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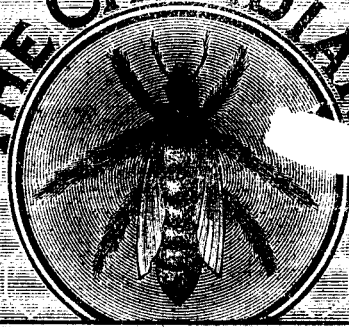
VOL. IV, NO. 57

1888

DECEMBER 5

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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"American Bee Journal," weekly.....		1.75
"American Apiculturist," monthly.....		1.50
"Bee-Keepers' Magazine," monthly.....		1.50
"Bee-Keeper's Guide," monthly.....		1.50
"Rays of Light".....		1.50
"The Bee-ive".....		1.50
"Beekeepers' Review".....		1.50
"Beekeepers' Advance".....		1.50

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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MOISTURE.

If you would know the effects of moisture in be cellars, how injury to the bees from its presence may be avoided, or how to have dry cellars, read the Nov. No. of **THE BEE-KEEPERS' REVIEW**. It gives upon these points, the views and experience of James Heddon, H. R. Boardman, Dr. C. C. Miller, Eugene Secor, J. H. Martin, O. O. Poppleton, Prof. A. G. Cook, R. S. Taylor and S. Corneil. Besides this, there are the usual lively, wide-awake, pointed editorials upon current topics, also appropriate extracts pertaining to the special topic under discussion. The Dec. No. will discuss, "Sections and their adjustment on the hives."

Price of the REVIEW 50 cents a year. Samples free. Back numbers can be furnished. The REVIEW and THE PRODUCTION OF COMB HONEY for 65 cents.

W. Z. HUTCHINSON

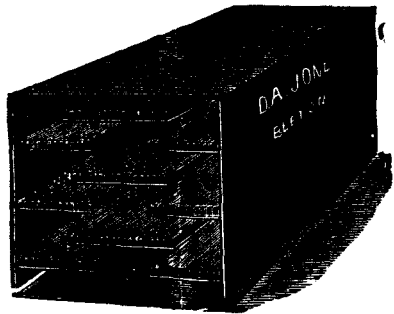
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Perfection Cold Blast Smokers, Square Glass Honey jars, etc. Send ten cents for "Practical Hints to Bee-keepers." For circulars apply

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Cor. Freeman & Central Avenues, Cincinnati

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Nickel plated pen and pencil stamp, with name 30c; Nickel plated stamp with name, 30c; 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

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SALARY AND EXPENSES PAID, OR LIBERAL commissions as representative chooses. **Outfit free.** Permanent positions guaranteed. Experience unnecessary. Special advantages to local men who devote part time.

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“ “ linens.....	\$1 15	\$1 90
Letter Heads, Superfine.....	1 25	2 00
“ “ Linens.....	1 75	2 50
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Envelopes, business size, No. 7,		
white.....	1 15	2 00
Extra quality.....	1 35	2 25
Business Cards.....	1 50	2 50
Shipping Tags, 40c., 45c. and 50c. per 100.		

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

THE CANADIAN BEE JOURNAL,

7

BEETON.

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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 **special** 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.

\$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.

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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JOHN A. CAIRNS,
Culloden, Ont.

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Will be mailed from Oct. 1 1888 to Jan 1 1890 for 75 cts. The editor has had 30 years experience in rearing Queens and practical Bee-keeping, and now proposes to give the result of that long experience in a series of articles in the **APICULTURIST**. The first Article will appear in the Nov. 1888 issue. The details of a new method of rearing Queens in full colonies, without making the colony queenless, will be given to each subscriber. Send for sample copy. Address **AMERICAN APICULTURIST, Wenham, Mass.**

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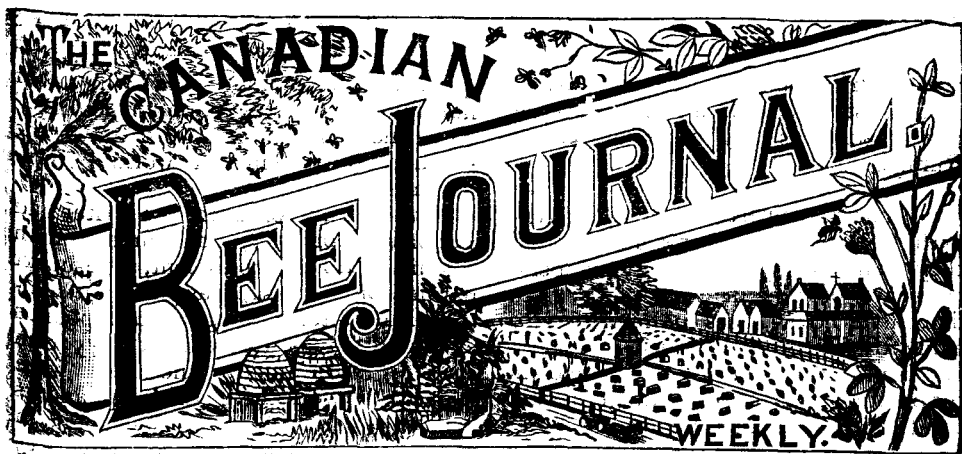
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- and numbers of other dealers. Write for **SAMPLES FREE** and Price List of Bee Supplies. **We guarantee every fuch of our Foundation equal to sample in every respect.** Everyone who buys it is pleased with it.

