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VOL. IV, NO. 27 1888 SEPTEMBER 26

PUBLISHED EXCLUSIVELY IN THE INTERESTS OF THE HONEY PRODUCER

THE CANADIAN JOURNAL

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ONE DOLLAR PER YEAR

THE GREATEST POSSIBLE GOOD TO THE GREATEST POSSIBLE NUMBER

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TO CONTRIBUTORS

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

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

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

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

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EXCHANGE AND ART.

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.

WANTED—all your loose magazines, periodicals, and journals to bind, at the BINDERY, BEETON Ont.

APIARY FOR SALE, including 20 acres of land, in one of the best locations in Ontario. Have this year averaged 75 lbs. per colony and increased from 14 to 35. For particulars address THOMAS STOKES, Minesing, Simcoe County, Ont.

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

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

QUEENS, GRAND LAYERS.—Untested Italians $1; a few mismated, in 2nd season, clipped, 50c.; Virgins 50c. Foul brood never in this locality. R. KNECHTEL, Brussels, Ont.

BEES FOR SALE.—40 good Colonies of Italian bees for sale at $6 per colony; for quantity write for discounts. Also a few young Queens at $1 each. E. HEAL, St. Thomas.

THE CANADIAN BEE JOURNAL WEEKLY.

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

VOL. IV. No. 27 **BEETON, ONT., SEPT. 26, 1888.** WHOLE No. 183

EDITORIAL.

WHAT shall be the the national flower of the United States? This question was first brought before the public at the recent session of the Society of American Florists in New York. Some one proposes that the golden-rod shall be the chosen emblem of nationality. The claims made for this flower are that it is national in the wide range of its growth, accommodating itself to almost any circumstances, in the pasture, in the meadow, in the roadside, or by the stream.—Lewiston *Journal*.

***

Aluminium is one of the metals that are practically non-corrosive and recent improvements in its manufacture have made the price so little more than zinc that its use is suggested in lieu of that metal in apiary supplies. "Amateur Expert" imagines that it would not be so readily propilised as zinc.

***

Store your honey in a warm, dry place. Honey of good consistency is appreciated by the consumer.

***

There is an active demand for honey, but apiarists seem loth to part with their surplus, except at fair figures, and this is as it should be.

***

A correspondent suggests "an improvement on the hives in common use." Said improvement consists of a hinged cover with a narrow hinged strip along the centre to act as a foot or support whilst the frames are uncovered for examination. What he would do when it was desirable to place supers on the hive, is not stated.

***

At the Toronto Exhibition we had the pleasure of meeting Mr. Henry F. Moore, agricultural editor of the London *Times* and editor of *Bell's Messenger*. He is visiting Ontario and the North West and on his return will pen a series of articles thereon.

CONDENSED CURRENCY.

A DIGEST OF ARTICLES APPEARING IN OTHER PERIODICALS.

FOR getting bees out of sections Dr. Miller uses a minature bee tent of mosquito netting, made so the four legs or rods will rest on the sections whilst the edges of the netting cover the sides and prevent robbing. At the apex is a small opening or "bee-escape." The supers are piled up, a tent pitched on top and the bees seek other quarters whilst the apiarist busies himself elsewhere. He describes it fully in *Gleanings*.

In *Gleanings* Mr. G. M. Doolittle complains that questions are asked by beemen which could be answered by reference to any of the books on apicul-

ture. No man owning a colony of bees should be without Root's A.B.C., Cook's Manual or other work to study and for reference when occasion requires. He speaks warmly, yet too lightly, to the thoughtless who write to him personally asking for an answer to some question but never think of enclosing a stamp for reply.

An apiarist of Augusta, Ga., has taken 175 pounds of honey from one colony of Italian bees this season.

Mr. Forrest, of Weldon, Tex., writes to *Gleanings* complaining that grasshoppers eat his bees. Professor Cook thinks Mr. F. is mistaken.

A Michigan farmer heard that music would prevent bees from stinging, and he took his accordeon and went out and sat by a hive. Only 45 bees had got a show at him when he jumped into a lake.—*Advance.*

What is a fair premium for the best sample of *(a)* comb honey, *(b)* extracted, *(c)* largest display of both at a county fair asks a reader of Friend Root's paper. The average answer is $2, $2 and $5. The query brought out the information that many of the most practical bee-masters do not exhibit at the fairs.

P. G. Gress, M.D., Atchinson, Kan., had foul brood in his apiary three years since. "I saved them," he says to Friend Root, "by feeding carbolic acid and sugar syrup, but could not entirely eradicate it, for it broke out in the spring again." He found "corrosive sublimate to be the master of that germ. I can clean any colony in from four to six weeks and have my old queens yet in good shape without any foul brood." The mode of treatment is not given.

Time and again has it been asserted that the granulation of honey is, practically, a proof of its purity. We beg to differ. Two years ago, to test the matter we procured glucose and mixed it, in varying proportions, with honey, and we found that the mixture must be more than half glucose before it would remain liquid. Less than half glucose, and the mixture would granulate just as nice and clean as any honey we ever saw.—*Review.*

This year the pleurisy plant is the best honey yielder of them all. It has spread until there is no dearth and robbing when basswood closes. We see that the quality of the honey is excellent and the color about the same as white clover. It is standing full of seeds this season, and we believe that in the near future, it will be the best surplus honey producing plant we have in this locality, basswood and clover not excepted.—James Heddon in *Gleanings.*

Those who have occasion to use bee-veils a great deal should by all means have Carniolan queens. These bees to handle are almost as safe as though they were stingless. The bee-keeper can open the hives, shake the bees on the ground if he likes, blow them off the combs with his breath, and they will stand it all good-naturedly, making no attempt to fly or sting, and this without using smoke, veil or gloves, and when there is a dearth of honey too.—E. E. Ewing in *Gleanings.*

Let the farmer give his boy and girl a corner for a flower or vegetable garden and a colony of bees. It may tend to keep them on the farm, and strengthen their love for country life. It will not, in any case cost much, and may be the means of adding one less to the ever increasing number, who, without definite aim, crowd into the large cities, where, if no worse happens, independence and individuality are too often lost amid the whirl and excitement of the hurrying throng.—Mrs. Hill, Sheboyan Falls.

