The Canadian Bee Journal

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IN our November issue, friend Byer comments on the questions and answers put by the Editor of "Gleanings" in the issue of October 15th. He refers particularly to the question of sealed covers, and seems to still prefer the cushions. Our experience is decidedly in favor of the cover, and that cover, the "honey board"—(why it is called honey board we cannot understand,) but not sealed. In the late fall, just before we fill the packing case with packing, we pry the honey board up and loosen it from its "glued" position on top of the hive, then proceed to complete the packing. For this we use fine shavings. Our theory is this: Having loosened the cover—(honey board), ventilation is permitted sufficiently to keep the hive dry. The warm air passing up to the shavings warms them. The shaving-wood is a non-conductor of heat. Thus the heat is retained about the hive; it is imbeded in a mass of warmth the winter through. The air passing up to the shavings prevents condensation in the hive. The air is thus always dry and pure. Furthermore the bees have the additional advantage of crossing over the top of the frames in early spring when they begin to get active, and start brood-rearing. This we believe to be a great advantage. In some cases we have left the propolized cloth on and packed the shavings immediately on top, without other cover. This does not permit the passage of air, nor can the bees pass over the top bars. We have found hives so packed in a poor condition and very much mildewed. We have never used cushions, but consider their effect would be much like the cloth cover. The writer cannot boast of any great success with the bees in the way of large crops of honey, but will be bold enough to say that he has had great success at wintering. The honey board on top of the bees, with twelve or fourteen inches of packing above it, has brought our bees through the winter as dry as a bone. No cloth or cushion for us.

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When Prof. Surface arrived in Toronto to attend our recent Convention, he had in his pocket two excellent papers. "Bees and Horticulture" was the paper he read, but he was good enough to give us a copy of both. The above named paper we published last month. It is with pleasure therefore that we present the other one in this issue. It is well worthy of the closset perusal.

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Mr. L. A. Aspinwall, Pres. of the National Bee-Keepers Association, Jackson, Mich., has accept-

ed an invitation to be present at the Brant District Bee-Keepers Convention, which is to be held at Brantford Court House on Jan. 21st, 22nd, 23rd, '08. Mr. Aspinwall is world-known as one of its most careful apicultural investigators, and he alone is bound to draw a large number to the convention. Several other United States bee-keepers are expected to be present. F. J. Miller, Pres. Ontario Bee-Keepers Association and many other Canadian bee-keepers will be present. The first session begins at 7.30 p.m., 21st, and closes at noon on the 23rd.

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It will be noticed by Mr. Holtermann's letter in another column, that he still adheres to his opinion in the matter of foul brood in Ontario, as published in Gleanings, and referred to by us. It appears to be the opinion in Norfolk that the disease was very bad there. This may be the case, but it cannot be said that the whole Province is in a like condition. However it is by bringing out all the facts that the public becomes informed. In this connection we would be pleased to receive a report from Mr. Armstrong setting forth the number of diseased colonies found, in order that we may become possessed of all the facts; merely giving the number of yards in which it was found is not so satisfactory as knowing the number of diseased colonies; we trust that Mr. Armstrong will furnish us with this information. Truth must stand, and much good will be accomplished by bringing out the whole truth. Speculation and recrimination is not desirable when facts are available. We trust our friends in Norfolk County are thoroughly aroused to fight the pest, and that they will soon be able to show a clean bill of health.

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An interesting discussion appears in the Bee-Keepers' Review, between W. K. Morrison and editor Hutchinson, in reference to honey being a luxury. Honey has too long been regarded as a luxury, and it is this, more than the price of it that restricts its sale. If honey could be regarded as a necessity for the table, as is butter, for instance, it would be bought at the market price, however variable. Butter will vary in price from 20c. to 35c. per lb. during the year. Yet it is purchased with a feeling on the part of the purchaser that it cannot be done without. We do not think the price of honey has anything to do with the luxury idea. Extracted honey at 15c. per lb. is better and cheaper than butter at 30c. It is the dainty sweetness of honey, and its scarcity that has created this "luxury" idea. Also, when one wishes to point to or emphasize luxurious living, "honey" is invariably used to point the moral. Abundance of honey, and education of the public in its use, will broaden the market and increase its consumption, regardless of the price. The price in any event must be governed by the cost of production, plus a living profit for the producer. Below this it cannot fall, or if it does it will disappear from the market; and above this it cannot rise (unless temporarily), as large and inordinate profits

will result in greater investment of capital and greater production. Honey, like any other agricultural production will be subject to the law of supply and demand, and can never be made a monopoly of.