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



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

VOL. IV. No. 37

BEETON, ONT., DEC. 5, 1888.

WHOLE No. 193

EDITORIAL

THE Simmins Bee Company, of England, is in liquidation, the causes assigned being, insufficient capital, an unsuccessful out apiary, foul brood and the late bad season.

* *

During October the United Kingdom imported honey worth \$8020.

* *

Our sympathy and condolence is with Dr. C. C. Miller on the death of his aged mother which took place at his residence a few days ago.

* *

A series of lectures on Canada as a dairying country and the future of the dairy business in the Dominion, are being contributed to the press by Mr. W. H. Lynch, of Danville, P. Q.. No man in Canada is better qualified to write on this subject, and we hope his able articles will arouse our farmers to a sense of the importance of establishing creameries in every section.

* *

Mr. Cowan, editor of the *British Bee Journal*, has forwarded £23 5s 6d, to Dr. Miller, treasurer of the Langstroth fund.

EXTRACTED.

THE honey season in Australia is from the end of December to the end of March; the average yield per colony from 300 to 400 pounds; exceptional yields of 700 pounds. The bee business is uncertain, however, on account of the prevalence of foul brood, which prevails extensively in that country. The cost of a hive of pure Italian bees, about \$10. But few wild bees are found in Australia. The principal pasturage for bees is the bloom of the gum trees, or eucalypti. The honey from these plants is claimed to have great medicinal virtues, but a writer in a recent journal states that in taste it resembles a paint brush.

The reports of shipments of honey for 1888, from San Francisco, San Diego and Los Angeles, shows that the latter city furnished more honey for shipment this year than all other points in California. The Southern Pacific railroad alone has forwarded over 232,420 pounds up to September 1st. No other point in the United States can make such a showing for this year. The honey has gone east. The San Francisco dealers come here and purchase honey, as none is sent on consignment from the southern counties of California, as in former years. The best way to facilitate trade is to come down with the coin when the honey is delivered. If the honey producer will

adhere strictly to this rule the business will be established on a firm foundation, just as solid as any other business.—Rural Californian.

"Amateur Expert" in B.B.J. of Nov. 15th, says: All our grocers sell what they call 'honey syrup' at five pence (10 cents) per pound. It is light colored, like clover honey, does not granulate, is evidently flavored with some essence, and is presentable to both the eye and the palate. * * * * Altogether different from the bogus honey put up by purveyors and sold as the product of the bee at more than double the price. People who buy this syrup will not go to the expense of honey.

In Germany hives are painted various colors, dark green, brown and blue. It has been found that green and blue had a bad influence on the honey gathering. The only admissible color is yellow, principally the ochre, all other colors have poisonous properties injurious to the bees. Moreover, dark colors, such as green, blue and others, absorb too many of the sun's rays and cause too great a difference in the temperature of the interior of the hives between day and night, which is injurious, more especially in spring. In summer dark colors attract too much heat and cause the bees to hang out and waste much time that would otherwise be employed in gathering. Colonies in yellow hives develop better, and have given larger returns than those in hives painted green. Dr. Dzierzon has made the observation that bees prefer the yellow color. It is well known that bees have a great dislike for dark colors. Dark-colored animals and persons in dark clothing are more liable to be stung. For this reason it is preferable for the bee-keeper to have light-colored clothing. He also instances the development of bees in straw hives, which are also yellow.—*Nutzliche Blatter.*

The main point of superiority of the Italian bee is in its honey gathering qualities. If there is any honey to be had, they are away to the fields after it, and will toil incessantly all day for a very little, while the black bees will not work at all unless honey can be gathered

quite freely. Italian bees will labor faithfully all day long for only "pennies," while the German bee must have the "dollars" or it will not work. To illustrate:

In the spring of 1872 the writer had 15 colonies of bees, and three Italian colonies. As an experiment, a 14-quart pail full of maple sap was placed in shallow dishes after adding about 2 pounds of sugar, so as to make a very thin sweet. With honey, the bees were started to work near this sap, and as long as the honey lasted they came in about the proportion named above—15 of the dark, and 3 of the yellow bees. As soon as the honey was gone, they took to the sap, but in a few minutes the black bees began to stop coming, so that in an hour none but Italian bees were carrying the thin sweet. These bees worked until they carried all the sap home, and had it evaporated down to the consistency of honey, while the black bees thought it not worthy of their notice.—G. M. Doolittle in A.B.J.

OBSERVATIONS.

☞ I WANT brother Root to remember the old adage: "People who live in glass houses," etc. He copies the remarks of the *Review* with reference to untrimmed journals.