Sweeten your tea and coffee with extracted honey. It is a true brain and nerve food and tonic. It gives refreshment and nutriment to the mental and physicial exhaustion, and tired and confused brain; gives new life to the weak and debilitated, relieves nervousness from excess of any causes; improves the appetite, tones the system and has proven to be of great value in many diseases, producing a contraction of the muscles of the digestive organs, and as an aid to digestion it is wonderful in

building up lost power. It would be difficult to conceive of anything more nourishing and strengthening, creamy and delicious. For nursing mothers it is highly recommended. For lung and throat disease nothing can be better. It is a cheap remedy for the consumptive, and in fact it should take the place of sugar in many things.—J. W. Tefft in the *A. B. J.*

In the matter of sense organs we are met by serious difficulties of interpretation, and this difficulty is the more keenly felt in studying creatures so widely different from ourselves as the bee. Such an insect would seem at first start to be about as susceptible to the delicacies of touch as an ancient armour-sheathed knight. Head, thorax, abdomen, limbs, all are ensheathed in chitinous armor. The bee has his skeleton outside. The question is, how can delicate impressions of touch be transmitted through the tough, dense skin so as to effect the sensitive "squash" within? If you will examine one of the feelers of the bee you will see that the surface is richly supplied with hairs. It is by means of such sense hairs that the bee experiences a sensation of touch. Each touch hair is hollow, and within it is a protoplasmic filament containing, it would seem, the delicate terminal threadlet of a nerve. A curious modification of the touch hair is found on the last joint of the antennae. They are here bent sharply at right angles, so as to form rectangular hooklets.—*Murray's Magazine.*

This season has been a peculiar one, in regard to swarming. Usually, in this locality, the bees commence swarming in June and end up early in July. This year they commenced in May, and are swarming some yet. Heretofore, we used to return second, or very late, undesirable swarms by looking over the combs of the swarming colony and removing all the queen cells and hiving the swarm back in the old hive. We lately hit upon a new wrinkle with the new hive. Now when a late swarm comes out that we do not want to hive separately, or have any weak or queenless colonies to boom up, we simply invert the hive that casts the swarm, and return the bees by shaking them on the sheet in front of the hive. So far this has worked nicely, and not one has made a second attempt to swarm. This process, of course, turns the queen-cells (the cause of bees swarming) wrong side up, and the bees immediately tear them out. If this proves to be the invariable result of inverting, this is another point in favor of invertible hives. —Mr C. H. Dibbern in the *Western Plowman.*

We lately broke up a case of robbing in a very neat way. Going out into the apiary quite early one morning we noticed a colony that seemed to be working with unusual energy. In looking around a little further we soon discovered another colony that was evidently being robbed. Concluding that this last one had lost their queen, we removed it to the shop and examined them, and soon found that to be the fact. We now procured the comb from a nucleus (it is well to have a few such at all times) containing bees, brood and a queen. We exchanged this frame for one of the queenless hives. We now returned this hive to the place of the one doing the robbing, which was removed to the stand of the one that was being robbed. This, of course, threw the robbing business into great confusion. Those trying to rob would simply go into their own hives; if any returned, they only carried the honey back to the hive they had previously robbed. An hour afterwards, all was quiet, and the robbing was completely stopped, and both colonies resumed their honest toils.—Mr. C. H. Dibbern, in the *Western Plowman.*

Read the grand array of premiums offered on page 535 of this issue.

Governmental Report for 1887.

ON February 8th of the current year the Bureau of Industries of Ontario sent out three thousand schedules of the queries suggested by the O. B. K. A., with a view to ascertaining the provincial product of the apiary. Of the replies only 651 were sufficiently complete to admit of their being used for the tabulation purposes. The sub-

joined table is published in the report of the Bureau just issued for 1887.

Districts.		No. of Returns.	No. of Colonies. Put into winter quarters in the fall of 1886.	No. of Colonies. With which season of 1887 opened	No. of Colonies. Increase in 1887.	No. of Colonies. Put into winter quarters in the fall of 1887.	Produce of Season. Comb Honey.	Produce of Season. Extracted Honey	Produce of Season. Wax.	Value of Honey and Wax Produced.
							lb.	lb.	lb.	$
Lake Erie	agg.	91	2,463	1,886	1,471	3,094	17,961	45,660	679	7,496 02
	av.		27.1	20.7	16.2	34.0	197	502	9.7	82 40
Lake Huron	agg.	95	2,023	1,613	1,479	2,850	9,208	71,205	664	7,903 27
	av.		21.3	17.0	16.6	30.0	97	750	7.0	88 19
Georgian Bay	agg.	58	1,454	1,055	1,017	1,956	7,163	49,262	659	6,062 36
	av.		25.1	18.2	17.5	33.8	124	849	11.4	104 62
West Midland	agg.	157	4,852	3,874	2,437	5,921	20,458	125,999	1,280	15,709 03
	av.		31.1	24.7	15.5	37.7	130	803	8.2	100 06
Lake Ontario	agg.	133	4,442	3,435	2,264	5,396	37,217	121,741	1,533	17,968 22
	av.		33.4	25.8	17.0	40.6	280	915	11.5	135 10
St. Lawrence and Ottawa	agg.	76	2,565	1,916	1,590	3,275	16,085	51,097	1,160	7,961 61
	av.		38.8	25.2	20.9	43.1	212	672	15.3	104 76
East Midland	agg.	28	987	644	457	1,046	3,699	27,249	439	2,956 06
	av.		35.3	23.0	16.3	37.4	132	973	15.3	105 45
Northern Districts	agg.	13	199	190	148	296	503	6,920	82	1,176 56
	av.		15.3	14.6	11.4	22.2	39	532	6.3	90 50
The Province	agg.	651	19,015	14,613	10,963	23,898	112,277	490,093	6,686	67,287 12
	av.		29.2	22.4	16.7	36.6	172	767	10.3	103 28

The statician, Mr. Blue, thus comments:

The 651 apiarists reporting put 19,015 hives into winter quarters in 1886, and began the spring of 1887 with but 14,613 or 4,402 hives less. The greater part of that decrease represents the colonies that died in the winter; a number of colonies were also bought or sold to trim up the apiary in the spring. By the fall of 1887, however, the total number of colonies ready for winter quarters had grown to 23,828, a clear increase of 9,215 in the season and 4,813 more than in the previous fall. The increase from new colonies in 1887 would have made the total for wintering larger but for the fact that "dwindling" and the drouth had weakened many of the hives to such an extent as to make doubling up a necessity in many cases. The average number of hives per apiary placed in winter quarters in 1886 was 29.2, while in 1887 it had increased to 36.6.

The total yield of honey reported for 1887 was 611,370 lbs.. of which 112,277 lbs. of about 18.3 per cent. was disposed of in the comb. The average per apiary was 939 lbs., or nearly 26 lbs. per hive, which is considered to be not more than half of the usual yield. The product of wax aggregated 6,686 lbs., or an average of 10.3 per bee-keeper. Wax is too valuable for foundation comb to be readily parted with by the apiarist, and the various ingenious methods for straining honey enable the bee-keeper to hold back the wax unless honey in the comb is specially desired. The average value of the honey and wax for each apiary was $103.28, the amount over the $100 representing the value of the wax.