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Mrs. Geo. W. York, the beloved wife of the editor of the American Bee Journal, Chicago, died October 14th, 1907. We extend the sympathy of the apiarian fraternity of Canada to Mr. York in his bereavement.

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The six foul brood inspectors cost the Ontario Government during the past year $2,285.00, while the sum voted by the Legislature was only $1,200. The inspectors made 733 visits and examined 633 apiaries, containing 14,993 hives, among which 264 foul brood yards were found.

* * *

The Ontario Association Directors' Report showed 11 affiliated societies with a membership of 143 and single membership 130, making a total membership for the association of 273. The treasurer's report showed total receipts of $832.18, and expenditure amounting to $587.60, leaving a balance on hand of $244.58.

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This is the season of the year when all hearts should be glad—when all hearts try to be glad. If we know of any hearts that fail in that "trying," let us bestir ourselves to give assistance. Christmas cheer and good-will is a concentrated exemplification of that great spirit of Christ which taught us how to love each other. Dear reader, we wish you and all your dear ones all the cheer and happiness that Christmas should bring.

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We have been frequently asked by our customers which is the best—comb or extracted honey. We invariably reply, "extracted honey is by far the best." Then we back it up with the following arguments—listen, and tell us if we are right or wrong. We say this: "In eating comb honey, you cannot put anything else in your mouth at the same time, or if you do you must swallow the wax. There are no food values in the wax, and it is difficult to digest, as it must first melt in the stomach. In eating comb honey with nothing else in the mouth, one gets the taste in too concentrated a form, and many persons feel a choking sensation as a result; others can eat but very little of it and are repelled; while if the extracted honey is eaten, it it may be taken clear if desired, or taken with the bread or cake, and will not be found irritating to the throat, and no wax is put into the stomach. The bees make wax to store their honey in. They do not make it to eat. We do not think that honey and the comb should be eaten. We do not believe that Nature so intended it. There are a number of persons in our minds whom we have converted in this matter. It is more profitable, too, to produce the extracted article. What have our comb honey men got to say to this? Don't get after us too severely.

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In the discussion on foul brood and winter losses at the recent

convention at Toronto, Mr. M. B. Homes, of Athens, said: "Answering the question as to whether the losses were within the membership of this association, or without, I might say in the district coming under my observation, the losses, which were very heavy, were principally among those outside the association. I would also say the careless man is always in error. . . . We find him when it is too late in the fall, coming to us with such questions as this: 'How do you manage the sugar? Do you just put dry sugar in boxes and feed it to them?' He has forgotten what we said. This man learns by experience, although he finds it a very expensive teacher." Just so. If those people would do a little reading, they would save money. They think the investment of one dollar in a bee journal an extravagance, whereas by their lack of knowledge they lose ten.

* * *

The cost of the foul brood inspectors to the Government exceeded the appropriation, as shown elsewhere. We trust, however, that the Government will feel assured that it is money well spent, and that it will receive the approval of all bee-keepers, regardless of party predelictions. The six inspectors have done a good work, and we hope the Government will see to it that the same inspectors are appointed again next year. It may require several years of constant work to clean up the pest, but we believe it can and will be done. There is another great feature in connection with this work that must not be overlooked. That is the educative influence of the inspectors calling upon and giving instruction to those who are most in need of it. This in itself cannot fail to give a stupendous impetus to the better care of the bees, and greater production of honey.

SPLENDID PROGRESS

By JNO. H. REED, Mimosa, Ont.

The snap-shot of my small apiary was taken in the rear of my dwelling to show the bee-hives and honey house. After the close of the honey flow of 1905, I purchased two colonies, fed them sugar syrup, and wintered outside. Next season they gave me 200 lbs. honey, and increased to nine. This year, 1150 lbs. was secured, and the nine increased to twenty-six.