* *

I observe on page 868 of *Gleanings* that Will Ellis, of St. Davids, has been trying moving bees to fields of buckwheat with good success. Surely there must have been a difference in the kind of buckwheat sown by his neighbor and that sown by your neighbor, Mr. Editor. Perhaps Mr. Ellis wouldn't mind ascertaining the kind of buckwheat and let us know through the JOURNAL.

* *

On page 87 of Prof. Cook's revised Manual, eleventh line from the top occurs this sentence: "The queen, like the worker bees, is developed from an unimpregnated egg." The italics are mine and the Professor should take some means of correcting this typographical error. His book is remarkably free from mistakes, but this slip on the proof reader's part is inexcusable.

OBSERVER.

In return for the names of ten bee-keepers sent us on a postal, we will send the "Bee-Keepers' Dictionary" value 25 cents.

PRACTICAL BEE-KEEPING.

BY D. A. JONES.

PAPER III.

INMATES OF THE HIVE.

A NORMAL colony of bees consists of a queen, a large number of workers and a smaller number of drones.

THE QUEEN.

The queen is the mother bee of the colony. Her function is to lay all the eggs which produce workers, drones or



THE QUEEN.

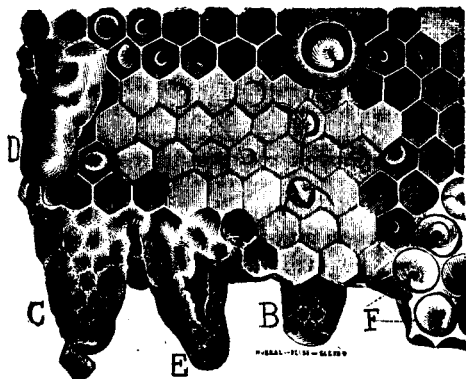
queens. In size she is nearly double that of the other bees and apart from this is easily distinguished by her movements and general appearance. In crawling over the combs when not disturbed her movements are slow and graceful and she is usually accompanied by a retinue of about a dozen workers, which cluster around her on all sides and keep constantly feeding her. Especially is this noticeable in the height of the laying season, which lasts here in Canada, from the beginning of May to September, when for days and even weeks she may daily lay double her own weight in eggs. In color she varies according to the race to which she belongs, but is usually lighter than the workers or drones. Her legs are much longer than those of the other inmates of the hive, and when disturbed or excited she will travel at a rapid pace over the other bees. If you shake the bees off the combs to the bottom of the hive, she will extricate herself readily and travel over the mass with great strides. Should the hive receive the slightest jar she will rush across the combs in such haste as will occasionally cause the bees to "ball" or destroy her. This is more likely to occur during the fall or in the absence of the honey flow, when the weath-

er has been warm and cool weather just setting in, and especially after they destroy their drones.

In proportion to the length of her body her wings are short. Her abdomen is long, being nearly equal to the total length of an ordinary bee, and she cannot make such rapid progress on the wing nor fly the same distance as the active workers. When the abdomen is filled with eggs she can scarcely fly at all.

QUEEN CELLS.

A queen is hatched from an ordinary worker or fertile egg, which is placed in a cell specially prepared for her incubation and termed a "queen cell." This cell shown in the illustration at D is an inch in length and a third of an inch in diameter or four times the size of an ordinary cell. The cell walls are thick and the mouth of the cell is at the bottom. The egg is hatched on the third day after being laid and the larva floats



- A.—The commencement of the queen cell.
- F.—The larva just before being capped.
- B.—The cell almost ready for sealing.
- D.—The cell fully capped over.
- C.—Appearance of cell after queen has gnawed out.
- E.—Cell torn open at the side where bees have destroyed the immature queen.

in the bottom of the cell on the food which is very liberally supplied and which is far richer and more nutritious, than that fed to other larvae. This food is termed "royal jelly," is slightly yellow in color, and is said by those who have examined it microscopically, and other-

wise to be digested pollen. On this the larva feeds for five days, when the workers close the cell with a thin coat of wax, denominated "capping." The royal chrysalis now commences to spin its cocoon, or tough silken web on the inner walls of the cell, very thick at the point of the cell gradually lessening in strength as it extends upwards, finishing altogether two thirds of the way up the cell. This cocoon or silken lining in the cell, is supposed to be placed there to protect the inmate of the cell, and whenever they are destroyed as frequently occurs, the cell has to be torn open by the bees at the back of the cocoon as the point is so thoroughly protected that it can scarcely be pulled asunder. It remains in this stage until the seventh day when it commences to gnaw its way out, emerging on the eighth, sixteen days from the depositing of the egg in the cell.

FERTILIZATION.

On the fifth day if the weather is favorable the virgin queen will take a flight to meet the drone and become fertilised. On leaving the entrance she flies in circles around the front of the hive, in order to mark the location, and seems especially careful to note the surroundings that she may not on returning make a fatal mistake by entering a strange hive. She then soars off in the air in search of a drone, usually returning in from ten to thirty minutes. The apiarist can readily determine if she has been successful in mating by watching as she enters the hive, the copulating organs of the drone are attached to her abdomen, appearing as a small white speck of the size of a small pin head and easily seen.

