nothing, without some one grinning in his sleeve, saying, go it Jones, or Macpherson, or Root, or Newman, advertise that thing. Of course we know you are after selling something. How about the conductor of the journal, he thinks he is giving a great deal for the money and often does not know how to do it and make both ends meet, he is receiving articles the writer thinks very important, but the editor thinks he has no place for them, or there are others still more important, and as every one has an opinion of his own, if he has not I pity him, the journal runs in certain grooves, more or less. Of course I do not say but there may be injustices done by the editor, the supply dealer, the honey producer, and the consumer of honey. Yet this condemnation on broad lines is something we should avoid. It is a direction we are all liable to drift into too readily, and in the case of forcing sales of foundation, I think it has been very frequently done.

R. F. HOLTERMANN.

Romney, Feb. 17th, 1891.

FROM ST. HELLENS.

I commenced last spring with thirty-four hives of bees and increased to seventy-eight. I got one thousand three hundred pounds of honey. The honey season was very short, did not extract very late, so did not feed my bees very much for the winter. My bees went into winter quarters with plenty of stores, but a good many of them were few of bees. They got very little honey all fall, which hindered brood raising. The winter has been very fine all through for wintering. I have part of bees outside and part inside.

St. Helens, Feb. 13, '91.

C. SMITH.

FOR THE CANADIAN BEE JOURNAL.

The Coming Bee.

SO MUCH has been said, *pro* and *con* about the "Coming Bee," to be called *Apis Americana*, the qualities it is to possess, etc., that many will be taken by surprise to learn that a bee has been found that excels anything ever predicted, in the coming American wonder.

The name of this bee is the Punic bee—*Apis Niger*; tis shiny black in color, and is smaller than our native black bees, or Italians. There are no brands or marks of any kind on it, young bees are the color of green ebony, shading off to true raw ebony when beginning to field, and finishing off to polished ebony when old and all hairs are worn off them.

Their qualities are: 1st. They are the tamest bees known. The only time when it is possible to get them to sting, being when they have the swarming fever on.

2nd. In crossing with other races, this quality is very marked; not even Cyprian blood being able to make them bad tempered.

3rd. They are the hardest bees known. They can fly from and to their hives with safety, with snow on the ground and 2 degrees of frost.

4th. They do not fly into the snow like other bees.

5th. They begin work before sunrise and have the ground picked over before other kinds are on the move.

6th. If the day is rather dull, or cool, they will be working in full blast tho' no other kinds of bees will be flying.

7th. The queens are very prolific.

8th. In a fair season the smallest nuclei will build up without feeding into a grand stock for winter, so much is this "building up" quality present in them that a good strong stock can be divided into 20 nuclei the end of May, and each will build in a good season without feeding, into a 10 frame stock, well stored for winter yield one or two 20 lb. supers of honey from the heather.

9. They beat every other kind in their working energies.

10. They live longer than any others.

11. They fill and seal sections fuller, and cap them whiter than any other bees.

12. For extracted honey they have no equal.

13. They can eat the hardest and driest sugar; in fact, they will carry away the hardest and driest sugar loaf, (when no honey is to be got), put under a shed and kept as dry as possible.

14. Although they search out sweets and car-

ry them off anywhere, they are *not inclined to rob other hives*—"honesty" being with them a ruling guide or principle.

15. They swarm earlier than any others.

16. They fill all cracks or chinks with an enormous quantity of propolis, and if natural supplies fail, nothing sticky comes amiss, such as birdlime, coaltar, etc. Some may deny this as being a desirable quality, but with it they keep their combs clean, and they thus make anything do for hives, even baskets.

16. They cluster well on their combs, spread evenly over them, and shake off readily.

To sum up, we have a bee, docile, hard working, prolific, non-robbing, and best for comb honey. They have many other good points, that are more in favor of the queen breeder; horticulturist, etc., than the honey producer; this being the party to appreciate the bee that does not sting, and will build up from 1 to 20, and possibly yield 1000 lbs of surplus honey.

I have reared and sent out very many virgin queens the past summer, and so well are the parties being satisfied with them, that I am fairly besieged with requests for more. One well known party offers me £1 each, for half a dozen; but I can't let him have any till next spring. Others are sending in orders for next season to have them in time to be early. All these being from parties who have tried them, so there must be something good in them.

They also have the following characteristics; If a pure blooded queen mates with a drone of any other race, her bees are a blend of the two races; and though better than the race mated to, are not so good as pure. This seems an invariable rule, as in no instance have I had them as good as pure.