The bottom of my wintering-box is levelled, and four colonies set on it, and as soon as the honey flow is over I prefer to put my bees in shape for wintering. One comb being removed from the brood chamber, I spread the nine remaining and feed sugar syrup. I do not have to lift my hives into the wintering box, but tip it over the four hives, which have been moved into the center, back to back.

I pack around with dry spear grass also over the top of the frames, taking off the honey board, as I do not want any sealed cover over my bees in our cold climate.

I am sure my bees will come out in the spring nice and dry. If there is any dampness it will be on the outside of the packing, where it can do no harm. The entrance to the hive is 2¼ by ⅜ inches. The spout to keep back the packing is 4 by 4 inches.

My wintering box is high enough to allow a super to be put on in the spring, as I want them nice and warm to brood up.

I prefer to feed liberally in the fall, and satisfy myself in the spring that each colony has enough stores, but not too much. If any are short I would give sealed stores in preference to feednig syrup. Keep the bees snug and warm. Do not disarrange their brood nest.

F. J. MILLER (London, Ont.)
PRESIDENT OF ONTARIO BEE-KEEPERS ASSOCIATION

Give the bees a reasonable chance and they are sure to use all their energies to fill the hive with young bees, and will do it if they have a good queen. Why should the death rate be so high in wintering bees either in the cellar or outside?

If any of my 26 colonies go under this winter, I think it will be because I divided too much, or one or two may be queenless.

Now, Mr. Editor, I hope all of those bright, intelligent bee-keepers who made our late convention at Toronto so interesting, will give us a little of their experience, and with you, make our C.B.J. indispensable at least to every bee-keeper in Canada.

[Mr. Reed has indeed made splendid progress. His system of wintering is good, but we think he makes a mistake in removing his honey-board altogether. If it is broken loose from the top of the hive just before packing on top, the bees will not be able to seal it again until next spring. If it lays loose on top, it will permit of ventilation and at the same time allow the bees the freedom of the top of the hive in passing over the frames. This we consider a great advantage. We thank you for your interesting letter, and hope our other friends will follow your example and advise. The cut of Mr. Reed's apiary appears on our first page of cover.—ED.]

Notes and Comments

By J. L. BYER

BENEFITS OF CO-OPERATION

Under the above caption, there appears in the "Farmers Advocate" for Nov. 21, an editorial, setting forth some of the advantages of Co-operation as it is being applied to the fruit growing industry of Ontario.

As Co-operation came in for considerable discussion at the recent Ontario Bee-Keepers' Convention, an extract from the editorial in question may perhaps be of interest.

"No previous development in the fruit growing industry has promised such large and far-reaching benefits as are being brought about by co-operative organization in packing and marketing. First organized as the possible solution of well-nigh hopeless conditions, these associations have been the means, in recent years, of doubling, and in some cases trebling net profits to the growers, and even in the present season of inordinate scarcity and high prices for apples, they have proven of substantial benefit to their members. One of the leading co-operative apple-packing and shipping associations had this year sold practically its entire pack for $3.00 and $3.50 per barrel to an American buyer, which is fully 50 cents better than was paid by the same man for equally good apples, in the same district, to growers outside the Association. He could afford to pay more to the Association, because he was sure of the packing and could secure thousands of barrels of assorted varieties without travelling all over the neighborhood to pick them up. This is but one instance of many that might be quoted. It is conservatively estimated that, taking the Ontario co-operative associations all round, their 1907 output should easily net an average of $2.00 per barrel, or say $2.50 or $2.75 barrelled and delivered at station." In the face of such evidence, no gainsaying the fact that co-operation has been of immense benefit to the fruit growers; whether the system would do as much for the bee-keeping industry is another question. While the two industries differ very much, yet both are confronted with somewhat similar difficulties in marketing their products. The honest and careful apple grower has to contend against the badly packed and poorly assorted product of the irresponsible or dishonest grower, just as the GOOD honey producer is UP AGAINST the purveyor of GREEN GOODS. In this part of the deal the honey producer is, aside from co-operation, in a worse position than the fruit grower, as Government supervision has, in the case of the latter, stepped in and helped to regulate matters to a great extent. The writer, while in sympathy with the aims and objects of co-operation, has doubts as to whether the system will, just at present, sufficiently interest the rank and file of the producers to an extent that it could be made a success.