Usually the newly impregnated queen will commence to lay in about five days, and deposits principally worker eggs for she appears to know by instinct that until the colony becomes fairly strong, and there is a probability of increase that no drones will be necessary. The queen lays both worker and drone eggs, alike in appearance, but differing in the former being fertilised, the latter unimpregnated. Should the queen have failed in becoming fertilised she will produce drone eggs only.

It not unfrequently happens that virgin queens come home without meeting

drones, and they will sometimes stay in the hive a few minutes to rest and obtain food, then issue again on a second bridal trip the same day, and so continue for days when weather is favorable, until they become fertilized.

VIRGIN QUEENS.

A virgin queen is one hatched but unmated; a fertile queen is one fecundated and laying; a tested queen is one whose progeny has shown uniform markings. A person purchasing a tested queen usually expects to receive one that is not only purely bred, but tested as to pure mating and fertility. Other queens are further tested as to the honey gathering qualities of the workers, their comb building and capping abilities, their gentleness and vitality and her own prolificness.

A large number of virgin queens are sold to bee-men who have queenless colonies to put them in, and we know of instances where much expense has been saved by using virgins on account of the smaller cost compared with fertile or tested. In this way, if the breeder has to introduce them and wait until they commence laying, then remove and mail them, by the time the purchaser gets them we can safely calculate that five days have been lost to the colony, whereas had he introduced a virgin queen to his colony at the start, this time would have been saved. It has another advantage in avoiding in-and-in breeding which is a point well worthy of consideration. We have shipped a very large number of carefully bred virgin queens, and might fill many pages with testimonials in their favor. It will not be a matter of surprise, if virgin queens carefully bred from superior mothers and tested colonies should become favorites with the purchasing bee men. By their use the buyer runs much less risk in introducing as will be explained in due order.

LIFE OF QUEEN.

The average life of a queen varies. I have known them to live five years, but we might reasonably expect good queens to live from two to three years.

There appears to be a prevailing opinion with some, that when a young queen is hatched in a hive, to supercede the old failing queen, that the old one is de-

stroyed by the bees. This may be indirectly true. As the queen is fed highly nutritious and previously digested food, as proven by Cook and others, when a young queen commences to lay, the bees give her the attention and neglect their former sovereign. Thus they literally starve her to death, but take no violent means to accomplish this end. This provision of nature, to keep the old queen laying sometimes until the young queen commences is indeed a wise one, as brooding is thus maintained.

THE QUEEN'S STING.

The queen has a curved sting and it is stated by some that she never uses it except in a royal combat. Such is not the case, as I have been stung by a queen when holding her in the hand, but it is a rare occurrence. I have also known queens to pounce upon bees and sting them to death almost instantly. The question has been asked whether the bees so stung were fertile workers, but the answer is guess work. A breed of queens that will destroy fertile workers is one I should like much to possess.

DRONES.

The drone is the male bee, whose body is larger than that of the worker, but its abdomen is not as attenuated as the queen's. The drone is without sting, he does nothing for his living but feeds upon the stores garnered by the workers. Drones appear in the hive as the swarming season approaches, their mission being to fertilize the young queens, which act means certain death.

Drones are hatched from unimpregnated eggs. The queen deposits the impregnated or worker eggs, or the unimpregnated drone eggs at will, but an unmated queen can lay drone eggs only. Thus the copulating male bee exerts no influence on the drone progeny, and a purely bred queen must therefore invariably raise pure bred drones.

Drones live just as long as the workers think there is a possibility of their peculiar functions being called into use, but with a cessation of the honey flow or the approach of winter all these noisy individuals are ruthlessly killed or expelled. Father Langstroth in the CANADIAN BEE JOURNAL, vol. I, page 426, says that the drones are continually fed by the workers with the same food as is

supplied to the larvæ, and Prof. Cook corroborates this by stating that the workers in destroying the drones do so by constantly biting and worrying, but principally by withholding their chyle food.

When the colony is queenless the bees will not destroy the drones, naturally expecting that they will raise a queen and require their services, "hoping against hope." Thus the drones remain until they die with old age or cold weather sets in, when the economical workers shut off their food supply.

WORKERS.

The workers are the smallest bees in the hive and need not be described. The young bee emerges from its cell in twenty-one days, but will not leave the hive for from seven to ten days after. The functions of the workers are to collect pollen and honey, secrete wax, build comb and cap over the stores, feed the larvæ, and defend their home. The wax is secreted in "pockets" found under the abdomen, and this feature is peculiar to the worker bee. The tireless worker does not live long. If born just as the colonies are placed away for winter its life may be seven or eight months, but if it first sees the light when the flowers demand hard work sixty to ninety days is probably its extreme lease of life. The workers are undeveloped females and perform all the duties of the hive except laying eggs for the reproduction of their species. The workers are possessed of a sting as a defensive weapon, and which they are credited with using only on provocation, for to sting is death to the bee.

POLLEN.