If a pure Punic drone mates with a queen of any other race; the resulting bees almost equal pure Punic for honey gathering, and in other respects the cross is very marked—Carnolians, for instance, using propolis as much as pure Punic, so that, taking them all round, I fail to see how mixing any of the blood of the present races will be any advantage. The Punic will improve them, but they themselves won't. So that we must be in for pure Punic alone, if it is desired to have the best possible.

I have never seen their equal in building comb, which is nearly always worker, as white as snow. Their brood is always compact and sealed in such a manner that I could easily pick out a frame of Punic brood from among a thousand.

In "building up" all we have to do is to see that they have plenty of stores, if not, then feed them as rapidly as possible and let them alone,

they will breed away like mad, and work hard, too, in picking up more.

No stimulating, slow feeding, brood spreading, etc., all they require is plenty of room, and sure enough they will fill it if left alone.

Talking of "feeding," I have not had to feed an established stock yet, other bees may have dry combs, but they won't. I often, in the fall, feed nuclei to work them up into stocks for winter, and again may give them a feed in the spring.

All round, I have found them a wonderful bee, and yet for a long time I was prejudiced against them. They were black for one thing, and I was sure they would never suit our winners; and so I was indifferent whether they lived or not; until their wonderful building up qualities struck me and made them more interesting, especially when the winter proved them the hardiest lot of bees I had. If I had had less prejudice I should have gone in for them largely the year following, 1887; but instead of this I Cyprianized nearly my whole apiary. I have only one stock of Cyprians now. The reason I have cleared out, is because they are no good, as honey gatherers. I have tried Palestines, Syrians,—which are the best yellow race—Italians, Cyprians and Carnolians, with the result that I find that the only bee which excels our own native blacks are the Punic. Carnolians are a good race and stood first on the list.

I have been "much asked" for Punic queens, imported and pure mated; and have not been able to supply any, tho' I have reared and distributed several hundred virgin ones. I have tried for years to get more imported ones, without succeeding until the past summer, when I managed to get an importation, at a cost which I dare not mention for fear of being regarded as a crank lunatic. But for all that I am going in for more, and hope to get 50 queens at least, in February, or early in March.

The difficulties to contend with may be guessed at a little, when I say that I have to make and prepare travelling hives here, and then get them to their native land in Africa, on the borders of the great Sahara desert. They have to be carried to and from the coast, either on the heads of negro natives or the backs of camels. After the middle of March, it is too hot to transport them to the coast with safety. Their natural swarming months are December, January and February, so I hope to get only young queens. All the arrangements will be carried out by the party who got me the lot this summer, but whose knowledge of bees is rather limited. He knows a queen when he sees one, but for all that I shall not be surprised to find some queenless. But as he is to buy second swarms and old stocks that have swarmed

only and turn the bees into boxes, ready prepared for the journey. I don't expect any mistakes as he knows the country and the natives, and how to deal with them which is *everything*, almost. What they will cost me is all guess work, but I shall have it to pay, no matter what it is, and though I want most of the queens for my own use, the undertaking is also with a view to carry on the importation through my friend in future. Should anyone wish for a queen, I would undertake to deliver one free and safe (guaranteeing introduction as well) anywhere on the North American continent, if spoken for before March 1st, for \$40. They certainly won't be less than this, perhaps very much more; but as I say, I am on with the experiment to see what they will cost me to import. Every dollar I can "unload" will be so much less expense to bear. Parties who want to write me had better address me in care of John Hewitt, Esq., Sheffield, Eng.

In the C. B. J. for March 15th, page 321, I see it is proposed to ask the U. S. government for a grant towards getting bees from Africa, India, etc. It has been satisfactorily established, which all Americans ought to know, that the genius *Apis Mellifica*, does not exist neither in India or anywhere in the east, while the native races, such as *apis dorseta*, *apis judica*, *apis florea* etc., are either useless as honey gatherers, or untameable. European bees have been imported by the government of India and thrive wonderfully, and contrasted with *apis dorseta*, as honey gatherers, the latter are "not in it." I am fully convinced that the very best bees will be found in Africa, and whether it will be the Punic, or some other race near the great central lakes, remains to be proved. Anyhow, *here*, we are getting bees from Africa and they will be to be had in the future if they are willing to pay the price. But considering how readily they can be propagated, they would pay well, even if imported breeding queens cost \$100 each, and possibly this is the sum they will cost. It is quite a regular thing for a first swarm to leave 200 queen cells behind, while 600 is really nothing to be surprised at. If a frame filled with drone foundation, or a drone comb cut down to midrib, is put in a stock about preparing to swarm, every drone cell will be worked out into a queen cell, that is vertically, but hexagonally, but when sealed every bee-keeper would say it was drone brood that was sealed over. I think it is quite possible to get 2000 cells sealed to work in this manner, but can't say, not having tried to get them, as it was impossible to get nuclei for what I did get. I have not put this down as a point in their favour, as it is not one to count in honey production, still it is a good point, as it makes it possible to have all the queens he wants from his best stock for all the others.

