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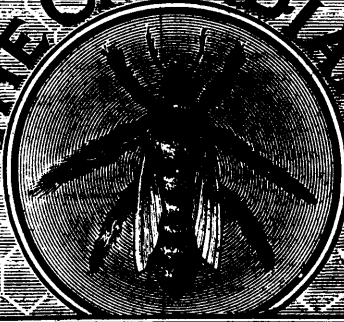
VOL. IV, NO. 52

1889

MARCH 20

PUBLISHED EXCLUSIVELY IN THE INTERESTS OF THE HONEY PRODUCER

THE CANADIAN



JOURNAL

THE FIRST \$

WEEKLY

IN THE WORLD

ONE DOLLAR PER YEAR

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

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

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

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

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

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"Beekeepers' Advance".....	1.20
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Communications on any subject of interest to the Bee-keeping fraternity are always welcome, and are solicited.

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

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

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

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**WANT** TO exchange a nice Box Machine nearly as good as new with Tongue and Groover and Swing Saw. Cost when new \$150; also one Root four-piece section machine, cost \$35; one saw bench with arbor and saws and belts, two tables with boring attachment, cost when new \$40, also 20 feet two-inch shafting with hangers, 12 cast iron pulleys from 10 to 30 inch, one grindstone, cost \$75, for a nice sound young carriage Horse. Address J. B. MASON, Mechanic Falls, Me. 51-2

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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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Cor. Freeman & Central Avenues, Cincinnati

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## The Production Of Comb Honey!

is a neat little book of 45 pages. Price 25 cents. This and the REVIEW one year for 65 cents. The book and the REVIEW two years for \$1. Stamps taken, either U. S. and Canadian.

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613 Wood Street, Flint, Mich.

# BEE SUPPLIES.

Single and double-walled Hives, Frames, sections, etc., at lowest prices. Quality and workmanship of the best. Send for price list to

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A 16-page Monthly devoted to Queen Breeders and Queen Rearing. Price 50 cents a year. Send your name on postal and receive a sample copy of this bright new journal. Address, The Q. B. Journal, 175 Main St., Marlboro, Mass

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Land for Sale in the County of De Soto, Lat. 26° 40'.

Twenty acres of good dry pine land on the Myakka River with over 500 feet of water front, 12 miles from the terminus of the Florida Southern Railway at Punta Gorda, with deep water all the way. Was selected for an apiary, for which it is very suitable, being within easy reach of black mangrove, cabbage and saw palmettoes, and pennyroyal, the great honey plants of Florida. It is also suitable for growing lemons, guavas, pine apples, and all kinds of vegetables. The Myakka is a tidal river running into Charlotte Harbor, and steamers drawing eight feet of water can go right up to the property. At Southland, 1 1/2 miles down stream, a large canning establishment is just about starting.

Price for the whole \$12.50 per acre, or in 5 and 10 acre lots, \$15 per acre, cash.

ALSO

Forty acres of first-class high pine land on Shell Creek; water front; 4 miles from Shell Creek station, miles from Cleveland, and 9 miles from Punta Gorda, all on the Florida Southern Railway, and with water carriage for sail boat to all these places. This land is 15 feet above the creek, rich in phosphates, and will grow oranges and all kinds of citrus fruits without fertilizing. Price per acre for 10 acres and upwards, \$10 cash—a great bargain.

The climate is splendid; heat rarely extends 90° in the summer and very mild in winter, and is exceedingly healthy—no malaria or yellow fever.

Apply to T. E. HECTOR,  
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Tested queen in April, May and June ..... \$1.60  
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Sent by mail and safe arrival guaranteed; also nuclei and full colonies. Eggs of Pekin ducks and White and Brown Leghorn chicks, \$1.00 per setting of thirteen.

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## WHO WANTS BEES.

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Address **JULIUS HOFFMAN,**  
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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 they will be inserted in our regular advertising columns. This column is **specially** intended for those who have bees or other goods for exchange for something else, and for the purpose of advertising bees, honey, etc. for sale. Cash must accompany advt.

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

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In responding to this advt. mention the C. B. J.

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- J. W. PORTER, Charlottesville, Va.
- J. B. MASON & SONS, Mechanic Falls, Me.
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- E. L. GOULD & Co., Brantford, Ont.

and numbers of other dealers. Write for SAMPLES FREE and Price List of Bee Supplies. We guarantee every inch of our Foundation equal to sample in every respect. Everyone who buys it is pleased with it.

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



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

VOL. IV. No. 52

BEETON, ONT., MARCH 20, 1889. WHOLE No. 208

## EDITORIAL

### MUST THE EXTRACTOR GO ?

AS A MEANS OF RAISING THE PRICE OF HONEY

A YEAR ago, at Woodstock, at the Annual Convention of the O.B.K.A., the Rev. W. F. Clarke, now president of the Association, spoke out his mind quite freely against the use of the Extractor. He advanced many reasons, which he considered cogent, why the extractor should be banished from the apiary. Among others were these : —1. The extractor had much to do with the cry of adulterated honey on the market. 2. If extracting honey from the brood nest was practised the safety of the colony for wintering was endangered. 3. It was responsible for the reduced price of honey generally.