With the first warm days of spring the workers are busy in carrying in pollen or the fertilizing grains of the flowers. They extract the pollen from the anthers of the plant by rubbing with the front legs, making continual darts at the blossom until the load has been secured. The pollen is next moistened by the proboscis and transferred to the pollen baskets situate at the joints on the middle legs. In placing this pollen into the comb the bee thrusts its middle legs into the cells and pushes off the pollen with its front legs, leaving the little loaves lying loosely in the bottom to be packed away by other bees of the hive.

Mr. T. W. Cowan in his *Guide Book* gives the subjoined table which will show at a glance the usual periods of the various transformations of bees from the egg to the perfect insect.

	QUEEN DAYS.	WORKER DAYS.	DRONE DAYS.
1. Time of incubation of egg	3	3	3
2. Time of feeding larvæ	5	5	6
3. Spinning cocoon by larvæ	1	2	3
4. Period of rest.	2	3	4
5. Transformation of larvæ into nymphs	1	1	1
6. Time in nymph state	3	7	7
Total	15	21	24

	Date	Date	Date
1. The hatching of the egg takes place and the grub emerges on	4th	4th	4th
2. The cell is sealed over on the	9th	9th	9th
3. The bee leaves the cell as a perfect insect on	16th	22nd	25th
4. The bee leaves the hive to fly on the	5th	14th	14th

FERTILE WORKERS.

When a colony becomes queenless and remains so for some time, without the bees having any means of supplying themselves with a successor to the throne, some of the workers will commence to lay eggs. Some races are worse than others, especially the Cyprians and Syrians. I have known a hive of these to contain fertile worker eggs in two days after becoming queenless. I have introduced queens to such colonies, which is a difficult matter after the fertile worker brood is capped, and when the queen deposited eggs the fertile workers continued to also do so. This they did for five or ten days when they either saw the error of their ways or were destroyed. The eggs produce small drones, no larger than a worker. The brood when capped may be known from worker by the conical cappings on the cells. These little drones become consumers and where such are found they should be destroyed by shaving off the cappings sufficiently deep to decapitate the larvæ. A queen should always be given as soon as fertile worker eggs are seen, and where no other brood is in the combs the cappings should be removed and the combs left out of the hive all night or soaked in ice cold water for an hour. The brood may be thrown out of the combs either by the extractor or giving the frame a smart rap. Or the combs may be given to a strong colony in the evening and the

dead brood will be removed by morning. Combs filled with worker brood in all stages together with all the adhering bees might be given the fertile worker colony. Two or three such combs with bees, placed in the centre of such a colony, will usually so disorganise their plans that immediate introduction of a queen will stop further difficulty.

SWARMING.

The warm sunshiny days of spring are conducive to brood-rearing, and with the near approach of summer the colony becomes very populous. When it has gained sufficient strength numerically, and there is a good flow of honey, the bees think it an opportune time to swarm. The novice can tell when his bees are about to swarm by their building queen cells. Should the honey flow stop or unfavorable weather set in, they tear down the queen cells and destroy the larvæ therein, but with favorable prospects they cap the cells and with fine weather the apiarist may look for a swarm next day.

The old queen invariably leads out the swarm. I say invariably as that is the usual course, but I have known instances of old feeble queens failing in the swarming season. A large number of queen cells would be started and the old queen unable to lead out the swarm when the cells were capped would remain until the young queens hatched. Sometimes after the queens had gnawed out the bees would imprison them in the cells, keeping them there for days. Yet as soon as they emerged they would lead out a swarm—what was virtually a first swarm with perhaps several queens, the same as usually occurs with a second swarm. This frequently occurs when the old queen dies just at the capping of the cells, but she seldom lives to do duty until the swarm issues led out by the young queen. These young queens are not fecundated although it is a first swarm, and the novice who clipped their wings before laying would make a fatal mistake.

Second swarms have been known to be equal in size to firsts but as a rule are but half as large. They usually issue on the eighth or ninth day after their predecessors. The reason is obvious: the old queen leads out the first

swarm as soon as the queen cells are capped over, thus requiring eight days for the young queens to hatch.

THIRD AND AFTER SWARMS.

A third swarm may come one or two days following the second, to which it is only half equal in bulk. Sometimes when the swarming impulse is at a high pitch there continue to issue after-swarms, each day for several days, the swarms continually diminishing in size. This course is frequently fatal to the success of the bee-keeper, as so many bees have left the old colony that if left to itself it will be unable to survive and prepare for winter, and all those small swarms will not be able to build up sufficiently or gather stores to carry them through to another season. Even should feeding be resorted to the colony is usually too weak to tide over the severe winters of our northern latitudes. Of swarming I will speak further under the head of "Increase."

For the CANADIAN BEE JOURNAL.

THE PAST HONEY SEASON IN MUSKOKA.

FRIEND SCHULZ HAS A WONDERFUL YIELD,—
3,100 LBS. FROM FOURTEEN COLONIES.