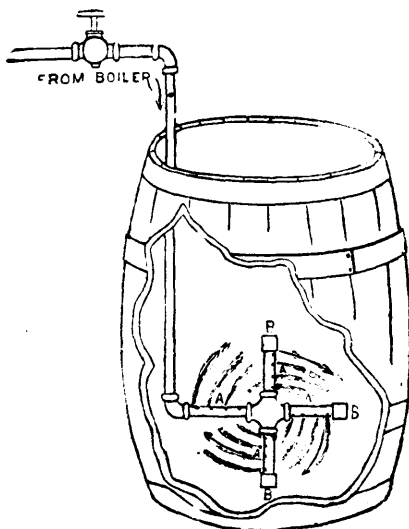
A HALLAMSHIRE BEE-KEEPER.

CAPPINGS.

CUT FROM A VARIETY OF COMBS.

Rendering Comb Into Wax By Steam.

It was the intention to illustrate the item in last issue, on page 443, with a cut showing the plan whereby Mr. F. A. Salisbury renders old combs and refuse into wax. The cut did not



arrive in time to be of service, and so is inserted here. For the description referred to, see the article on the page above mentioned.

DAMPENING SECTIONS BEFORE BENDING.

"Some time ago I saw the statement in the BEE JOURNAL that one-piece sections put together with a press were much stronger than if put up by hand. I obtained a press and found the statement correct; and they can be put up so much faster, too. I have a device of my own to dampen the grooves before bending the sections, and it is superior to anything I have seen or read about, yet if anyone has a better way I would be pleased to hear it. I take a board as wide as the section is long, when in the flat, raise one end of the board so as to incline it to about 25 degrees, nail a cleat on one edge for the sections to rest against, and at the lower end of the board drive two nails, for the edge of the first section to rest against; then lay the board full of sections, groove-side up, take a rag or sponge full of water and squeeze it over the grooves at the upper end of the board, and wet them all at once, then shove them into a pile with one motion, and they are ready to bend!—A. B. J.

GOOD ADVICE NOT TO BE DESPISED.

Never attempt to winter a lot of weak colonies. Six strong stocks will do far more work

than a dozen weak ones; therefore, when stocks cover less than five frames in September, join two together before packing up for the winter.—*Record (Eng).*

PROTECTION FROM STINGS.

The papers on bee-keeping, which are being published in the *Record (Eng.)*, are good. A paragraph under the above caption says:

"We cannot entirely agree with the oft-repeated assertion that 'bees will not volunteer on attack,' nor sting 'except in self defence.' Neither is it quite correct to say that 'after a little practice and experience no protection is required;' indeed it will usually be found that in apiaries of any extent, where the bees are 'natives,' and possessing the 'grit' and the healthy vigor requisite to make good returns possible, there is not that complete immunity from the risk of an occasional sting which some would have us believe. As a matter of fact, in all our acquaintance with successful bee-men, we never yet found one who hadn't a veil somewhere in the house, and who didn't wear it at one time or another. Personally, we almost invariably have our veil on when working among bees, not always pulled down over the face, but ready on the hat for instant use in an emergency. It lessens the risk to have it so, and a sting in the eye is at no time agreeable."

In commenting on the report of a correspondent in a late issue of the same Journal, the editor says:

"Some persons are so constituted as to soon become perfectly careless about bee-stings, and when this happy condition is reached the poison affects them in a very slight degree. We have known a horny-handed old farm laborer positively roar with laughter at receiving a dozen or two stings. 'My!' said he, 'but they do stang!' and it was to him quite a good joke; but only few persons can treat the infliction of pain in this fashion. Just by way of emphasizing the remarks on 'Protection from Stings,' referred to on page 12—and we wrote them in full view of such facts as are given above by our correspondents—we say again that our most successful honey producers in this country wear a veil 'at one time or another.' Not only is this so, but Captain Hetherington, of America, probably the most extensive kee-keeper in the world—owning five thousand colonies of bees—not only wears a veil himself when working among his bees, but positively declines to allow any visitor, no matter what his experience may be, to go among the bees at all without first donning a veil. Persons who decry the use of a veil as unnecessary in bee-work do a deal of harm, without intending it, to the cause of bee-keeping. We know this to be a fact, and in view of this knowledge we emphatically repeat the caution on page 12 which has been referred to."