The largest number of returns came from the West Midland group, and the next largest from the Lake Ontario counties. In the St. Lawrence and Ottawa counties the average number of hives per apiary is higher than that of any other group, being 43.1, and the Lake Ontario counties follow with an average of 40.6 colonies. The value of the product of honey and wax in the Lake Ontario group was $17.968.22, or fully double that of any of the groups except the West Midland, where it reached $15,709.03. In the Lake Erie group the provincial average value of $103.28 per hive fell to $82.40, while in the Lake Ontario counties it was $135.10.

The season of 1887 was one that apiarists will be likely to remember on account of the extraordinary effect of the drouth upon the yield of honey. The bees came through the winter in good condition generally, anything like severe winter-killing being reported from but two or three counties. The season opened early and swarming was unusually vigorous—"early and often" was the favorite description of correspondents. A few cases of foul brood were reported, but on the whole the condition of the bees was healthy. The hives were quickly stored with honey, but the drouth cut the season short. The white clover and linden blooms were soon over, and the bees were early without a foraging ground for nectar. As the season of buckwheat blossom was also shortened by the drouth the bees ceased making honey and began to draw upon their stores in the latter part of July. This enforced idleness from lack of opportunity to get sweets for honey kept alive many old bees that otherwise would have died from hard work or exposure, though there will probably be a heavy falling off in the spring. But to meet this, the queen, who ceased laying early, will after her long rest be likely to start laying earlier than usual in the spring, and will soon make up for any loss among the old bees. Experienced bee-keepers place the average net yield per colony, spring count, at 25 lbs.

From the Farmer and Dairyman.

ON THE SCALES.

TESTING THE STORING QUALITIES OF THE BEES FOR YEARS.

I HAVE had one of the best colonies in my apiary on a scale during the last six years, and in 1886 I marked down the amount gained for the day every night, and also kept a close watch on the amount of surplus honey stored, and from this I found that when bees gain from one to three pounds, about one-quarter of the gain is stored as surplus honey, and when the gain is from three to eight pounds, about one-half is stored as surplus honey, and from the record kept for this season, about two-thirds was stored as surplus honey. These experiments were all made for extracted honey.

But it seems to me that the rearing of brood would not have anything to do with the gain of a colony of bees, for if the bees did not feed the brood it would not gain in weight, and if they take the feed from within the hive, it would not get any heavier on account of the brood; but it would make a difference in the amount of surplus honey stored, and when bees gain from 10 to 16 pounds per day they will lose from three to five pounds during the night, and should the next two or three days be cool or rainy, so that the bees could not fly, the bees would lose about three pounds in the first 24 hours, two pounds in the second, one pound in the third and one-half pound in the fourth day.

This loss is caused by the evaporation of the honey, and I think it is nearly as great when bees gather honey as it is when they do not, so that this would make the actual weight carried in by the bees during the day from three to five pounds more than the scales would show by weighing the hive in the morning and again in the evening, and I believe that when bees gain at such rates the old ones wear out as fast as the young ones come on, for they fill up the brood-combs with honey as fast as the young bees hatch, so that the queen will not be able to find any empty cells to put any eggs in, especially when running for comb honey.

I believe there were one-fourth less flying, or working bees id my apiary, at the close of the honey season than there were when I first put the scales under the hive on July 28, and three-fourths less brood.

I think that it is a great help to have a hive placed on a scale during the honey season, for you can tell just what your bees are doing, and how fast you will have to get your sections ready to put on, how much more room they need, etc., from two to five days sooner than you would if you had no scales, and these few days would amount to several hundred pounds of honey for each day in an apiary of from 50 to 100 hives.

D. KAUFFMAN.

From Farm Stock and Home.

VENTILATION.

WHILE SUCH IS NECESSARY, IT MUST NOT BE MUCH.

A GREAT deal has been said about bees wintering without upward ventilation, and quite a number of bee-keepers claim that they winter better without any upward ventilation, saying: Bees in their natural state—in the trees of the forest—have no ventilation and winter well, and seem to do much better than those having the best of ventilation. We have found many swarms in the last thirty years in many kinds of trees, and in nearly every instance we found, either above or on the sides of the swarm, rotten wood which the perspiration of the bees could pass into, acting the same as upward ventilation. Some parties claim that they winter bees safely without upward ventilation, and that it is the proper way. If they will invert their hives and pour water into them, it will run out, therefore they are not air-tight, for where water will run through air will escape.

It is true, if bees are kept in a perfectly dry place and at a temperature of from 45° to 50°, they require much less ventilation than they would if kept in a damp, cold place. If bees are kept where it is continually freezing, and there is no place in the hive for the escapement of the perspiration that passes from the bees, it will commence to freeze on the outside of the hive; and if it continues cold you will find your bees dead, and ice formed all around the cluster of bees. Had there been a small opening at the top, or near the top of the hive, for the air to escape, nothing of the kind would have happened.

It only needs a very little upward ventilation for bees; a good many bee-keepers give altogether too much. They need all the heat in the winter and spring months that can be obtained. Give only what will be necessary to let the perspiration out, so that the hive will not become damp on the inside. It is a good plan to leave the bottom-board off, or raise it up on blocks one inch, when wintering, especially in cellars; as the foul air always settles, and if there is any dampness in the winter depository it will prevent the combs from moulding.

The heat and circulation of the cluster of bees render the combs dry for some distance around the cluster, but there is not enough of this circulation of air, nor force to drive it to all parts of

the brood chamber, and a part (often a very large part) of the comb that is damp with moisture extends up at the sides of the cluster to the top bees. This moisture gets into the honey and causes it to sour; and as the foul air is impure, gas rises on top of the brood-chamber, making the bees uneasy, and they begin to move about, use the sour honey (which causes the diarrhœa), and the destruction of the colony ensues. We are safe in saying that a colony of bees never was known to have the diarrhœa when the honey and combs were kept perfectly dry.

Those that winter their bees without proper ventilation are often heard to complain that their bees got restless and uneasy from being too warm. My experience has proven that it is not the warmth, but the fumes of the sour honey arising below and accumulating in the upper portions of the brood-chamber that makes them uneasy, and the removal of the tight cover on top of the hive at such a time will convince any person that proper ventilation is necessary to the health of the colony.

WM. UMRIE.

Minneapolis, Minn.

THE STING TROWEL THEORY.

ON page 48 of his Birds'-eye View of Bee-Keeping, the Rev. W. F. Clarke thus writes:

"When honey gathering bees with cheerful hum
Will do the work they understand so well,
And store sweet nectar in each vacant cell,
Smoothing and polishing the surface all
With that small trowel we a dagger call,
And which by them employed so much is
In giving honey comb its final touches.

This assertion of friend Clarke's has been challenged, and a recent issue of the *A. B. J.* contained numerous answers to a query regarding it.

Professor Cook says: I think that idea is a myth. There is formic acid in the honey, which is doubtless the result of digsstion. How do the stingless bees of hot climates acidulate their honey?