And now the editor of the *Apiculturist* comes along, and tells us that he is of the same opinion, advancing much the same arguments, with special stress on number three. He advocates increasing the use of sections, thus reducing the crop of honey one-third. Things seem to be a good deal worse with our friends over the border than with us, though, dear knows, we have had bad enough luck here in Canada the past three years. But the price of honey has not got down to such a low ebb, as with our "Yankee" brethren. We do not think that doing away with the extractor is going to help matters very much, excepting to throw honey back

to where it was before—a luxury. Do we want such a state of things? Specialists may perhaps. Bee-keeping is fast reaching that stage where there will be some chance of regulation. The first few years of any new industry are generally marked by large profits, but in the meantime similar industries crop up, and profits are cut down, until they find their level in a fair honest recompense for the work performed. But before this stage is reached prices often go down to, or maybe below, the actual cost of production. As it has been with other industries, so it has been, and is now with bee-keeping. A few more years will find honey a staple article, properly catalogued in the general market reports, and when that time comes the price of honey will be even better than it is now. But the extractor is not at all likely to go.

### VIRGIN QUEENS.

OF virgin queens, in which by the way, we did a large trade last season, Mr Alley writes in the last number of the *Apiculturist*:

"If those who introduce these (virgin) queens desire to see one leave the hive to mate, all they need do is to go to the hive about one o'clock the first fair day [after] the queen is introduced, and they will not have long to wait for her ladyship to make her appearance. During the months of June, July and August, virgin queens usually leave the hive soon after one o'clock. At the last part of August and through the

month of September, they will take a flight soon after twelve o'clock. If one is in a hurry and has but little time to spend, the queen can be made to move a little quicker by turning about an ounce of honey over the combs at the top of the frames. This will excite the bees, and the queen will at once take the hint and fly out. This last operation is effective only when the bees are not gathering honey from the fields.

If the queen is not successful in mating in the first flight, she will go out several times the same day. By the above plan I have had as many as forty queens mate in one hour. Had there been no inducement for them to fly, not one in ten would have mated for several days.

There are some points to be gained in introducing virgin queens, I will state two of them: 1. Beekeepers who purchase them will be sure of getting no inbred queens so far as those are concerned. 2. One may have choice drones in his apiary which he would like to have mate with some fine queen of a superior strain."

Our premium offer of a virgin queen to each subscriber who renews for a full year in advance and to all new subscribers, is being taken advantage of by hundreds, and we will need to rear a very large number to meet this demand.

### THE LITTLE BUSY BEE.

HOW THE REPORTERS GIVE INTERESTING FACTS IN FACETIOUS STYLE.

JOHN Aspinwall, of Barrytown, N. Y., late editor of the *Beekeeper's Magazine*, delivered a lecture at the Cooper Institute, New York, on the little busy bee, its anatomy and physiology, and illustrated his remarks by stereoptican views, showing the insect and its workings in all their details. The reporter for the *New York Times* was there, and the following is the funny way he describes much that is truth regarding the members of the bee fraternity.

While in its physical make up the bee is in many respects the opposite of a man in his habits and tricks, he very much resembles the lord of creation, and were bees to be transformed into men some would undoubtedly go into the police force or in the board of aldermen, while there would not be a few successors to Jake Sharp and to the inexperienced young toughs who get clubbed by the police and are then sent up to the penitentiary for dishonesty and general "sass." The occupations of walking dele-

gate and dude mashers are also found in apiarian society.

The little bee, that is, the worker, is a horny skinned child of toil. He is incased in rings and shields of smooth horn to shield him against attacks of his own species, and he toils as long as there is light. He has not got backbone like a man or a mule, but instead he has a little stinging that serves his purpose just as well, and thus manages to maintain his rights. Between his tongue and sting there is a complicated mechanism that is of great use to the farmer and nature. Aside from the honey that he distils, and which is worth thousands of dollars annually to the farmer and to commerce, his habit of poking his head and covering it with pollen, which he brushes off in other flowers, renders him a benefactor to nature in fertilizing flowers. Before the advent of the bee in Australia it was impossible to get any seeds of red clover there. Of course, his process of making honey might not suit the most fastidious taste, for honey is partly digested cane sugar, made so by the aid of bee saliva, but as the bee is a perfectly clean little animal that revels in nectar all day long, these little irregularities must be overlooked. Besides, he uses a different mouth for the honey.

The bee is a good flyer, but as his wings are smaller in proportion to his body than are those of the eagle to the king of birds, he has to flap them more frequently, so he flaps away at the rate of 446 flaps to the minute. He has no lungs, but a system of tiny air tubes extended through all parts of the body, and these he packs with air when he wants to fly. Neither has he a heart, but a dorsal vessel that pumps blood to the head. The head, as magnified on the screen, is not a beautiful object, and as it is not the centre of the nervous system he would not miss it very much if cut off if it were not for the eyes, two of which have 40,000 lenses to see the honey flowers afar off, and two others to assist in doing the microscopical work in the hive.

The entrances to the hive are very carefully guarded by sentinels, and every bee on arriving at the door is challenged by them with their antennæ. If he can give the countersign he is admitted into the sanctuary, but if he cannot he is in danger, for bees are very nervous insects, and draw stings on the slightest provocation. The applicant must be a thief, and old thieves are detected by experienced sentinels, but the form of challenging must be gone through first.