PRATT'S PERFECTION SHIPPING CAGE.

C. W. Costellon, describes the above

cage, which he makes after instructions obtained from Mr. Pratt, in the *Ape* :

"The cage is made as follows: sizes $\frac{3}{4}$ x 1 x $\frac{1}{4}$ inches; three 1-inch holes bored from one side nearly through. A $\frac{3}{8}$ hole bored from one end connecting all the inch holes; this hole is to put the bees in by, also for a passage way from one chamber to the other and to give them access to the candy. This $\frac{3}{8}$ hole is covered by a small tin slide on the end of cage. A small saw kerf is made in the corner of this end opening into the chamber for ventilation purposes. So far as I know, this idea was original with me; if it was not I shall not loose any sleep on account of it. The inch hole at the opposite end from the tin slide is filled with good candy; a piece of wire cloth is tacked over the top, covering all the holes about $\frac{3}{8}$ inch of the candy; this is left for introducing purposes, and, by the way, this idea, I think, belongs to our friend Mr. Alley. A thin piece of wood, having $\frac{3}{8}$ hole opening into the hole nearest the tin slide, is fastened with wire nails over the wire cloth covering the cage. Thus prepared, it is ready for the mails, without any wrapping, tying or other preparation."

SEASONABLE HINTS.

Snow around the hives is no detriment. It is porous, and enough air can penetrate it for ventilation in winter. When it forms ice at the entrance, then it must be cleaned away. An examination during and after a thaw, is very necessary.

* Do not be alarmed if you find a few dead bees at the entrance of your hives. A few of them will naturally die of old age, and to have the survivors carry them out when the temperature will permit, is an indication of vigor.

The wise bee-keeper will now lay his plans for next season's work; provide his hives with surplus boxes, frames, and, above all, inform himself as to the operations of successful bee-keeping. To do this, he should take at least one bee paper, for in no other way can one so well inform himself as by the records of those who are making bee culture a success. It will enable the expert to keep up with the times, and the beginner to acquaint himself with not only the necessary but the best fixtures, in order to begin intelligently, and to continue in the right direction.—WALTER S. POWDER, in the *Indiana Farmer*.

ANOTHER WAY TO DAMPEN SECTIONS.

Lay a bale of 500 sections on the floor, and remove the cleats covering the grooves. Now take a teapot filled with hot water, and pour a small stream of water into each groove, then turn them over and repeat the operation. By this method I can dampen 500 sections in 2 or 3 minutes.—A. B. J.

MORE PROTECTION NEEDED.

Mr. D. A. Jones—Dear sir,—I have three hives I bought in Sept., 1890. They were strong and healthy when I put them away in Nov. The hives are like your own make. In packing, I put about two inches of sawdust over two cotton sheets, which I laid on top of the racks,

and about two inches down the backend behind the division board. I then put them in a closed shed and packed them all around with pea straw. I raised the back end of the hive about one inch above the front. The bees, I think, are not right somehow, the entrance fills with ice and dead bees. I have had to dig it out four or five times already, and when I get a hole through big enough, the bees will come out in spite of me and drop in the snow. I gave them nine racks about half full of honey when I put them away.

1. Can you tell me if they are not right, if not, what is wrong?

2. Do you think they have enough honey?

I ask these questions as I am only a young beginner in the business and have not seen anything in the C. B. J. about it or in the bee book I have.

Yours,

A. A. BELL.

Oro Station; Jan. 16, '91.

Of course the bees will run out whenever you make a noise at the entrance to disturb them, and if the hive was sealed up with ice so tightly that no air could get in, they become excited and the agitation would cause them to run out more than they otherwise would do. When ice forms inside the hive it shows that it is too cold. They should be better protected. Two inches is not sufficient for thawing ice out of the entrance. Instead of trying to punch the ice out it is better to do it with a warm iron. You should put more protection around your hives. Six inches or even a foot of chaff would not injure them. After you have them packed, if you bank snow well around your entrance so that it will not clod up from the outside, and thus keeping your hives sufficiently warm, no ice will form inside. No doubt they have plenty of honey but they will be as likely to die if ice forms inside of the hive and remains there long, as they would be if they had no food. Be sure they are well packed on top with something that will absorb the moisture. If there is yet ice in your hive, take bricks, put them in your stove oven and heat them there until they are thoroughly dry and hot. By placing them on top of the cloth over the cluster, it will cause a current of air and absorb the surplus moisture very rapidly. Take special pains to rid your hives of moisture and ice, and we trust your bees will then be all right.

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.

Planting for Shade.