A. B. Mason: My "idea" is that I never saw it done, and that I do not believe it is done. * * * * If formic acid has to be put into honey to prevent its fermenting, when is it put in honey that is extracted before being capped?

G. W. Demaree: There is not a shadow of truth about it. Honey contains more or less of formic acid, but it gets there by absorption from the effluvium rising from the heated cluster of bees. Perhaps this is a wise provision of nature—certainly it is the most natural process by which such an end could be accomplished.

Eugene Secor declares it a "grand humbug," and J. M. Shuck inclines to the belief that "the acid formed in honey is developed and incorporated with the honey in the honey stomach, and tends to preserve the nectar till it ripens, rather than after it is evaporated and sealed."

Dr. C. C. Miller in the last issue of the same periodical writes strongly and says: That bees ever use their stings to work wax, I believe is just as untrue as that artificial comb honey is made, and yet this error had its origin entirely among bee-keepers. It is true that it is not like the Wiley affair in mischievous tendency, and I do not suppose Mr. Clarke would have made the statement he did if he had known mischief would arise from it; still he was far from warranted in putting forth as an ascertained fact that which was a mere play of his imagination. I do not believe he ever had any proof that his fancy was a fact, and I confess I would very much like to see Mr. Clarke himself the first one to give the "sting trowel" its quietus. I would like this for the sake of the truth, and also for the sake of Mr. Clarke as well.

From the British Bee Journal.

BIRDS AND BEES.

I AM surprised that any bee-keepers should have doubted that martins as well as swallows and sparrows are most destructive to bees. From my own observation I should say there is not a pin to choose between them, though sparrows are far the boldest. The other day I saw an old cock sparrow catch five bees on the wing in two minutes; he sat on the top of the hive and pounced at them as they came home, but I have never seen them eat *drones*. When the ground was covered with the dead and dying the sparrows carefully picked out live workers, while the swallows and martins (chiefly the former) scud after the bees as they come home before a shower, and catch hundreds on the wing, and when a swarm has turned out they will fly backwards and forwards through the cloud of bees. I have seen this times out of number.

W. E. BURKITT.

Buttermere Rectory, Aug. 31, 1888.

From the London Free Press.

THE HONEY CROP.

THE honey crop in given latitudes, and on certain isothermal lines all the way from the Atlantic to the Pacific is poor this year. From Gaspe to Sandwich, from Maine to California, and even extending to the British Isles and the northern part of France

the same accounts arrive that the honey crop is short. In this country there has been, as far as herbage is concerned, a favorable outlook. But it appears under certain atmospheric conditions that bees will not work, or extract the nectar from the pistils of the different flowers. The bees get lazy and won't work. But it is strange that whilst tame or skep bees this season have been behind there is no evidence but that bees in a wild state have produced a normal quantity of honey. And hence it is inferred that tame bees get reduced in physical stamina by artificial feeding and unnatural conditions, and are not capable of extracting the honeyed juices from the plant. Darwin and Sir John Lubbock have both referred to this question of bees under domestication, and have shown that, like other animals (in the generic sense) and plants, that a gradual deterioration takes place. It appears that colonies of bees that have not been stocked up by the introduction of fresh blood have been the first to fall through in their honey making capacities. Apiarists should continually be importing new queens as far away from this latitude as possible. Like any other class of animal or plant, bees run out unless new blood is continually introduced. Although atmospheric conditions may certainly influence the actions of this insect, the probabilities are that artificial feeding and cultivation has degenerated the race, and their physical powers have been reduced. Bee-keeping has become prominent as one of our rural industries, and Ontario will lose to a great extent in the yield of the honey crop. A well known apiarist in this district advises the continual importation of new queens from Italy and the Mediterranean Islands in order to keep up the physical strength of the stock. And also recommends that less artificial food be given in the way of sugar, etc. On the whole Ontario will be behind in the honey yield several thousand dollars, as the yield will not approach within 50 per cent. of last year's turnout.

From the Iowa Homestead.

Putting in Winter Quarters Early.

I SEE it is advised by some writers not to put bees into winter repositories until cold, freezing weather. This, I think, cannot be endorsed by practical bee-keepers, although we know of bees that wintered under these circumstances. Yet I call it bad economy. It may be advisable to avoid long confinement, as I see it very often advised to give bees a fly when the weather will permit during the winter. This I do not approve of as bees can be kept in a good repository for a much longer time than is required in this climate and kept in good condition.

To winter bees well they should be put in the winter quarters before frost gets in the hive, be it the first of November or the last. I had two colonies put in on the 24th day of October and weighed. The very same day I also weighed twenty colonies and left them on their summer stands. On the 16th day of November I weighed them again, and put them in the repository. I found that they consumed on the average three pounds to the colony, while the two in the repository only consumed one pound. On the whole number I lost 160 pounds of honey on those I left on the summer stands; or, in other words, I would have saved 160 pounds of honey if I had put them all in on October 24. Bees are very light in stores, and placing them in winter quarters early may save many a colony. To keep them in long confinement, these three points are necessary: First, place them in the repository before the frost gets in the hive, or approach of cold weather; second, the temperature should be kept at 40 or 50 degrees above zero, either by natural or artificial heat (mine is naturally); third, they must never be so disturbed as to break their cluster when in winter quiet or hibernated.

From Gleanings.

The Howard Comb-Filler.

DISPENSING WITH A FEEDER.

SOME time ago, perhaps you will remember, friend Miller described his method of filling combs with syrup, the same to be afterward placed in the hive. Our attention has been called recently to Howard's comb-filler, invented by Mr. J. H. Howard, of Holme, Peterboro, England.

It is simply a syrup-tight box, into which a comb of the proper size can be placed. The lid is made removable, so that the combs may be taken out and replaced as fast as they are filled. In the circular sent which accompanies the illustration, Mr. Howard says that the frame is placed in the box, and that the syrup, warmed 15 degrees above the surrounding temperature, is poured around the comb until within an inch of the top-bar. The cover is then adjusted, and some some half-dozen up-and-down jerky motions cause the comb to be filled with three or four pounds of stores, according to its capacity. After this the frame is taken out and placed in a suitable box to drain. A wet sponge is then used to wipe off the surface of the comb so that it will be free from all drippings. As soon as the sponge is filled with syrup, it is

squeezed, and the contents allowed to run back into the comb-filler.

We can not now speak from experience as to the practical workings of this comb-filler. We simply call attention to it, as it may contain an idea worth developing here in America.

From the Prairie Farmer.

BEES AS EDUCATORS.

EDUCATED EYES.

NO sooner does a person beoome the owner of a colony of bees than he looks around to see what are the prospects of future gain. Heretofore he drove or rode along the highways, noticing the ruts, bridges, fences and houses, but now his vision takes in a wider range. His observation is quickened, and trees, shrubs and plants have put on new life, as it were, to his snlivened faculties. From the first opening buds in spring, until the last rustling leaf has fallen, his interest never lags, as he constantly watches the opening flowers, and notes with pleasure the busy workers roaming over them in quest of treasure to store in their hives.