The old thief bee is fat and sleek and shining and very suave. If caught by sentinels, he will at once try to make a deal and offer the police-

man some sugar, and while they are eating it he either slips in and fills up at the cells or he retreats and tries another hive. If the sentinels are incorruptible, the thief humps himself, draws his horny shields tight around him so that the stings of the policemen may not penetrate and runs. A young thief stands up to fight and gets clubbed. He learns by experience.

The queen bee has not such a very easy time. She has plenty to eat and eats it, and flies very little; but as she has to lay all the eggs of the colony, and often lays more than her weight of eggs in one day, the bees begrudge her nothing, but let her have her own way everywhere.

The drone is the dude and walking delegate of the hive. He is not very numerous, however. He is fat and spends his time eating honey, flirting with the girls and the queen, then takes a quiet nap in the sun. When his charms no longer please he is driven out, and if he cannot get a berth in another hive he starves. The little worker, however, according to the lecturer, does not fare much better. She lives for about six weeks, when she becomes feeble, her wings get torn and fringed, and she lies down to die in the field, refusing to return to the hive and become a burden on the colony.

From our English Correspondent.

### MEL SAPIT OMNIA.

**A**S Canadian and British bee-keepers have both been holding their annual meetings I have been persisting the different matters that have come before the two Associations. We have been contending for "one man one vote" in the election of officers and have lost, as each 5s per annum subscribed to the funds carries a vote with it. Consequently one's voting power depends on the length of one's purse, and not on the amount of intelligence one displays in apiculture. We once had a rule that only those who subscribed £1 per annum could serve on the committee, or as you would say, board of directors. But we have altered that and now any member is eligible for election on the committee except manufacturers of and dealers in bee-keepers' supplies. Why so? Are they sinners above all the fraternity whom formic acid has made one in cantankerousness? My dear cousins of the 'frozen land,' you have no conception of the strangeness of some of the current ideas of this dear old "fossildom" that you call the "mother country." An inventor of an appliance may assign the right of manufacturing his invention to a dealer, and he is yet eligible to act as a judge at the shows (fairs) where these inventions are in competition with others,

but the man who made the supplies is not eligible for the committee of the B.B.K.A. Spite of such anomalies we go on and keep moving, it is slow, but we still move. So much for us on this side, we cannot keep pace with you in such matters as

#### PRIORITY OF LOCATION.

Mr. Pettit in his paper does me the double honor of first quoting some words of mine, and second saying that he is willing to believe that "A. E. has not given the subject due thought." I am afraid I have, it is forced upon me; I get up and lie down with it, it goes with me by day and is present even in my dreams. Send Mr. Pettit to England. I will put him on a political platform (it is respectable to study politics on this side), and let him listen to a Free vs. Fair Trade discussion for an hour and I will guarantee he will go back home a free trader. Let me see how "Priority of Location" fits. Canada by her fertile virgin soil and the lowness of Atlantic freights can squat down here in our market and sell wheat at a price that our farmers cannot till their land and live by the side of them. Within sight of where I now write are five farms that were all cultivated ten years ago; a farmer and his family lived on each and kept on an average four or five hired hands on each farm, and paid £1 per acre per annum rent, 6s tithe. Now they are all overrun with wild grass, the five farmers are bankrupt and gone, three hired hands keep charge of the whole five farms, the fields are simply mowed over each summer and the crop is stacked and called hay! Mr. Pettit can have them rent free for the first year and 5s per acre afterwards if he will cultivate them and the land is excellent corn growing soil. But then you see the cases are not parallel. Canada is placing within reach of England's millions of hungry poor a cheap loaf of bread and the noble Marquis who owns the land and the five farmers who got a living there may go hang and shift off to Manitoba and the hired hands crowd into the towns and make work there more scarce, but we must not cry "priority of location" and put a tax on Canadian corn and raise the price up to what it was in 1880 so that British farmers can live as well as Canadian. Now Mr. Pettit, when I tell you that I make farm implements for my bread and cheese and this is what I see going on amongst the people who find me a living shall I impose on your credulity if I say I am still a free trader and a stout upholder of "a fair field and no favors." How logical we can become when it fits our pockets. In 1886 we had such a crop of honey that our own product dropt one half on the



market and gave our hungry poor a chance of tasting British honey at a price that it would not pay you to ship from Canada to us unaided by the State. Moreover the aforesaid hungry poor may all get a taste of honey in ordinary seasons if they will only set a hive of bees down against their cottage doors and no one will cry out "priority of location" if Canadians can send it to us for five cents per lb.

#### WINTERING BEES.

I have been reading Mr. Corneil's very able paper on "ventilation" with great pleasure. I have very grave doubts that bees in a state of hibernation require such a rapid change of air in their hives as Mr. Cheshire says. And in a state of activity they manage the question of ventilation quick enough. We have two methods of packing bees for winter and it may interest you to know how they act, as I think the subject bears out some of Mr. Corneil's theories. One method is to cover the tops of the frames with a thin non-porous enamelled quilt, over that lay two or three sheets of wool carpet and a tray of chaff two inches deep on top of that. The roof does not touch the tray of chaff by four or six inches, consequently there is ample room for moisture to evaporate off. A rim two inches deep is placed under the hive on the floor board and entrance is left open the whole width of the hive. Spite of this some complain that their bees roll out of the hives with distended abdomens, or a heap of dead bees choke the entrances and at times moisture trickles out of the flight holes.