QUERY No. 189.—What is the best kind of shade for a young beginner to plant, to protect an apiary from the summer's sun?—K. J. T.

S. CORNELL, LINDSAY, ONT.—None at all.

DR. C. C. MILLER, MARENGO, ILL.—I like big trees.

EUGENE SECOR, FOREST CITY, IOWA.—Inch board, large enough to shade the hives.

J. ALPAUGH, ST. THOMAS, ONT.—Give it up. Try every thing you can think of and then report.

PROF. A. J. COOK, LANSING, MICH.—Use a large shade board. A grove trimmed high is the ideal shade.

C. W. POST, MURRAY.—Fruit trees or grape vines, which ever is best adapted to your locality.

G. A. DEADMAN, BRUSSELS.—I prefer cherry trees. The ordinary Canadian cherry is the best.

J. F. DUNN, RIDGEWAY, ONT.—Set your hives out in the sun, and when necessary plant shade boards or sun caps on the hives.

G. M. DOOLITTLE, BORODINO, N. Y.—White paint on all the hives. This is better than shade, taking all in all, according to the opinion of Doolittle.

M. EMIGH, HOLBROOK, ONT.—I have tried sunflowers and grape vines, but have discarded them and prefer the summer sun, with a large shade entrance.

H. D. CUTTING, CLINTON, MICH.—Grape vines trained high so you can walk under them. Use high posts with cross arm and three wires. A board is the next best thing.

JAS. HEDDON, DOWAGIAC, MICH.—Plant nothing—use shade boards. There is much of the year when you want every ray of sunlight you can get. Have no trees in the apiary. Paint hives white, and packing boxes dark red.

B. MCKNIGHT, OWEN SOUND.—Apple trees. If desired in the near future—grape vines. Have

seen sunflowers recommended, but the hottest part of the season is over before they are big enough to be of service. The best annual is the castor bean plant.

G. W. DEMAREE, CHRISTIANBURG, Ky.—Don't plant any shade trees among the hives, they are badly in the way. I use a shade board for each hive, which projects considerably over the hive-board proper. It is a good plan to plant a row of trees, soft maple, linden or fruit trees of some sort will answer—around the border of the apiary lot, leaving the eastside open.

J. E. POND, NORTH ATTLEBORO, MASS.—I don't know. Each must judge for himself. I use no planted shade, that, of course must be stationary; but prefer to shade my colonies with awnings that can be moved as occasion may require. Usually I use a wooden shade, which, with ample ventilation during the heated term, answers my purpose exactly.

J. K. DARLING, ALMONTE.—A good broad shade cover, with plenty of ventilation between it and the hive. Have the cover painted some light color that will not draw the heat. Bees want the morning and evening sun, and you can't get that very well with trees that will shade the hives during the heat of the day. I consider vines and loose soil more or less of a nuisance in a bee yard.

ALLEN PRINGLE, SELBY, ONT.—I would not plant trees of any kind *merely* as a shade for an apiary. There would be more wisdom in making a cheap shade for each hive and using it only when needed. The chief objection to the permanent or fixed shade of any kind is that it is not always needed, and is some times worse than useless. Of course you could plant trees for shade which would be useful in other respects—such as basswood, fruit or nut trees.

BY THE EDITOR—We don't use any special form of shade, nor do we think it is necessary to have such. It is well to have a number of shade boards made in case they are required in very hot weather, with hives full of bees. The principal thing wanted is ventilation, which may be obtained by a wide entrance, and raising the back end of the cover a little. We never planted specially for shade.

Honey Boards.

QUERY No. 290.—(1) Which do you prefer as a queen-excluder, a plain sheet of perforated metal, or a wood-zinc honey board? (2) Where a plain sheet of perforated metal is used, what is the proper space between the excluder and brood-frames, both above and below the excluder?—B. L.

R. MCKNIGHT, OWEN SOUND.—I don't use excluders.

DR. C. C. MILLER, MARENGO, ILL.—(1) From my little experience wood-zinc.

G. A. DEADMAN, BRUSSELS.—(1) I prefer the wood-zinc honey board. (2) $\frac{5}{16}$ inch.

J. F. DUNN, RIDGWAY.—(1) A wood-zinc honey board. (2) $\frac{1}{2}$ of an inch.

G. M. DOOLITTLE, BORODINO, N. Y.—(1) Wood-zinc board. (2) $\frac{5}{16}$ of an inch.

EUGENE SECOR, FOREST CITY, IOWA.—(1) The wood-zinc honey board, Dr. Tinkers. (2) Have never used it.