MOSTLY all reports of the past season's honey crop that have appeared in the CANADIAN BEE JOURNAL from bee-keepers in Canada and the United States are analagous in two things, viz., no surplus and little or no increase. The reasons for these shortcomings are apparent;—cold weather and the high raw winds in the spring, and severe drought during summer, checked the flow of honey and prevented the bees from flying whilst there were lots of flowers. Here with us were any amount of blossoms on trees and shrubs, and the bees commenced storing fast from these, when suddenly the weather changed and the bees commenced using what they had gathered. Clover came, but gave no honey; the linden had very little bloom except where it grew on very low ground, in the swales near the lake. I ascribe the very scant linden bloom to the severe drought we had the year previous, just when the trees were in blossom; it taxed them so much that the buds for this year's bloom could not develop. So far we were not a whit ahead of other bee men in this Province, for up to the 1st of August I only got 400 lbs. of surplus from 14 colonies, spring count, and my report would

also be a poor one had we not had an abundance of fall flowers.

THE FALL FLOWERS.

With the beginning of August a few showers of rain started a lot of fall flowers, mainly purple top, fire weed, and fall aster, and before the month was to an end there was an immense sea of flowers on the rocks where the fire had run over the year before, and which you advised to be seeded with honey plants when you were here, Mr. Editor. Well, nature stepped in and did the work for us, and better than we could have done it. For miles north of my place one would really walk in a flower garden, and bloom they would, frost or no frost. Many a fall aster I found in bloom on the 14th and 15th of November. This would have been the place to move the bees to, and it would have paid even a distant bee-keeper to bring his bees here. With the opening of the fall flowers the real work in the apiary began.

REGULATING INCREASE.

I had decided in the spring of the year to have no increase if I could help it, and to that end I had given each colony a second storey, that is to say, I put another hive body with twelve frames on top of the lower one, with a metal honey-board between them. This worked very well till the real honey flow commenced, then they would swarm, more so as I had left in each hive sufficient well-sealed combs for wintering, in case of no more honey coming in, and I had to give more room or hive the swarms. Here is what I did. As soon as a swarm would issue from one of these double hives, I caught the queen, caged her, and set her aside. When sufficient bees were out I set the old hive back, placing a new one with a frame of brood and ten or eleven empty frames on its stand. When the bees returned I put the queen under the quilt till all were in. Then I liberated the queen, removed the quilt, put on the honey-board and the second storey from the old hive, and in ten or fifteen minutes the bees were at work again. In two or three days I go to the old hive, cut out all the queen cells and lift bees and combs into a third storey, which in the meantime I have added to the two storeys, and have now all the bees in the one three-storey hive again. In the lower storey the swarms, the second for surplus, and in the third storey the brood and bees from the old hive. As soon as the brood in the third storey is capped I change it with the second and have it for storing, whilst I can now extract from what was formerly the second storey or leave it to be completely capped and ripened. This plan worked admirably with me; it prevented increase, gave good ripe

honey and strong colonies for winter. It is advisable to look over the old colonies in the third storey again. They might commence building queen cells again before they are aware that they belong to the same hive and have a laying queen below. It has been agreed that the deep frame hive is not very suitable for a two storey hive; bees had too far to travel to deposit their stores. I have the deep frame hive now, and will henceforth run my apiary with the Jones single-walled hive, with two upper storeys, leaving the supposed advantages to those who adopted the shallow frame hive in the first place. To obtain a sufficient number of top storeys a person need only leave the bottom boards off when he nails the hives. I generally nail another cleat on the back end of the bottom board, then paint it and have it for use when needed. I also save the pieces I break out of the entrances as they come good again for closing up when the hive is used for second or third storey. For extracted honey I like double bee space, using an all-metal honey-board. A wood and metal honey-board is not practicable, as this itself gives double bee space where it is not already necessary, and the space above the combs might become too large and induce the bees to build brace combs. For comb honey I prefer single bee space, with no honey-board. Was never troubled with pollen in the sections, I have the queens clipped; it saves great trouble in swarming, but the clipping should be done early in spring on a fine warm day. When the colonies get stronger, or near swarming time, the bees might kill the queen on account of her becoming restless. I lost two fine queens that way.

THE YIELD.

Now for the result:

Colonies in spring, 14; increase, 6.

Extracted honey up to 1st August	400 lbs.
" " during August..	900 lbs.
" " " September	900 lbs.
" " " October..	600 lbs.
Comb honey	300 sec.

How great the honey yield was will be seen by the following. On the 26th of August I hived a swarm from one of the three-storey hives. I suppose it contained about a bushel of bees, which rushed out in about a quarter of an hour. I hived them on nine empty frames (no starters) and one full comb, and gave them 108 sections right away. The empty frames I put somewhat closer than usual to get the bees into the sections more quickly. On September 24th I took from them seventy-nine fairly well filled sections and twelve that were what one might term saleable. But that was not all, they had filled the lower

hive completely with honey, using every available space, and it took me some time cutting before I could lift one comb. The combs were so fine and tender they would not bear extracting—we had to use them at the table. Another July swarm gave 196 sections and some extracted. How far this immense honey yield extended into the District I cannot say. A neighboring bee-keeper, Mr. T. Roach, Severn Bridge, reported to me latter end of August 1,200 lbs. from seven colonies, spring count. I have not seen him since, but believe he too will have over 200 lbs. per colony. As the honey yield kept up so long it was late in October when I prepared my bees for winter. I raised the combs and gave them well sealed stores, not being stingy either, so that they weighed from 78 to 95 lbs. without the lids, and put them in the cellar November 13th. Drones were flying the first week in November and even in the cellar, but I am sure every colony had a laying queen. Of the honey I have 1,600 lbs. on hand yet, the rest I sold at the rate of 12½ cents by the sixty and hundred pounds, smaller quantities at 15 cents per pound. This has been (at last) the best honey season as long as I have kept bees. The highest surplus I hitherto have had was 160 lbs. per colony; this year takes the cake, and I assume it will be quite refreshing to bee-keepers to hear a somewhat better report than usual. Doubting Thomases—if any—would find an answer in St. John's chap. 1, v. 46, where it says,—Come and see!