It will be noticed in the editorial from which I have taken an extract, the reason leading up to co-operation, viz: "First organized

as the possible solution of well-nigh hopeless conditions." While it may seem contrary to good business ethics, yet in all cases where co-operation has been adopted, just such conditions have been the "why and wherefore." While I may be greatly mistaken, yet I venture to make the assertion that as regards co-operation in the bee-keeping industry, history will again repeat itself.

In Gleanings Dec. 11th issue, Dr. Miller takes exception to my statement wherein I say that I see no advantage in feeding for winter stores, syrup as thin as equal parts of sugar and water; and he points out that with the thin syrup the bees make certain chemical changes that make it more fit for winter food than is the case when syrup of the "two to one" consistency is fed. Both the "Doctor" and Editor Root remind me that syrup fed of the proportion of two pounds of sugar to one of water is apt to granulate unless acid is added, and they wonder if I can add the acid as well as the bees can. To be frank, I believe that a whole lot of "bosh" has been written about the liability of thick syrup granulating in the combs. Under certain conditions I have noticed some granulation with sugar syrup and also many times noticed the same thing with stores of good clover honey. Can anyone make the positive assertion that the thin syrup NEVER granulated? Personally I will have to admit that my experience has been so limited with the "thin" article that I can make no statement along that line. The main one however is the fact that I have fed thousands of pounds of this thick syrup to hundreds of colonies and have never yet lost a SINGLE COLONY so fed. In fact I have often thought it would pay me to feed heavy with sugar every fall, as the only severe winter losses I have ever had was when there was a percentage of honey dew in the hives. As to acid, I have never fed a single oz. of it in any form in all the feeding I have done. In the face of these actual results, is it any wonder that I regard the granulation of thick syrup as an insignificient factor as far as wintering is concerned?

Without doing any thinking I could name at least half a dozen extensive apiarists who feed the thick syrup with good results. As a "clincher" let me quote from the pen of so good an authority as our esteemed friend W. Z. Hutchinson, in November Review, "Sugar syrup for feeding bees does not need the addition of tartaric acid, vinegar or honey, as recommended by some, to prevent granulation; at least that has been my experience and I have fed barrels and barrels of sugar, beginning as early as October 1st and continuing the work until the middle of November, when it is necessary to use a feeder UNDER the hive, and use the feed hot to warm and rouse up the bees to get them to come down after the syrup. Thearetically early feeding is preferable, but I have yet to see that the time of feeding has any great bearing, and the crystalization of pure sugar syrup has never proven any obstacle." While nothing is said about THICK syrup, for obvious reasons no THIN syrup would be fed in November.

The Review has a new contributor in the person of Mr. Elias E. Coveyou of Petasky, Mich. Although Mr. Coveyou is only thirty years old, judging by his first article and by the introduction given by Editor Hutchinson, he is quite able to make some of the older members of the fraternity "sit up and take notice." In describing his first start in business for him-self, the following paragraph struck a responsive chord in the heart of the scribbler of these notes.

"I remained at home and ran the Apiary, until I was twenty-three years old, when I started out for myself with nothing but my bare hands and my experience, I began operation by going in debt for forty-four colonies; moving them to Boyne Falls, and starting what is now my Charlevoix Co. yard. These bees produced a little over 5000 pounds of honey that year. I bought eighty-seven more colonies that fall, built my first bee cellar, wintered the bees successfully, and the following year secured 16000 pounds of honey. I have been in business for myself six years, and now have three apiaries, a wife and two boys." By changing the names of places mentioned and cutting out the bee cellar, the foregoing describes the writer's experience almost to the letter. While as far as bee-keeping is concerned, I gladly yield the palm to friend Coveyou, but when it comes to his last mentioned "articles of stock in trade," he is not in the race. Not only have I a "wife and two boys," but two girls also. Lest I should arouse false hopes in the hearts of some languishing bachelors, let me say that bee-keeping does not ALWAYS cause the acquisition of such valuable assets, in fact I know of some good bee-keepers who have been in business for more than "six years" who have not yet a WIFE, to say nothing of "boys and girls." It is all a matter of locality!