NECTAR IN WEEDS.

What was to him once a useless weed, to be cut down with the scythe, or whacked off with a hoe, is clothed in beauty, and becomes a priceless treasure. Whoever saw any beauty in the figwort, or watched for the appearance of its tiny cupboard, looked down into their depths for the first appearance of sparkling nectar, but a bee-keeper? Or whoever saw any utility in Spanish needles, or beggar-ticks? There is a bond of friendship existing between the bee-keeper and nectar-bearing plants, and they appear to spring up to greet him wherever he goes. The Indian calls white clover "The White Man's Foot," and well he may, for its modest flower soon appears as the harbinger of peace and plenty.

SOILS.

The interest thus awakened in plants soon takes on a wider range, and extends to the soil. Seeds of sweet clover (melilot) are scattered on gravelly soil, take root, penetrating deeply, keep it from washing and dying and add to its fertility. Dreary wastes thus become clothed with verdure, adding to the beauty of the landscape and yielding choice nectar, fit food for gods. On a recent trip of a dozen miles on a railroad leading out from this city, we were agreeably surprised to find this plant growing luxuriantly nearly the whole distance, and some deep cuts were so covered with it that the soil could not be seen. It is to be hoped that the officers of railroads will appreciate the utility of this plant in keeping the soil from washing away and prevent damage and danger thereby, and foster its growth. I have seen the yellow variety of this plant growing on the borders of salt marshes on the shores of Long Island Sound.

MOISTURE.

Marshes and wet lands along rivers and water-courses come in for a share of attention by the bee-keeper. His eye quickly detects anything in the interest of his winged stock. If by digging a ditch and running off water the growth of favorite bee-plants is promoted, it is done. He then benefits his neighbors as well as himself, for, as the ground becomes dry, blue-grass and the clovers will take root, thus promoting grazing for stock, and malaria will disappear. New plants will spring up as if by magic, the button-bush (Cephalanthus occidentalis) growing in water. It seems as if the seeds of honey-plants rattled from the bee-keeper's clothes. The seed of many honey plants is food for birds, which are our friends and co-workers in destroying many noxious insects.

EDUCATED EARS.

As seeing is cultivated by bee-culture, so is hearing—even all the senses are quickened, much better than they can be in a kindergarten. How soon the trained ear discovers the note of the robber, the sound of swarming, the piping of queens, the happy hum of plenty, or the sorrowful moan when the queen the queen is lost. The sense of smell reveals the blooming of apples, as also the opening of the fragrant basswood, buckwheat, etc., and reveals the presence of that dire calamity, foul brood.

MRS. L. HARRISON.

From the Bee-Keepers' Review

Ventilation of Bee-Hives and Cellars in Winter.

THIS is a subject upon which we know very little, and it is with the hope of learning something that we propose to make it the subject of special discussion in the October *Review*. It is very difficult to find anyone who knows anything positively upon this subject. In the February *Review* Mr. Boomhower gives an account that seems to indicate that a bee-cellar can be ventilated too much for the good of the bees. Mr. Oliver Foster, of Iowa, in discussing this subject privately with us a year or two ago, said that he had abandoned sub-earth ventilation on account of expense and uselessness. When we were discussing temperature last February in the *Review*, Mr. H. R. Broadman wrote us that he wondered we did

not take up ventilation in connection with temperature. He gave us a most excellent article on temperature, so we shall look forward with interest to see what he has to offer on ventilation. When Mr. Heddon built his bee-cellar two or three years ago he went to considerable trouble, by way of correspondence, to learn if anybody knew positively that sub-earth ventilation was necessary, if it was worth the expense. His cellar was built without sub-earth ventilation. When first built our own cellar had no ventilation. There was so much talk about sub-earth ventilation that we finally put down 100 feet of six-inch tile, and had a pipe extend from near the cellar bottom up through the floor and connect with the kitchen stove-pipe. As a result the air in the cellar had a fresher, more wholesome smell, but the bees wintered no better, neither did they winter any worse. In very cold weather we were obliged to close the openings and stop ventilation, or the temperature would run down too low. If the sub-earth ventilator had been long enough this probably would have been unnecessary. There is one form of ventilation, however, that has given excellent results. Perhaps it does not come strictly under the head of ventilation. We have reference to raising the hive from the bottom board. It allows the dead bees to drop away from the cluster where they dry up instead of becoming moist and mouldy from contact with the living cluster. The bees have room and hang in a cluster beneath the combs, while the ventilation, so far as the inside of the hive is concerned, is perfect. Perhaps ventilation has nothing to do with it, and perhaps it has, but we do know that colonies so treated came through very nice, dry and clean with clean combs and hives. As being in this line we might mention that A. G. Hill, of the *Guide*, has been very successful in wintering bees out of doors and attributes his success, in a measure, to an opening four inches square cut in the bottom of each hive. Dr. C. C. Miller, we believe, approves of sub-earth ventilation, especially does he find it valuable in keeping the bees quiet as spring approaches. Mr. Cheshire says that the air in a bee-hive must be changed 2,400 times during the consumption of one and one-half pounds of honey. This amount of food would last a well protected colony about six weeks, and the air in the hive would require a complete change every thirty minutes. It is evident that Mr. Cheshire has made a mistake somewhere. Bees have been successfully wintered in clamps, buried two feet deep under frozen soil, while Professor Cook even went so far as to hermetically seal up two colonies by throwing water over the hives and allowing it to freeze, thus forming a coating of ice over the hives. The bees survived this treatment. Mr. Heddon tells of some man who, wishing to "take up" some of his colonies, plastered up the entrances with blue clay, hoping to kill the bees by suffocation. Upon opening the hive a few days later, imagine the discomfiture of their owner at seeing the bees fly right merrily. Unless our memory is at fault, D. L. Adair, a number of years ago, removed a box of surplus honey from a hive, and leaving the bees in possession, pasted several layers of paper over the entrance to the box. As all the cracks and crevices were sealed with propolis, the box was practically air tight. The bees were kept confined several days, and did not, apparently, suffer for want of air. There is a time, however, when bees must have air, and that is when under excitement, as when they swarm or are being confined for shipment. It would certainly seem that an abundance of pure air could do no harm at any time, although Mr. C. J. Robinson, of N. Y., has advanced the idea that a lessened quantity of oxygen may be beneficial in that bees will live slower, so to speak; that the hibernation will be all the more perfect because of the lack of oxygen.