Instead of the enamelled quilt I use a sheet of duck next the frames and the carpets and cork dust tray over all, with ventilation in the roof as explained. I do not use the two-inch rim underneath and I close my entrances up to within one inch only. I never saw moisture trickling out of my hive mouths. A wire hook to draw out dead bees I never owned nor do my combs get mouldy as some complain. You may draw your own conclusions. I certainly should not place a flat board on my top packing as you place your flat hive tops on yours, our climate is far too humid to allow of it although wood is a fairly good material for letting off moisture if kept dry on the outside. I need scarce remind you we winter on summer stands.

#### UNCUT JOURNALS.

Dr. Mason understands now why I said he would want his knife if he came over here. Oh Doctor! is it too much trouble to cut your bee-papers? We have to cut all ours and if by any chance there comes a transatlantic one with an uncut leaf I at once rip it up to be certain

there is nothing hid there that came from the pen of A. B. M., for I could not risk missing one of your tid-bits.

I would draw a cartoon, but the editor would not get it cut. You can sketch it out in your minds. I would have Dr. Mason to stand for Uncle Sam's country, Mr. McKnight for Canada and a very dear old friend for Scotland, and I would put John Bull in the middle and this is what they should say:—

1. Basswood honey is the best in the world!
2. Linden honey is the best in the world!!\*
3. Scotch heather honey is to be matched by none other in the world!!!\*

John Bull. How much have you three fellows got to sell and which is cheapest?

Well friends, you must sift the sober serious from the fun, and the irony from both and think as kindly as you can of

AMATEUR EXPERT.

Eng. 28th Feb., '89.

FOR THE CANADIAN BEE JOURNAL.

#### Something more about Bees Stealing Eggs.

MR. BLACK is anxious to gain some information upon this subject of eggstealing, from the readers of the C. B. J. I might just say, while looking over my bees last spring, I came across a colony similar to that of which Mr. Black speaks of.

When this colony was set out in the spring it had a good laying queen, but on examining it seven or eight days afterwards I found it queenless and the bees just commencing to form queen cells. It was a pretty strong colony so I fixed them up as comfortable as I could and let them run on the queenless system until such time that I could rear a young queen to supply their wants. In eight days I examined them again to ascertain how they were progressing; on taking out some of the combs I found quite a number of fine large capped queen cells all pretty well advanced. Well I thought there is no use in letting this work go any further as there were no drones flying or likely to be for some time to come it would only be a disappointment to the poor bees in the end, so I pulled down all the queen cells, took out one comb as the bees had become weaker in numbers since last examination. I contracted the brood-chamber, put on the cover and left them for six days more and while looking over them this time, to my astonishment, fertile workers had taken possession of the colony. Well for the last time I thought, since I have taken so much trouble I would let them work

\*I heard this said in public at the Colonial in 1886.

out their own salvation until I got a young queen. Well I was not in a hurry so I let them run on for nearly two weeks before I examined them again. By this time a few drones were flying and I began to look for swarms pretty soon, which means young queens also, so one day I examined the doomed colony once more and began to take out the combs. I noticed quite a difference in the strength of the colony; they had dwindled down to about one half of what they were in the spring. As I continued to take out the combs this useless brood seemed to increase. Well as I got on towards the front of the hive what did I find but a fine large and well developed queen-cell. This was quite a curiosity to me so I watched it every day to see if it would hatch, and what do you think on the third day it did hatch a perfect beauty of a queen. Shortly this queen began to lay and the more sensible bees of the colony began to kill off the fertile workers and in the course of a few months this was one of the best colonies in the yard. Now I do really believe bees are capable of committing theft in a case like this. Now dear readers where or how did those bees get that egg to rear a queen unless they stole it from a neighboring hive?

A. FYFE.

Wellington Apiary, March 11th, 1889.

For the CANADIAN BEE JOURNAL.

#### SUGGESTIONS FOR THE O.B.K.A.

THE O.B.K.A. is more of an ornamental body than useful. It is true it gives good value for its membership fee and does a little in regard to increasing the prizes at fall fairs. But the practical benefits derived from membership are practically *nil*. There is an annual meeting attended by but a mere handful, and this must always be so because the distances to be travelled are too great.