M. EMIGH, HOLBROOK, ONT.—I don't use queen-excluders to any extent.

S. CORNEIL, LINDSAY, ONT.—(1) Wood-zinc honey board. (2) Not more than $\frac{1}{4}$ inch.

H. D. CUTTING, CLINTON, MICH.—(1) A wood-zinc honey board. (2) I want a space from $\frac{1}{2}$ to $\frac{5}{16}$ with any excluder.

J. K. DARLING, ALMONTE.—Have had no experience with the wood-zinc honey board. (2) A bee space above and below.

PROF. A. J. COOK, LANSING, MICH.—I prefer the Heddon slatted break joint, queen excluding honey board. I would not use it. (2) I wish the double bee space.

C. W. POST, MURRAY.—(1) A wood-zinc queen excluder every time. (2) There should be a $\frac{5}{16}$ space above and below any queen excluder.

ALLEN PRINGLE, SELBY.—(1) I prefer and use mostly the plain sheets of perforated metal. (2) The space above and below should be three-eighths scant.

J. ALPAUGH, ST. THOMAS, ONT.—(1) I use a plain sheet of perforated metal tacked on a contracted rim, which always keeps the metal tight and straight. (2) A $\frac{5}{16}$ space both above and below the metal works very nicely.

J. E. POND, NORTH ATTLEBORO, MASS.—(1) I have used both and do not see as one has any advantage over the other. It is wholly a matter of expediency and expense. (2) I use about bee space, say full $\frac{1}{4}$ inch. This, with myself, gives ample room, but then again, localities so differ in the matter of producing pollen, etc., and the honey yield also, that it must become a matter of individual tests. Try for yourself the coming season.

JAS. HEDDON, DOWAGIAC, MICH.—I prefer the honey board with its bee space in its upper surface, and the opening so arranged as to break joints with the spaces between the brood frames below. This honey board may be made of wood and zinc combined, or entirely of zinc, the rim forming the bee space, and all, and either style

be equally good. (2) $\frac{3}{8}$ scant, is the proper bee space in my apiary, I find.

G. W. DEMAREE, CHRISTIANBURG, KY.—(1) I prefer a plain sheet of zinc of the Jones make, framed with a wood rim similar to a slate frame. (2) The bee space, I think, should not be more than $\frac{3}{8}$ nor less than $\frac{1}{2}$ of an inch. The plain sheets of perforated zinc are cheaper than the wood and zinc boards, and are much easier cleaned of wax and bee-glue, and this I consider quite an item in their favor.

BY THE EDITOR.—(1) A wood-zinc honey board by all means. (2) A scant three-eighths of an inch both above and below.

Additional Replies.

Mr. S. Corneil's replies to the queries appeared in the two issues previous which to this did not come in time to find their proper place. They are given below:

QUERY No. 285.

The best way to secure the desired result is, to have the walls permanently packed, which can be done and not increase the weight more than five or six pounds. This will cost twice as much as the sum named, but I believe is the cheapest in the end.

QUERY NO. 286.

S. W.—Yes I understand that. It means South-West, but I don't know how to apply it to hives. The best method of spring protection is a hive whose walls are permanently packed, but not over four inches larger each way, and weighing not over six pounds more than ordinary hives. Unless granulated cork is available, long stringy sawdust made in sawing cedar shingles is hard to beat for packing.

QUERY NO. 287.

Don't know, but I know I would like to get 100 lbs. extracted and 50 to 75 lbs. comb.

QUERY NO. 288.

I don't know, but I prefer and use separators, and after a certain experience I once had I don't want ever to see comb honey built in any other way.

A VERY FAIR RETURN.

In the fall of 1889 I put away ten colonies for winter, lost one, and one weak, which left me eight to work with. Increased to twenty-one, got 550 pounds of extracted honey.

Yours truly,

T. G. WISEMEN.

Seeton, Ont.

THE CANADIAN BEE JOURNAL

ISSUED 1ST AND 15TH OF EACH MONTH.

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

BEETON, ONTARIO, MARCH 15, 1891.

The Western Ontario Bee-Keepers Association meet in Ridgeway on the 18th inst.

The index for the volume which closes with this number, will be enclosed in the first issue of Volume VII.

Our subscription list has increased by over 500 the past year, without any special effort on our part, further than to issue sample copies to those requesting them.

We noticed that Dadant's revision of "Langstroth on the Honey Bee" has been translated in French, and in doing the work of translation the matter has been adapted to the system of bee-keeping followed in France.

We have just got word of another reversible honey-extractor. The inventor says he has made a model which works all right. This time, too, it is a Canadian who invents it, but as he has not patented it we do not give the name.

ILLINOIS STATE BEE-KEEPERS' ASSOCIATION.