After winter has set in and the bees are in winter quarters, it is difficult to make changes in regard to ventilation, hence we have taken up this topic now in order to determine, if possible, to what extent ventilation has a bearing upon the wintering of bees, and that we may be in readiness to work understandingly when winter approaches. We know, of course, that bees must have some air, and we wish correspondents would tell us what ventilation is needed in regard to the hives themselves, whether in doors or out. Next, we would like to have it decided whether bee-cellars need any special ventilation, and, if so, in what manner can this ventilation be secured. We should also like to know if the size of the cellar or the number of colonies it contains has any bearing upon the question, and if so, what.

From the British Bee Journal.

LESSONS OF 1888.

DOUBTLESS very many will firmly resolve to have nothing further to do with bee-keeping, because at present they find the cash balance on the wrong side. To most of these faint-hearted ones we expect we must say farewell. It is far from pleasant to part with any who have at any time belonged to our ranks, and would impress upon such that nothing makes success so sweet or so well deserved as a previous repulse.

Tg those who, more constant to their old love, are determined to bid for success in future years, we would offer a few hints which may assist them onwards. The great variation between 1887 and 1888 has shown up most effectually any structural deiects in hives. Bad work now stands self-condemned, and honest manufacturers must rejoice thereat. No doubt in the early days of the present era, very high prices were charged for appliances, but then it must be remembered that the demand was comparatively small. Recently the rage has been for cheapness, and we would not deprecate this craving so long as there is a fair margin of profit left for

the maker as shall enable him to live and pay 20s. in the pound. Those commencing bee-keeping are apt to consult the various catalogues and select the lowest priced hive they can find quoted. This is a serious mistake. Better have one stock well and comfortably housed than a number dwelling in badly-made hives that will not keep out either wet or cold. Good hives are to be had at a very reasonable price, and it is certain that if bees cannot be made a success in good hives they never will in bad ones. Under no circumstances have a hive that does not provide for keeping the inmates *warm*. Bees in a cold hive will not be so strong by the middle of April as one in a warm hive on the 21st March if we have our usual cold spring weather, and in a season like the present this means success or failuse, according as our stocks are ready or all behind.

In feeding we are much afraid many of our readers are still failing to get the full benefit they might have. To many it may seem too much trouble, and, in fact, almost needless to continue to feed so far into the season as is sometimes necessary; but we have now in view a good sized apiary of over sixty colonies, having a fair average location, which, owing to neglect of feeding in the spring, has, up to the present, yielded only about forty pounds of super honey. Nothing was wanting except judicious feeding to have insured a good harvest of clover honey, there being abundance of good clover close at home; but, although the warning was given more than once, it was neglected, and then, during the few days the weather remained favorable, although the bees did their best, they could not yield a good return. Did the mischief and loss end here, it would not be so bad, but during the sudden bursts of high temperature, robbing has occurred, and some stocks have succumbed, while those still alive will require very heavy feeding to keep them alive through the winter. Surely three such seasons as we have just passed through should impress upon every one that feeding is one of the most vital necessities as regards the well-being of our stocks. We acknowledge this with regard to every other living thing we keep, then why not with our bees? Is it our greed lest we lose a pound or two of honey? If so our very greed is defeating our own desire. If from carelessness, then we deserve our non-success, and should at once cease to be apiarians, or mend our ways from this day. Excuse we have none.

From the American Bee Journal.

FOUL BROOD CURE.

THE SULPHURIC ACID AND OTHER METHODS.

MR. Stachelhausen recommends carbolic acid mixed with wood-coal and tar. He puts this on felt paper in the hive on the bottom board, and moistens the front at the entrance with it about twice a week. He disinfects every hive in the yard whether diseased or not diseased. The vapor of this stuff, he says, will prevent the spread of the disease from four to six months. After this is done, he commences to cure the diseased colonies, by feeding every diseased one with medicated syrup, as Mr. Muth has recommended.

Mr. Cheshire recommends carbolic acid, one part to 500 parts of syrup, and he has cured foul brood by feeding it to diseased bees.

I prefer sulphuric acid when mixed one part to 700 parts of syrup, and fed to the bees; because the cure is easier, quicker and cheaper. The price of one ounce of salicylic acid is 50 cents, one pint of the best quality of alcohol cost 90 cents—in all $1.40. Now one ounce sulphuric acid costs only from 5 to 10 cents, and the curative effect will go as far as the other acids do. With little expense and little labor I cured my foul broody bees in Germany in 1838 (50 years ago), and I think that I can do it yet; because there is no difference between foul brood in Germany and in America.

Several prominent bee-keepers have recommended to give the foul bees a new, clean hive with foundation; treat them as a new swarm, and burn the combs of the foul brood. I have no doubt that foul brood can be cured by this method, but it seems to me unnecessary, and it is doubtful to me that the cures by burning, spraying and starvation would pay.

GERD WENDELKEN.

Marietta, O., Sept. 1, 1888.

SUNDRY SELECTIONS.

LLOYD HILL.—From 80 hives, strong the season through, have not taken more than 400 lbs. comb honey.

Titusville, Pa.

C. W. GALE.—This season has been a hard one for honey here. Have lost eighteen colonies since I put my bees into the cellar last fall. Have 14 now and shall not take more than 100 lbs. of box honey.

Jefferson, Ky.

JOHN HANBRIDGE.—Wintered three colonies and had only one swarm this summer. Will require to feed all the honey gathered and some sugar to keep them through the winter. I think something should be done to keep the price of honey above 10 cents per pound, for I don't think, taking one year with another, that it can be produced at that money with a living profit.

Everton, Ont.

JOHN H. PEARCE.—There has been very little honey gathered in this section. I have eighty colonies and I may have ten pounds to the colony. There was no honey till linden and it only lasted ten days. Since that till now it has been too dry and it is getting too late for any more fall honey. We had no rain until last Saturday and I think you can put mine in "Blasted Hopes."

Wallabetown,

DETROIT HONEY MARKET.

Best new white comb, quoted at 15 and 16 cts., with little in market and few sales. The price is too low for the limited supply, and those having any to dispose of will do well to await a better demand. Beeswax now quoted at 21 & 22 cents.

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For some time past we have filled all orders for queens by return mail. We have a good supply on hand, especially of Carniolan crosses, which will be sold at 20% discount where two or more are ordered at one time.