Now I want to see the O.B.K.A. become a power in the land. I want it to become really practically useful. And my ideas in regard to this matter, as to how the thing should be worked are these:

First. Increase the membership. The directors will say we do all we can in this direction. Yes, so far as sending a man a circular asking for a remittance, which is all very well in its way but does not go far enough. There is a substantial Government grant to work with, and if the O.B.K.A. would take a leaf from the Farmers' Institute it could swell its membership to a thousand. At the annual meeting let ten or a dozen, what for conven-

ience I will call experts, be appointed, men well up in apiculture, and good speakers. Every affiliated county association to have the privilege of having at least two of these, any two they select, to attend one of their conventions, half the expenses being borne by the O.B.K.A. Such "experts" could explain away any difficulties local bee-keepers might have met with, read instructive papers and their presence would lend great additional interest to the convention. The advantages of membership in the O.B.K.A., the premium etc., should be dwelt upon, and all present urged to become members. I would follow the Farmers' Institute in another thing, namely, an open meeting on the evening of the convention, with short speeches by local men, and music by voluntary talent, together with a short lecture on Bees and Honey by the visiting expert. The lecture to deal with the dietetic and medicinal properties etc. of honey, and in this way create a little interest in our product, and educate the masses to its uses. At the close of the meeting each person present to be handed a copy of your little leaflet on Honey and its uses. The local association could procure these and have on the back a list of its members so that the public would know where to go for honey. A good digest of the lecture to be furnished the local press, thus reaching many more than those in actual attendance.

Why cannot the O.B.K.A. offer a reward of, say, \$500 for a sample of artificial honey in artificial comb, the same as Mr. Root offers his \$1,000. There is not the slightest chance of its ever being called for, and it would go far to knock out the talk about machine made honey. A smaller reward of \$20 might advantageously be offered for the conviction of any person adulterating extracted honey. In my opinion honey is not adulterated in Canada, but the public has a deep rooted idea that such is the case; that idea wants killing by some means, and this is one way I should take of doing it.

Another thing the Association might do,—print a full report of all papers and discussions at the annual convention, and at such a convention as will be held at Brantford in the fall, and circulate them. The secretary should endeavor to obtain the names of all bee-keepers in the Province for the procuring of statistics, and to each name so obtained, the report above mentioned should be sent. This could be cheaply done through our two Canadian bee papers, the Association only paying for the extra copies and trouble of mailing. The publishers of both papers are sufficiently loyal to apiculture not to desire to make a fortune out of such a job.

I would like to hear from Pres. Clarke, Messrs Emigh, McKnight and others regarding the above schemes, or to see what views they have in regard to making the O.B.K.A. a really useful and popular organization.

# PRACTICAL BEE-KEEPING.

BY D. A. JONES.

## PAPER V.—CONTINUED.

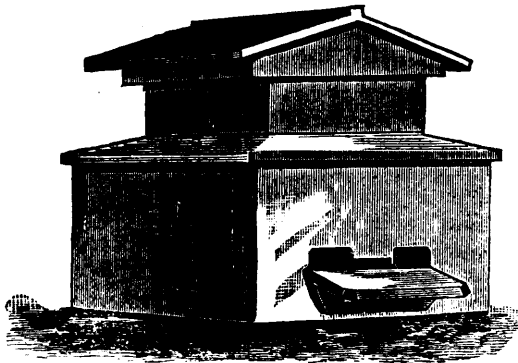
### THE RICHARDSON HIVE.

While describing the hives in general use in Canada, I feel that I would not be doing my duty were I to mention none but those which we make ourselves, especially so as some of our best beekeepers use hives different from any I have heretofore mentioned. Probably the one most extensively used outside those already described is the "Richardson Hive." Mr. Emigh, Mr. Dunn and quite a number of other excellent bee-

keepers use this hive and speak well of it. The makers of the hive tell us that in 14 years, they have made and sold nearly 50,000 of these hives. This speaks well for them. That I might make no mistake where the interests of others were concerned, I asked the Messrs Richardson to describe their hive for these papers, which they have done. I therefore present the description in their own words:

bee space above the brood frames and the same in upper story. For comb honey, we use 27 pound sections, with tin separators, in one ½ story and tier up as desired; the sections are placed at right angles with brood frames.

The brood frames are placed endwise to entrance of hive. Our hives are nearly square being 15 3/8 x 14 inches, inside measurement. Our dust hives are the same dimensions inside as the single wall hives. Bees winter well in either hive on their summer stands. For wintering we use a cushioned frame on each side of hive close to sides, and remove one other frame

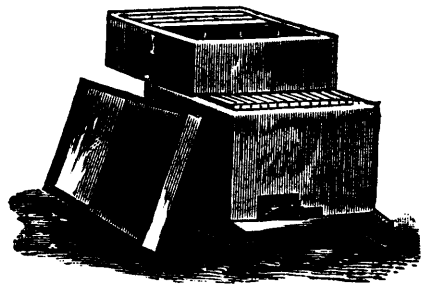


RICHARDSON SAWDUST HIVE.

keepers use this hive and speak well of it. The makers of the hive tell us that in 14 years, they have made and sold nearly 50,000 of these hives. This speaks well for them. That I might make no mistake where the interests of others were concerned, I asked the Messrs Richardson to describe their hive for these papers, which they have done. I therefore present the description in their own words:

Our hives are made so they can be used as a single story, or 1½ story, or for two storeys, as the user may deem necessary, the half storeys are readily converted into supers with movable 1 rests for comb honey. Our hives have a movable bottom board with an adjustable alighting board, made secure to the hive with wire hooks and eyes. Our frames are 14 5/8 x 10 in. with 10 frames in lower story, and for extracting 8 frames in upper story. Honey board, gives ¼ in.

so to leave but 7 frames for bees to winter upon, place ½ story on and a thick cushion packed well in for winter covering with sun cap over all.