The plural-queen system furore, seems destined to be short lived. Its chief sponsor, Mr. E. W. Alexander, in Gleanings for Dec. 1st, admits that all queens but one in each hive, disappeared about Oct. 20th. Mr. Alexander thinks that the queens in the fall being smaller and more active, are inclined to be more pugnacious than is the case in the early part of the season when they are heavy with eggs, but Editor Root thinks that the bees themselves, on the grounds of economy and retrenchment, see to the destruction of the extra queens.

Aside from the POSSIBILITY that colonies with more than one queen, will not swarm, methinks that very few if any benefits deriving from the plural system (even if it were practicable) have yet been offered. No trouble with good wintering, and good queens, to have colonies boiling over with bees in time for the honey flow, when there is one queen in the hive. What more could be desired if there were half a dozen queens in the hive? While further developments re the plural queen system will be awaited with interest, personally I believe that it will never be practical in the true sense of the word.

HOME APIARY IMPROVEMENT AND HONEY PRODUCTION

By PROF. SURFACE, HARRISBURG, PA.

In our Association meetings much time is given to discussing the problems of the advanced bee-keeper, and they are many. This is justifiable and helpful but we wish to present a topic of importance in the interests of the home apiary and the small honey producer. We know that bees, as generally kept, are not as profitabe as they might be, and many persons are missing the benefits of their excellent products. Some one may say that if every person kept bees there would be no sale for honey, and thus the expert bee-keeper would not be justified in continuing in the business. However, this is to be compared with the poultry industry, in which a great many persons are interested for the sake of producing enough eggs and poultry for their own home needs, and there is abundant opportunity for success by the extensive or commercial poultryman; yet we do not advocate the keeping of bees by all persons, as such a measure is impractical. We wish to say a few words that may help the ordinary small bee-keeper who may have a few colonies, and who may be obtaining only discouraging results from them.

To obtain better results one should first make a study of the causes of failure, or of poor results. Among such causes in the home apiary, we may enumerate the following:

1. Lack of modern hives, and the attendant loss from undetected, queenless condition of colonies, unchecked bee-moths, bee diseases, inability to introduce new queens, remove drone comb, etc.
2. Loss by absconding swarms.
3. Failure to provide winter stores by fall feeding.
4. Failure to make proper winter protection.
5. Failure to practice stimulative feeding in the spring.
6. Failure to keep individual hive records.
7. Failure to select queens and drones for propagation.
8. Failure to introduce really good queens.
9. Failure to give the bees prompt attention at the proper time.
10. Failure to keep up to present times and keep bees in modern methods by reading journals on bee-keeping, and by attending the meetings of bee-keepers.

Let us briefly discuss each of these in turn, as an indication of how the apiary may be improved in consideration of the respective topics:

1. Lack of modern hives.—If I were reduced to only two implements in successful bee-keeping, one should be a modern hive with moveable frames, and the other should be a smoker. Without the latter the bees cannot be controlled, any more than a horse can be managed without lines, and without a modern hive it is impossible to see what is taking place, and remedy an evil as soon as it occurs. For example, the colony may become queenless and finally perish from lack of a queen, and their condition may not be detected in the old box hive until it is quite too late. The larva of the bee moth may be doing considerable damage in a box hive, with no external evidence of such trouble, and consequently it will be unchecked, while in a modern hive its presence could be detected and it could be destroyed. Drone comb can be seen and destroyed, or inserted, as desired, in the proper hive. The evidences of disease of bees may be seen at once in a modern hive, and such treatment can be given that will effect a cure, while with an old-style box hive, nothing is to be recommended for a diseased colony of bees besides consuming it entirely by fire, or transferring and treating in a modern hive. Queen introduction is very easy with modern hives, as the undesired queen can be found and removed before introducing the new one, and, in fact, most successful apicultural practice is made possible only by the use of a modern hive.