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The following premiums are now offered to readers of the CANADIAN BEE JOURNAL. We have made special arrangements for the purchase of these articles, and are in a position to make the offer we do. One dollar must be sent with every name that is sent in, though they do not need to be sent all at one time, nor from one post office. The subscribers may be either new or old. If working for any of these premiums, the person so doing must advise us of the fact when they send in the first names. All articles which have to be sent by freight or express, will be sent, charges to be paid by recipient:

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One copy Heddon's Success in bee culture	50
" " Hutchinson's *Review*, one year	50

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One copy Miller's, Year among the Bees.	75
" Automatic Fountain Pen.....	75

FOUR NAMES WITH $4—

One copy Cook's Manual.....	$ 1 25
" " A.B.C.—Root.....	1 25
" " W'kly *Globe* to 31st Dec. 1889.	1 00
" " " *Mail* " " "	1 00
" " " *Empire* " " "	1 00
" " " *Western Advertiser*	1 00
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One No. 1 Wax Extractor.....	4 00
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1000 Sections—one piece—any size.....	4 50
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One Ripening Can.....	4 50
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Seven Combination Hives, fitted up for extracted honey, with second story..	6 30
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One Farmers' Union or Family Scale, ½ oz. to 240 lbs.....	8 00
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10 Combination Hives, for comb honey.	9 00
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One Union or Family Scale, 240 lbs. with tin scoop.....	10 45

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3000 Sections—one piece—any size.....	13 00

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Two Colonies Bees with good queens....	16 00

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6 lb Bees and 6 good mated Queens, $10.00
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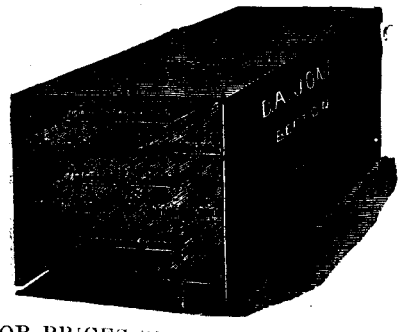
t.f. BEETON.

LOOK HERE !

Nickel plated pen and pencil stamp, with name 30c.; Nickel plated stamp with name, 20c ; Black walnut handle with name on, 15c.; Your name in rubber or any of the above sent post paid on receipt of price. Clubs amounting to $1 20 sent for $1. Boys and girls can make money canvassing for these stamps Every school boy and girl should have a pen and pencil stamp. It contains a pen, lead pencil and stamp for printing your name on your books, etc. Write your name plainly. Remember you have no duty to pay on these stamps when you deal with us

Gem Rubber Stamp Co.,
MALAKOFF, ONT

FEEDERS.



FOR PRICES SEE OUR CATALOGUE, WHICH WILL BE SENT FREE TO ANY ADDRESS.

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

1-LB. GLASS JARS.
SCREW TOP.

We are just advised of shipment from the factory of the first instalment of 50 gross of the above. They are put up in barrels and hogsheads, (the latter for our own local use), and to save breaking bulk when shipping, we append below a table, of the qualities of which the shipment consists, together with the prices per barrel. In estimating the price, we have calculated the same as for full gross lots, an allowance of 20 cents being made for each barrel and packing (they cost us 35 cents).

No. of Barrels.	No. of Doz.	Prices.
1	8½	$ 6 25
1	8¾	6 45
4	9¼	6 75
5	9½	6 95
4	9¾	7 15
3	10	7 35
3	10¼	7 55
2	10½	7 75
1	11½	8 45

The D. A. Jones Co., d.
BEETON, ONT.

ADVANCE IN NAILS.

Owing to a rise in the prices of nails, we are forced to advance our prices somewhat, as will be seen by the following list. All orders will be filled only at these prices.

PRICES OF WIRE NAILS.

Length of Nails.	No. in Pound	Size Wire	Price of 1 Pound	Price of 10 lbs.
⅝ & ½ inch	7200	21	22	2 00
¾ inch....	5000	20	17	1 60
⅞ inch ...	3880	10	17	1 60
1 inch....	2069	18	12	1 05
1¼ inch...	1247	17	11	1 00
1½ inch...	761	16	10	90
2 inch....	350	14	9	80
2½ inch...	214	13	9	75
3 inch....	137	12	8	70

PRICES OF BOX OR HIVE NAILS.

	Per lb.	Per 10 lbs.	Per 100 lbs.
1¾ inch.....	7	65	6 00
2 inch.....	6½	60	5 50
2½ inch.....	6	55	5 25
3 inch.....	6	55	5 25

THE D. A. JONES CO., Ld.

USEFUL GOODS.

The following is a partial list of small wares, tools and stationery, which we carry in stock. Additions are constantly being made. We buy in very large quantities, and are therefore able to quote rock bottom prices. There is always something in these lines you want and they can be enclosed with other goods or sent by mail. The amount of postage is marked opposite each article, except those excluded from the mail.

5 CENT ARTICLES.

Postage.		Per 10 lots.	Per 25 lots.
3	Awls, brad, three assorted without handles		
1	Blotting paper, 10 sheets note size	40	88
3	Bag for school books	45	1 05
2	Brush, round, for paint, paste or varnish	40	95
1	Chisel handle	45	1 10
8	Crayons, colored drawing	45	1 00
1	Eraser combined ink and pencil	45	
1	Letter openers, nickle plated, very handy	40	
1	Memo books, 32 pages, stiff cover	40	90
1	Note paper, 1 quire, extra quality, ruled or plain	40	80
2	Pad 100 sheets scribbling paper	45	
1	Pass books 3 "Railroad" 16 p. paper cover	45	1 00
1	Pass books, 2 Steamboat 32 p p.	45	1 00
1	Penholders 2, cherry, swell	40	
1	Ruler, hardwood, flat, graduated to ⅛, bevelled	45	1 05
1	Ruler, for school children, three for 5c		
2	Scribbling books, 200 pages	40	90
	Tacks, cut, 2 papers 1, 2 or 3 oz.	45	

8 CENT ARTICLES.

	Butter stamps 3 or 4 inches	$ 75	$1 75
	File, 3 corner, 3 or 4 inches	75	1 75
	Ink-well, glass, safety, cannot spill	65	
	Mucilage, good sized bottle	70	
	Oil cans, zinc	65	
1	Pencil, automatic indelible	75	1 75
6	1 doz. Lead Pencils, No. 852, very good		
1	Time books for week or month.	75	

10 CENT GOODS.

2	Bill fyles, harpshape	$ 90	2 10
2	Book of 50 blank receipts with stub	85	2 00
2	Book of 50 blank notes	85	2 00
3	Brush, flat, for paint, paste or varnish	80	1 90
2	Butter spades 9c. each	80	1 90
	Boxwood pocket 1 foot rule	90	2 10
	Chisel, firmer ½ inch	90	
2	Clips for holding letters, etc	90	2 00
	Due bills, 100 in book with stub	85	1 80
2	Envelopes, 3 packages, white, good, business	95	
2	Files, 3 cornered, 5 inch	90	2 10
3	Lead pencils, 1 doz. plain cedar Fabers 581	90	
2	Lead pencils 3 red and blue	90	
2	Note heads, pads of 100 sheets.. Paint brush, No. 7	90	
2	Pocket note book, 3x5 in., 125 pages, stiff cover with band grand value	90	
1	Rubber bands, five, large	80	
1	Ruler, brass edged, flat, hardwood, bevelled, graduated to ⅛ inch	95	2 25
4	School bag, medium size	90	2 10
	Tacks, cut, ⅓ packages, 4 oz	90	