RICHARDSON SINGLE-WALLED HIVE.

I omitted to state in proper place how to get sections out of ½ storeys when filled. Turn ½ story upside down put on two boards as follows just wide enough to go between the 1 supports, press down to start the sections, all will slide out without any injury or breaking the capping of honey in the least.

The hive most extensively sold by Messrs E. L. Goold & Co, is the Langstroth, with changes of their own which they consider improvements. As the Langstroth hive has already been described it will not be necessary for me to say anything further of it. I have now sketched all the hives in general use in Canada, and in such a way that I believe any one at all handy with tools could get them up. The question I will next take up will be in the way of

#### HELPS IN HIVEMAKING,

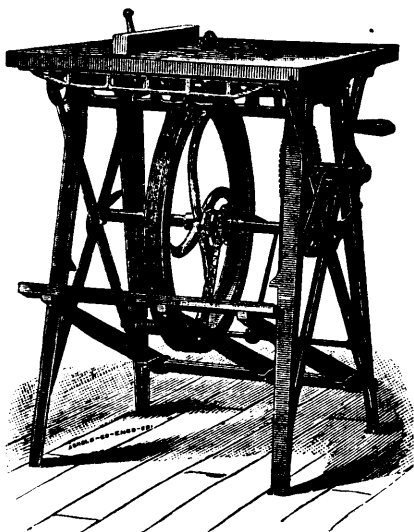
for the amateur. With rough lumber, a saw, planes, square, hammer and nails, hives can be made in a poor sort of way, but where many are wanted, this is too slow and antiquated a process. And the average beekeeper is not likely to give the work sufficient attention to produce a nice accurate job. In the first place the planing, cross-cutting and ripping can be done much more accurately at the nearest factory, and the time and cost of this will be more than counterbalanced by the gain in time of putting together, and the style of workmanship. The frames would much better come from some establishment where the machinery is specially adapted for such work, in fact, for myself were I not in the supply business, I should procure my hives all ready cut from some large supply-dealer whose appliances for work were such as would ensure me good workmanship at a fair price. The hive can be shipped "in the flat" or "knocked down" as the railway companies put it, at low rates, and the price delivered will not be any more than the home-made hives would have cost. But how much more pleasure in putting them together?

Of course with proper machinery even the amateur can do pretty good work, and if the beekeeper has in connection with his business of apiarist, any other avocation where a good set of foot-power machinery could be used to advantage I should by all means recommend it.

#### BARNES' FOOT POWER COMBINED MACHINE.

I do not know of any which I can more confidently advise than the combined machine made by Messrs W. F. & John Barnes of Rockford, Ill. Until

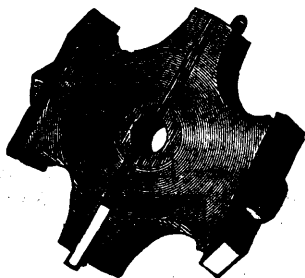
I studied their catalogue I had no idea that it could be turned to so many uses.



BARNES' COMBINED MACHINE.

The combined machine consists of a circular saw, scroll saw and boring attachment. The engraving here given shows the combined machine arranged as a cross cut circular table. By changing the saw to a rip circular and putting on another attachment it will rip lumber of short lengths.

For the boring attachment a sliding table is placed on the regular table; this moves on substantial ways, which carry the material uniformly to the augur or bit. It also has a stop to govern the depth of the hole. The table is adjustable, up and down, and as the work can be run from side to side, between stops, in the usual way, all the adjustments necessary for general use are provided for.



CUTTER HEAD FOR COMBINED MACHINE.

Cutter heads are fitted to use on the saw mandrel for cutting grooves, gains,

dadoes, rabbets, joints for boxes, drawers, etc.

These cutter heads, while fitted to the machine, are extra, but the cost is so small that anyone using the machine will not be long in getting a few knives. Four piece sections may be made with one of these cutter heads, and good work may be turned out with them. In short for general use, no more profitable investment can be made than this combined machine, with its different combinations and attachments.

Emery wheels, in size up to one inch face, by six inches in diameter, can be used to good advantage on these machines.

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Read at the Nebraska Convention.

### The Relation of the Honey-Bee to Horticulture.

**A** VERY close connection exists between the two subjects, and the relation, one to the other, should be considered in all its bearings. It is evident that flowers are useful to insects, but the question arises, are the insects of any use to the flowers?

First, it is to be seen what benefit the insect is to horticulture, and then what harm, if any, the insects cause to flowers.

An ordinary flower will be taken for an example. Inside the corolla is a set of organs called stamens, and on top of them is an organ called anther, containing a powder known as pollen, which carries the male element of the flower, or the sperm cell. In the center of the flower is another organ, or organs, called a pistil, composed of three parts, the stigma, style and ovary. The ovary is a hollow case or pod, which contains rudimentary seeds, and in which is found at the proper time the embryo sac that contains the germ-cell. To produce fruitage the sperm-cell must be brought into immediate contact with the germ-cell. The question is, how are these two elements to be brought together?