The Illinois bee-keepers met at Springfield, Ill., on the 26th February, and organized themselves into a State Association, applying at once for incorporation under State laws, which was granted them. They at once got down to business, and appointed a committee to request a grant of \$5,000 from the State Legislature, for the purpose of making a suitable display at the Columbian fair in 1893.

TAKING AN ENFORCED REST.

The last issue of the JOURNAL contained a short paragraph to the effect that Mr. Macpherson had met with an accident through slipping on the ice. At the time we had supposed that the result of the injury was of a temporary nature only, but it has turned out that the fall was more serious than had been anticipated. He was coming out of a house one evening about seven o'clock; the ground was covered with a thin

film of snow, which prevented him from noticing that there was a thin sheet of ice directly at the bottom of the steps. Consequently, the moment he stepped on the ice, both feet flew from under him, and he fell, striking the back of his head on the edge of a board of the steps. He was taken home, and the doctor called in when it was found that he had sustained a very severe concussion of the brain. He was delirious all the first night and the greater part of the next day. He has since been recovering so slowly that the doctor has ordered him away for a time, that he may secure rest for the brain.

ANOTHER SECTION FORMER.

A correspondent tells us of a section former which he uses with very good results. He describes it as follows: "It is made of hardwood, four pieces of the exact length of the different sides of the section so that when hinged together the V groove of the section will come directly over the hinge. These boards are to be hollowed out to suit the sections, and may be made to hold two, three, four or as many sections as the width of the boards will permit. The sections are held in place by buttons. The arrangement is then folded, and the dovetails are closed by a handle at the end which performs the part of a lever. When the affair is closed, you cannot release the sections, and unless you remember to turn the first button, you break the section on opening the magazine. It is a cheap affair, and I think of getting it patented." Our correspondent wants our advice as to the value of his invention, and wishes to know whether it will be worth his while to patent it. Candidly we cannot say it would. In the first place there is not enough demand for such a machine to make it pay, and besides the principle is not new, nor is its application. We have a similar arrangement, constructed to fold one section at a time, at present in our bee-house work-shop, which we have discarded since we began using the Crocker press. On the whole, we cannot advise the inventor to waste his money on a patent.

DOUBLE-WALLED HIVES.

Double-walled hives appear to be receiving more attention by some of our bee-keepers, who heretofore have thought them unnecessary, but perhaps improved methods of packing have something to do with it; also the different systems of manufacturing by which we are enabled to make them much lighter than usual. In fact, double-walled hives can be made as light as single walled hives. There seems to be a differ-

ence of opinion in regard to packing in dead air space; the principle of dead air spaces will prove of great advantage, but we prefer packing to a single dead air space. Mr. Corneil, in a very able article in the Bee-keepers Review, describes experiments that he made which indicate that granulated cork is the best and cheapest, all things considered. We are not fully convinced that double-walled hives are the best for northern localities, unless the packing is thicker than is necessary for the Southern or Middle States. Where our thermometer goes down to from 10 to 40 degrees below zero, unless the packing is thick it would be necessary for us to give them some other protection if wintered out of doors. About two inches would be sufficient for summer, spring and fall. Those who have single walled hives and desire only to use packing for spring and fall, or even the entire year if they choose, we think could not do better than to test our outside packing case as advertised in our catalogue or something of that kind.

THE NEW WATER CURE TREATMENT.

One can hardly pick a paper now-a-days without finding in it an advertisement under the above heading, or some thing similar, and at the bottom of these advertisements is to be found the name of Dr. Wilfred Hall. The treatment is a secret which you can buy on payment of \$4.00 and your signature to a paper pledging yourself that you will not divulge it to any one outside your own family, nor allow its use. Mr. A. I. Root paid \$4.00 for the secret, and apparently not considering the pledge of secrecy he signed as binding him to keep hidden that which he already knew, has given it to the public in the last issue of *Gleanings*. It is nothing more or less than what we had suspected, viz.:—the continued use of water injections, to remove substances diliterious to the general welfare of the system. Only the water must be taken in large quantities, and as hot as can be used. The cure, exactly as given by Dr. Hall, was published by the *Montreal Witness*, a short time since, so we are told since we commenced this item. Mr. Root quotes what is substantially the Hall treatment, as it was given to the public as far back as 1847, in a book by Joel Shaw, M. D.—We give the paragraphs as quoted:

"They may be repeated again and again, in as great quantity as desired. . . . A good mode, too, is to take a small injection, a tumbliferous, more or less, that is retained permanently, without a movement before morning. This is very soothing to the nervous system; aids in securing sound sleep, and, by its absorption in the coats of the bowels, dilutes acrid matters therein, tonifying and strengthening likewise those parts and aiding materially in bringing about natural movements."