13 CENT ARTICLES.

2	Belt punches, Nos. 2, 3, 4, and 5	1 25	$3 00
	File, 6 inches long, flat	1 25	2 90
	" 5 " " round	1 25	2 90
	Shoe knives, 4 inch blade	1 20	2 75

15 CENT ARTICLES.

	Chisel, firmer, ½ and ¾ in	1 45	
12	Dextrine, ½ lb. pkge. for pasting		
	Glue, 1 lb. ordinary	1 30	
	Hammer, iron, adze eye	1 45	
3	Lead pencils, 1 doz., good quality, Faber's 971		
5	Note paper, 5 quires, 3 lbs., extra value	1 40	3 35
	Paint brush, No. 5		
6	Rubber bands in gross boxes. For queen nursery	1 30	
4	Rule, 2 foot, a splendid line	1 40	3 40
	Screw driver, 5 inch, round bit, hardwood handle	1 40	
2	Statement heads in pads of 100	1 20	
	Tack hammers, magnetic	1 40	3 30
12	Papeterie, 24 sheets fine note paper and 24 square envelopes in neat box	1 40	3 35

18 CENT ARTICLES.

	Bit, best make, ¼, ½, ¾	1 65	4 00
	Glue, LePage's liquid, with brush	1 65	
	Oilers, automatic	1	

20 CENT ARTICLES.

	Postage.	Per 10 lots.	Per 25 lots.
	Bit, best make, ⅝, 7/16, ½, 9/16..	1 90	4 50
	Brass traps.....	1 85	4 50
	Brushes, flat, 2nd quality, 1½ in. paste or varnish.....	1 80	4 25
	Chisel, firmer, inch.....	1 90	
	Ebony ruler, bevelled for book-keeper.....	1 90	4 50
	File, 8 inch, flat, round or 3 corner.....	1 90	
	Glue, 1 lb. light, broken.....	1 75	
8	Lead pencils, 1 doz. 201 good value, rubber tipped.....	1 80	
	Paint brush, No. 3.....		
12	Papeterie, "Jubilee" containing 24 sheets, ivory notes, 24 square envelopes.....	1 80	
6	Pens, gross box "292 school"...	1 80	
1	Pocket memo book, indexed....	1 90	
	Screw-driver, steel, 6 inch rd bit	1 90	
	Square, iron, grad. to ⅛ one side	1 90	
	Thermometer.....		

25 CENT ARTICLES.

36	Cards, 50, ladies' or gents' visiting. Piries' super ivory...	2 00	4 50
2	Duplicate order books, with black leaf.....	2 00	4 50
	File, 10 inch, flat.....	2 25	
3	Lead pencils, 1 doz. Faber's H, H. B., B. or B. B.....	2 30	
	Paint brush No 1.....		
	Rule, 2 foot, boxwood.....	2 30	
	Tape Lines, "Universal," 3 ft..	2 30	

30 CENT ARTICLES.

3	Bills payable and receivable....	2 85	6 90
	Bits, best make, 10/16, ¾, ⅞.....	2 85	6 90
	250 Envelopes, Ladies', square.		
5	Foolscap, 2 quires, extra quality	2 80	
4	" legal, in pads of 100 sheets.....	2 75	6 00
	Inkwell, square, glass, bevelled edges.....	2 75	

35 CENT ARTICLES.

	Bit, best make, inch.....	3 40	8 20
	Hammer, steel face, for light work.....	3 30	
	Square, grad. to 1/16 both sides	3 30	

40 CENT ARTICLES.

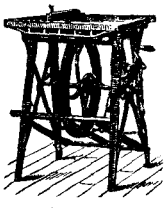
Foolscap, 5 quires, good quality	3 75	
Hammer, No. 50, steel head, adze eye.....	3 60	
Pens, gross box, 'Bank of Eng.'	3 80	
" " Blackstone or J. S.	3 80	
Ruler, 2 foot, boxwood, brass bound.....	3 60	

50 CENT ARTICLES.

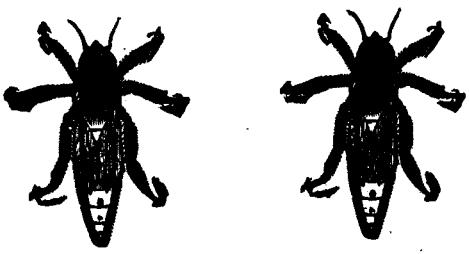
Binders, CANADIAN BEE JOURNAL	4 80	
Blank books—.....		
Day book, 200 p. p. good paper, well bound.....	4 25	
Cash " " "	4 25	

Postage.	Per 10 lots.	Per 25 lots.
Ledger " " "	4 25	
Minute " " "	4 25	
Complete set, Cash, Day and Ledger, $1.25.....		
200 page Day Book, canvas cover good paper, exceptionally low		
Carpenter's brace, pat. grip, 8 in	4 85	12 00
Envelopes, good, business size, 250 in box.....	4 00	
250 Envelopes, Ladies' square, very goods.....		
Hand saws, 18 and 20 in., best make.....	4 50	
Hammer, No. 51, steel head, adze eye.....	4 50	
Hammer, smaller, frame nail'g	4 50	

SUNDRIES.

	Each
Automatic Fountain Pen, the finest thing out; holds enough ink to last a week; always ready; can use any style of pen that suits you, and can change it as often as you wish—a marvel of cheapness—by mail, post paid, each.....	75
 Barnes' Foot Power Machinery—We are agents for these in Canada, and can furnish the Combined Machine delivered in Toronto, freight and duty paid for..... We will gladly forward descriptive Catalogue & price list on application.	60 00
Copying press, "The Simplex," the most rapid and the easiest handled. Folds like a book and weighs but 10 lbs. With lock, $5, without....	$4 50
Hammer, No. 47, steel head, adze eye a most substantial implement.....	60
Hand saw, 26 inch, finest quality.....	55
Hatchet, steel, with hammer and nail puller.....	65
Lawn Mowers—The new Philadelphia pattern, as made by the Gowdy Mfg. Co., Guelph, at prices as follows:—	
10 inch cut.....	5 75
12 "	6 25
14 "	6 50
16 "	7 25
We ship these direct from the factory at above figures.	
Letter books, with index, bound in canvas, 500 pages.....	1 10
Letter books, with index, bound in canvass, 1000 pages.....	2 00
Plane, iron block.....	75
" wood smoothing.....	80
Post cards printed to order, 50 $1, 100	1 40
Square, steel, grad. both sides, usual price, $1.75.....	1 35
Soldering outfit, consisting of soldering iron, scraper, bar of powdered resin.....	75

QUEENS.



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

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

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

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

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

EXPLANATIONS.

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

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

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

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

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

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

BEES.

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

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

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

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

BEES BY THE POUND.

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

NUCLEI.

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

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

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

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