When all of the organs are found in one flower, or in the case of the one described, the process is very simple. A gentle movement of the wind after the anther has ripened will shower the potent grains of pollen down upon the receptive stigma. Soon there is found what is known as the pollen-tube, which, growing downward through the style, and guided by some mysterious yet unerring power, makes its way to the embryo sac. Movement, growth and all formation commences, and

thus is formed the fruit and seed, in which lies beautifully folded the embryo plantlet of the future tree, bush, vine, or whatever it may be.

In some flowers the process of pollination is more complicated. They are so constructed that the pollen cannot reach the stigma, although in the same flower. In some instances the pollen dust is so constituted as to be of no use to the pistil of the same flower, and in many flowers the stamens and pistils are not fully developed at the same time. In these and in other cases some outward agency must be looked to, to bring the two elements together. This brings up another important part of the subject. Not only pollination is desired, but pollination in such a way as to secure cross-fertilization, preventing what is known among stockmen as "in-breeding." Here comes in the work of the bees. In visiting the flowers they carry pollen from flower to flower, and thus do for the plant what it cannot do for itself.

It has been shown by experiments that self-fertilized plants, that is, fertilized by their own pollen, are generally much inferior in vigor and strength to those that are cross-fertilized. In many gardens and green-houses bees are kept for this very purpose.

In this connection, lest some one may ask why this mixing up of pollen of various plants will not create great confusion by the production of hybrids, etc., it may be stated that Aristotle observed, over 2,000 years ago, that bees visit the flowers of the same species as long as they can, and this has been confirmed by later observation. The wind and other insects than bees are valuable in accomplishing cross-fertilization, but many trees and plants have to depend upon the bee.

The question now comes up, do bees ever injure fruit? The prevailing testimony seems to be that, as a general thing, bees do not perforate flowers. The main ground of complaint has been that the bees injure the fruit itself, especially the grape. Prof. McLain, who is employed by the Government to make experiments in apiculture, has devoted considerable time to this subject. He confined a number of colonies of bees in a house, and endeavored by heat, etc., to bring about drouth, and they were brought to the stages of hunger, thirst and starvation, the test lasting forty days. Thirteen varieties of grapes were placed before them, and every opportunity afforded the bees to appease their hunger, but in no case were the bees able to pierce the skin of a sound grape, or otherwise harm it. When the skins had been cracked or burst, the bees lapped and sucked the juice

out, but the sound fruit was untouched. My own experience has corroborated these statements. The jaws or mandibles of a worker-bee are not constructed for cutting hard, rough substances.

Permit me to make one remark in conclusion that does not properly relate exactly to the subject, but rightly grows out of it, I think. In religious matters I am inclined to be very liberal, and give the utmost liberty to others; yet it seems to me that no man can study carefully such statements as I have made and kindred facts without being forced to the conclusion that there is a "power not ourselves" behind nature, "which makes for righteousness," whether he agree with me, and call that power God, or not. To me all this is the manifestation of an Infinite Father, and I would it might be to all men.

(REV.) E. T. ABBOTT.

St. Joseph, Mo.

From the Cayuga Advocate.

#### HALDIMAND BEE-KEEPERS.

THE annual meeting of the Haldimand Bee-Keepers' Association was held at the Town Hall, Cayuga, on the 1st of March. Present—James Armstrong, President, in the chair; and Messrs. W. Kindree, D. Anguish, Israel Overholt, M. Schisler, F. Rose, Isaac G. Wismer, O. Fathers, Robert Coverdale, James Jack, and the Secretary.

Minutes of last meeting read and confirmed.

The election of officers was the first business, when the following were elected:

President—James Armstrong.

Vice-Pres.—F. Rose.

Sec.-Treas.—E. C. Campbell.

Directors—Isaac Overholt, Wm. Kindree, W. Atkinson, F. Mehlenbacher.

The President read extracts from the by-laws of the Ontario Bee-Keepers' Association, when it was moved by Mr. Campbell, seconded by Mr. Overholt, that the Secretary be authorized to send \$5 to the Ontario Bee-Keepers' Association for affiliation with that society for 1889. Carried.

Moved by Mr. Rose, seconded by Mr. Overholt, that the President correspond with the Secretary of the O.B.K.A. with reference to securing a lecture from some prominent bee-keeper at our next meeting.

#### PASTURAGE FOR BEES.

Mr. David Anguish, President of the Brant Bee-Keepers' Association, read the following short essay on bee pasturage:

"I know by experience that there is more in

pasturage for bees than there is in the management of the apiarist. The last season's crop of honey will explain what I mean better than I can. You are all aware I got a very fair yield of honey when you all failed in Haldimand. I don't pretend to say that I am any better apiarist than there is in Haldimand county. Brant county gave a very fair yield of honey, with the exception of a few localities in and around the city of Brantford. There was one bee-keeper in the county of Brant, from one colony in the spring increased to four, all very strong, and plenty of honey to carry them through, and he got 125 lbs. of surplus comb honey in one pound sections; it was all gathered from the Canadian thistle and buckwheat. For my part I think it would be advisable for every bee-keeper to try some of the Chapman honey plant. I know it would do well on your heavy land, and it comes in bloom when there is nothing else for the bees to work on; and it would be advisable to sow buckwheat, if for nothing else than for the bees. Some may object to this, but I am pretty sure if you would get some of the Japanese buckwheat and try it you would never be sorry that you did so. Buckwheat is like all other honey plants, if the weather is favorable the bees will gather honey very fast. I had one colony gather 11 lbs. in one day for that plant alone."