E. SCHULZ.

Kilworthy, Muskoka, Nov. 30, 1888.

FOR THE CANADIAN BEE JOURNAL.

THE DIFFERENT RACES OF BEES.

THE man who—impelled by an enthusiastic and genuine spirit of research and—has spent years of time and thousands of money, in visiting and sojourning in foreign countries, European and Asiatic, as well as islands of the sea, in order to study the different foreign races of bees, and introduce the best of them to this his native land, deserves our thanks rather than our criticism. But on this question of the foreign bee we confess our incompetency to criticise or review. No man that I know of in America is practically competent as a critic of D. A. Jones in these premises. But although he is safe here in his invulnerable redoubt he must soon come out again on the open field where he will have to meet us on common ground, and there I shall be pleased to watch his movements carefully.

I may say, however, that my first ten to fifteen years of apiarian experience in my father's time

was with the common black bee which gave us fine results in the old box hive, and which wintered very well "standing on their heads" (bees inverted) in a house built for the purpose above ground and filled in with saw dust. Since that time I have had about twenty years' experience with the Italians, Syrians, and different crosses. So far as my experience has gone it coincides with the conclusions Mr. Jones has arrived at in regard to the superiority of the crosses over the pure races.

ALLEN PRINGLE.

Selby, Ont., Nov. 26, 1888.

For the CANADIAN BEE JOURNAL.

Are There any Markings by Which we Can Conclusively Certify a Pure Italian Queen.

THE above question may have no particular value to the worker for honey alone; what he wants being a queen that will give him hardy docile bees that are good workers; but to those who desire purity it is of great importance. So far as the black bee is concerned, it matters but little now, there being no call in the market for such, but the yellow varieties have so many marks in common, that the old rule or test of Italians, viz., three yellow bands is no longer of any weight whatever. Experiments in my own yard prove that the yellow varieties will all throw three bands, and that by crossing the Italian with the Cyprian, or other yellow bee, we get the three bands more distinct and beautiful in color, than by preventing such crossing.

In one view of the case it matters little. If three bands alone are wanted, it is easy to get them, but to the man who wants the Italians and nothing else, is there any test that can be applied by which he can assure himself that he has just what he wants? It is said we can get pure Italian bees from Italy; perhaps we could once but can we now? I don't know myself. I do know however, that I have bred, and can ever see produced by an imported queen, and from a queen six or seven generations from the imported mother.

If there is any rule, I would like to know what it is, and so I presume would very many others.

J. E. POND.

North Attleboro, Nov. 27, 1888.

No matter what kind of printing you want, it can be done at this office. Visiting cards, bill heads, envelopes, pamphlets, note-heads, anything. Write for figures.

Indian Forester.

A CURIOUS FIG TREE AND CURIOUS BEES.

A NEW country is entered on the ascent of the Mukso range. The soil is dry and rich, and the forest changes completely its character. A few trees of Nagasar continue, but soon become intermixed in dark shady glades with the gracefully rounded clumps of fig, (*Ficus triloba*), the large leaves of which, with their ferruginous, velvety surfaces, are truly lovely. On dry, grassy slopes, and on the more open forest tracts, another fig is met with (*Ficus conglo-bata*.) This tree, throwing toward the ground its fruiting boughs, succeeds through the aid apparently of ants in having its fruit completely covered with the loose, rich soil in which they are ripened. On the boughs of this tree a curious bee was found, which, ant-like, had constructed its hive by sewing two or three leaves together. The insect was very small, and had a curious greenish metallic lustre. Thinking this to be an ant that perhaps preyed upon the smaller species, supplied with food by the fig in return for services rendered, I was about to catch hold of it, when one of my coolies told me not to do so, as the bee stung very badly at first, but lost this power after a time. This local wisdom dictated a course of procedure that greatly astonished me. The hive was struck gently with a stick once or twice, the adventurer rushed off as hard as he could between each attack. By-and-by, deeming that the bees had got over their fit of ill nature, he coolly went up and cut the hive off the tree, the bees crawling over his hands all the time without stinging him."

SUNDRY SELECTIONS.

REMEDYING QUEENLESSNESS IN WINTER.