After naming various diseases for which this remedy is invaluable, he says:

"This statement will cause sneering, I know; but it is no fancy sketch. The thorough washing out, so to say, of the lower bowels, by which the peristaltic, or downward action, of the whole alimentary canal, is promoted, and by the absorption or transudation of water its contents are moistened and diluted, and the whole of the abdominal circulation is suffused by that blandest and most soothing of fluids, pure water. Whoever understands well the sympathies and tendencies of these parts of the human system will at once perceive the truth of what I affirm."

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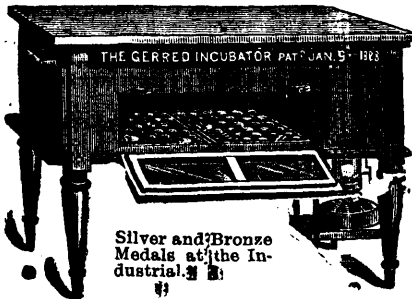
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IN ONE OF THE BEST LOCALITIES IN CANADA, having wild and cultivated land, alsike clover, white in abundance, fully 50,000 basswood trees, within three miles, fall pasture gave over 100 pounds from some colonies fall of '89. Distance from the lake prolongs the honey season of each flower several days. Almost no bees in the locality. Will sell 60 colonies bees wintered outdoors in splendid condition; 24 Langstroth hives in flat, half for comb and half for extracted; 4 frame Stanley Extractor, Langstroth frame; 500 surplus combs, Langstroth; 3000 sections, 4 1/2 x 4 1/2; Dandant brood and section foundation, about 100 pounds; 15 hives made up with supers.

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EGGS, \$1.00 for 13.

- Light Brahmas**—Six yards. Fletcher, Duke of York, Williams and Bucknam strains
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- 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
- Langshans**—Three yards. Croad strain
- White Plymouth Rocks**—Four yards
- White Wyandottes**—Two yards
- Silver Wyandottes**...Two yards
- Barred Plymouth Rocks**...Twelve yards. Drake Upham and Corbin strains
- Houdans**—Two yards. Pinckney strain
- White-Faced Black Spanish**—Two yards. McMillan and McKinstry strains
- Rose-Comb Brown Leghorns**...Two yards. Forbes strain
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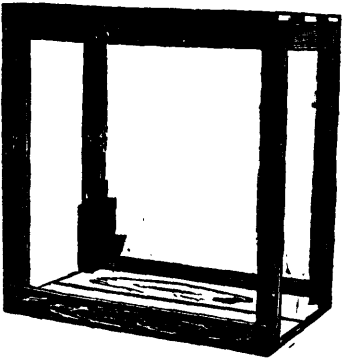
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We keep in stock one size only, 20 in. x 13 in. x 20 in for pairs or light trios.

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

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Skeletons, only,	50c.	2.50	5.00	18.00
Name and address printed on canvas 5c. each extra, \$3.00 per 100.				

For Exhibition purposes, where coops are not furnished by the Fair Associations, strips are supplied which are tacked on one side of coop, at 4c. per coop.

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

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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.

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Each, by	\$.30	\$.50
Per doz.,	4.00	4.80



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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 Cook 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 50cts. 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.

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3rd Exhibition

1st and 2nd on S. O. B. Cock, These birds are for sale 2nd on S. O. B. Hen, 96; 1st on Blk Minorca Pullet, 94 1st on S. O. 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 2 in. mesh No. 19 wire, in the various widths, in full roll lots (150 feet to roll):

19 GAUGE.				
24 in.	30 in.	36 in.	48 in.	72 in.
\$3 10	4 00	4 85	60	9 50
18 GAUGE.				
\$3 25	4 00	00	6 30	9 90

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

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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 ANDREW J, Paten's Mills. Wash. C. N.

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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 2 settings one of each, \$5. Duck eggs \$2 per 11, packed carefully in baskets with handles. Address P. H. Hamilton, Hamilton.

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I shall soon import from England a large number of

BUFF LEGHORNS

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.

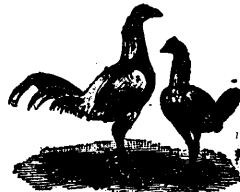
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NEW FANCIERS.



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3 months.....	\$3 00
6 "	5 00
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Payable in Advance.

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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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	Unies:01	Tested	Select Tested	Bees bylb.fr'm Virgin May 15
May	\$1 50	\$2 50	\$3 00	\$ 1 25
June	1 00	2 00	3 00	60 1 00
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