The President agreed with Mr. Anguish on the necessity of having good pasture for bees, and no matter how good an apiarist you may be if there is no pasture for the bees the result will be a failure.

Mr. Rose moved 32 of his hives up to the County of Norfolk, where there was a large quantity of Japanese buckwheat, and they gathered sufficient honey to winter 64 colonies. In answer to Mr. Overholt, Mr. Armstrong said that bees gather honey from second crop of red clover when other clover is scarce.

Moved by Mr. Anguish, seconded by Mr. Rose, that the next meeting be held at Cayuga if a lecturer is secured; if not, at Nelles Corners, on the last Tuesday in May.

E. C. CAMPBELL, Secretary.

#### CONVENTION NOTICES.

The annual meeting of the Western Ontario Bee-keepers Association will be held in the Forester's Hall, Chatham, on March 20th and 21st, 1889. Come and bring your friends with you, as great preparations have been made for this meeting. The president of the O. B. K. Ass'n will be present. Do not fail to attend.

N. SMITH, Sec'y

## QUERIES AND REPLEIS.

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.

### Sugar or Honey for Spring Feeding.

QUERY 224.—Which is best for spring stimulative feeding, honey or sugar syrup?

R. MCKNIGHT, OWEN SOUND.—Probably sugar syrup.

DR. C. C. MILLER, MARENGO, ILL.—I don't suppose it makes much difference.

H. D. CUTTING, CLINTON, MICH.—Honey, if produced in your own apiary.

A. B. MASON, AUBURDALE, OHIO.—I don't know, but use sugar, syrup or unsaleable honey.

G. M. DOOLITTLE, BORODINO, N.Y.—I use sugar as honey induces robbing at this season of the year.

ALLEN PRINGLE, SELBY, ONT.—If both are good and of the right consistency it is immaterial which you use.

S. CORNEIL, LINDBAY, ONT.—I don't think there is much difference. Honey is more likely to start robbing.

PROF. A. J. COOK, LIANSING, MICH.—I prefer syrup. It is cheaper, and less apt to induce robbing.

W. M. BARNUM, ANGELICA, N.Y.—It makes but little difference. Take that which is the handiest. If circumstances are equal take the honey.

J. K. DARLING, ALMONTE, ONT.—Honey every time, but there is greater danger of trouble in feeding it. Sour honey will do as well as any if it does not contain alcohol.

EUGENE SECOR, FOREST CITY, IOWA.—The best stimulative feed that I know of is natural pasturage in addition to plenty of honey in the hive. I don't believe it pays to stimulate in advance of the season.

JAMES HEDDON, DOWAGIAC, MICH.—Honey, because it contains more nitrogen, which makes it better than sugar for spring stimulative food, for the very reason that sugar syrup is better than honey when bees are confined and cannot fly, and need sedative rather than stimulative food.

G. W. DEMAREE, CHRISTIANBURG.—In my opinion there is nothing under the sun equal to a good article of honey for feeding, or "stimulating bees." I dilute the honey, making a thin,

smooth syrup of it like brand new honey. Nothing will stir life and vim in bees like pure honey. Sugar is a near substitute when it comes to stimulating bees.

WM. McEVOR, WOODBURN.—If your bees have plenty of good stores they will do better left alone in spring. When bees need feeding early in spring feed sugar syrup and they wont rob so bad as if fed honey. Feed honey between fruit bloom and clover if they need feeding.

J. F. DUNN, RIDGEWAY.—I have done so little stimulative feeding that I will not venture to say which would be the better. Over one hundred acres of fruit bloom within a radius of a mile gives my bees all the stimulation they need in spring.

J. E. POND, NORTH ATTLEBORO, MASS.—Honey by all means. I dilute it a little. I do not however, think any gain is made by stimulative feeding when done only for that purpose. If there is honey enough in the hive it is best done by breaking open a few cells every night or morning.

G. A. DEADMAN, BRUSSELS.—I will not say which I think is best as either are best under some circumstances. I can tell you which I prefer and use. I believe it is better not to advocate sugar feeding in the spring—"Avoid the very appearance of evil" when you can well do so—still if you have no honey of your own rather than buy it I would feed sugar syrup. Each year save your second class honey for this purpose, or your first extracting if you cannot guarantee it free from any sugar syrup fed the previous year or in the spring, or, if it contains more or less honey gathered previous to white clover bloom. You will then have that which is superior to sugar syrup for stimulative feeding, and all you need to do is to thin it with hot water just before using it.

### Business Notices.

#### AN EXPLANATION.

Owing to some delay at the Paper mills, with a large order of paper for the JOURNAL, a portion of the issue of last week was sent out a few days late. We placed our order a month in advance of our needs, yet were disappointed. We have already told our paper-makers when we will want the next lot, and we will not likely be disappointed again.

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