C. WURSTER—I am astonished that men like D. A. Jones, and Prof. Cook, of Lansing, should, on page 653, Nov. 7, make such replies to an enquirer as "not to bother the colony but wait till spring." For what? to be sure to find anything but live bees, why not advise to supply them with a queen at once or unite with some other when it is known for a certainty that the colony is queenless? I never yet saved 50 bees alive of a colony that was queenless on the approach of winter till spring, and I have tried it a good many times. They never cluster close and seem to fret themselves to death, and are always more restless.

Klienburg.

Our correspondent cannot have read the query understandingly. The questioner asks what to do to remedy queen-

lessness in a colony which has lost its queen after going into winter quarters, not, as he seems to think, "on the approach of winter." If you have a better remedy than given by those who answered let us have it.

CONVENTION NOTICE.

MICHIGAN STATE BEE-KEEPERS' ASSOCIATION.

The 23rd annual meeting of the association will be held in the city of Jackson, Mich., on Dec. 12 and 13, 1888. Meetings will be held in the city council room. Greatly reduced rates have been secured at the Hurd house, also at the Commercial house (near Mich. Central depot) at \$1.50 and \$1 per day. A program is being prepared and from the excellent papers already promised, we expect a very interesting meeting. Any bee-keeper having anything new and useful and finding it impossible to present can send it by express it to Jackson in care of the Secretary who will place it on exhibition and return it as per orders. Plenty of room to exhibit. Please come and bring your bee-keeping friends with you. H. D. CUTTING, Sec.

GOOD BOOKS

—FOR THE—

Farm, Garden AND Household.

THE FOLLOWING VALUABLE BOOKS WILL BE SUPPLIED FROM THE OFFICE OF THE CANADIAN BEE JOURNAL. ANY ONE OR MORE OF THESE BOOKS WILL BE SENT POST-PAID DIRECT TO ANY OF OUR READERS ON RECEIPT OF THE REGULAR PRICE, WHICH IS NAMED AGAINST EACH BOOK.

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Allen's (R.L.&L.F.) New Am. Farm Book	\$2 50
Barry's Fruit Garden. New and revised	2 00
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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
6	Crayons, colored drawing.....	45	1 00
1	Eraser combined ink and pencil	45	
3	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 $\frac{1}{2}$, bevelled.....	45	1 05
1	Ruler, for school children, three for 5c.....		
2	Scribbling books, 200 pages.....	40	90
2	Tacks, cut, 2 papers 1, 2 or 3 oz.	45	

8 CENT ARTICLES.

3	Butter stamps 3 or 4 inches....	75	\$1 75
1	File, 3 corner, 3 or 4 inches....	75	1 75
1	Ink-well, glass, safety, cannot spill.....	65	
1	Mucilage, good sized bottle....	70	
1	Oil cans, zinc.....	65	
6	Pencil, automatic indelible....	75	1 75
2	1 doz. Lead Pencils, No. 852, very good.....		
2	Time books for week or month.	75	

10 CENT GOODS.

2	Bill files, 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
3	Butter spades 9c. each.....	80	1 90
2	Boxwood pocket 1 foot rule....	90	2 10
2	Chisel, firmer $\frac{1}{4}$ inch....	90	

Postage.		Per 10 lots.	Per 25 lots.
2	Clips for holding letters, etc... Due bills, 100 in book with stub	90	2 00
2	Envelopes, 3 packages, white, good, business.....	85	1 80
2	Files, 3 cornered, 5 inch.....	95	
3	Lead pencils, 1 doz. plain cedar Fabers 581.....	90	2 10
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 $\frac{1}{2}$ inch.....	95	2 25
4	School bag, medium size.....	90	2 10
	Tacks, cut, 3 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
	Shce knives, 4 inch blade.....	1 20	2 75

15 CENT ARTICLES.

12	Chisel, firmer, $\frac{1}{2}$ and $\frac{3}{4}$ in.....	1 45	
3	Dextrine, $\frac{1}{2}$ lb. pkge. for pasting	1 30	
3	Glue, 1 lb. ordinary.....	1 30	
3	Hammer, iron, adze eye.....	1 45	
5	Lead pencils, 1 doz., good quality, Faber's 971.....	1 40	3 35
6	Note paper, 5 quires, 3 lbs., extra value.....	1 40	3 35
6	Paint brush, No. 5.....	1 30	
4	Rubber bands in gross boxes. For queen nursery.....	1 40	3 40
4	Rule, 2 foot, a splendid line....	1 40	3 40
2	Screw driver, 5 inch, round bit, hardwood handle.....	1 40	
2	Statement heads in pads of 100	1 20	
12	Tack hammer 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.

1	Bit, best make, $\frac{1}{2}$, $\frac{3}{4}$, $1\frac{1}{2}$	1 65	4 00
1	Glue, LePage's liquid, with brush	1 65	
1	Oilers, automatic.....	1	

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No. of Barrels.	No. of Doz.	Prices.
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1	8½	6 45
4	9½	6 75
5	9½	6 95
4	9½	7 15
3	10	7 35
3	10½	7 55
2	10½	7 75
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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

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	Per lb.	Per 10 lbs.	Per 100 lbs.
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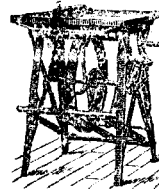
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