2. Loss by Absconding Swarms.—We find in Pennsylvania that this is a serious source of loss to some bee-keepers. Not only does the owner lose the value of the bees, but also by permitting swarms and the reduction of the number of bees in the hive, he loses considerable honey that would otherwise be produced. This can be avoided by clipping the wings of the queen and providing a board, reaching to the ground, for her return to the hive in case she should leave it; or better, by the use of a modern queen cage. Also by

merely tacking a strip of queen-excluding zinc over the entrance of the hive, the bees can continue their work, but the queen cannot depart. There is some controversy concerning the ability of bees to accomplish the best results when forced to go through the queen-excluder, but the chief harm we have seen from this is the loss of occasional loads of pollen.

Methods of preventing swarming, or of reducing this impulse, should be studied and practised, but this is not within the scope of this paper, and we shall not elaborate upon this one topic.

3. The provision of winter stores by judicious fall feeding.—This is very necessary for successful bee-keeping. It is our opinion that no colony should enter the winter without at least thirty-five pounds of honey alone, besides the weight of the hive and frames, and forty-five pounds would be better. By examining the colonies in the fall, it can be found if they have sufficient stores, and if not, they should be fed granulated sugar dissolved in water, in accordance with directions for feeding published in the bee journals and in books on this snbject.

4. Proper winter protection consists in covering the hive with an extra cover so tightly that there will be no chance whatever of wind blowing into it, closing the entrance to an opening perhaps one-fourth by three inches, and either protecting the apiary by sheds or windbreaks on the windward sides, or, for this north latitude, placing bees in cellars or caves, or burying them. It has been demonstrated recently, that, in burying bees for the winter, a sandy soil is an important and desirable feature. It appears that the porosity of such soil permits of a certain amount of needed ventilation.

5. Stimulative feeding in early spring can be made to build up a strong colony in time for fruit blossoms. The increase of the large colony thus produced, will be devoted to storing nectar, especially during the white clover flow.

It is an easy matter for a small bee-keeper to try stimulative feeding for a few colonies, and learn for himself if the practice pay sufficiently to be continued.

6. The keeping of individual hive records is one of the very important items in home apiary improvement. The hives should be numbered and a note book should be carried in the pocket for the purpose of making records of any point worthy of note, as soon as it occurs. Even the honey sections placed within the supers, should bear the respective hive number upon each. This is for the purpose of comparing the actual production of different hives in regard to the amount of daubing with propolis, the fullness of the cells and sections, the number of bee ways left open, the whiteness of the cappings, and other points, besides the very important one of the actual annual yield from each colony. It will be found that there is individuality of the colony shown in each hive of all the various races, besides the temper or activity of the bees comprising the same. The important bearing of this, is to produce queens and drones from those colonies that show especially good qualities, such as giving the least trouble with burr combs or propolis, and which produce the fullest sections, with the neatest, whitest honey cappings. Some colonies may be found to do well in quantity stored, but the comb honey may have a watery appearance, due to the liquid coming into contact with the capping. Some colonies of bees avoid this, and make the entire section snow white in appearance. Every pound of honey taken from the hive should be recorded under its respective number in a note book, and THE PROPAGATION OF QUEENS AND DRONES SHOULD BE FROM COLONIES THAT ARE MOST DESIRABLE IN EVERY REGARD. The idea of select DRONES may not have apparent value or appear as forceful to some persons as the subject justifies. Much stress has been given to the subject of large or handsome queens. Recently the tendency is towards apiary improvement by producing queens from colonies which are making unusual records in honey production. This is right. This method means to select queens of the most desirable kind, and it is only proper to go a step further and permit the production of drones in only such colonies. In all weak or undesirable colonies the drone comb should be entirely removed, and we have even gone so far as to set full frames of drone comb in the middle of the brood chambers of desirable colonies for the purpose of producing an abundance of drones from such. Also, when the formation of queen cells is commenced in full colonies, it is possible to destroy these, and set into them queen cells from those that are more desirable; or at least remove the larvæ from the queen cells of colonies which

may not be the best according to the records, and into these same cells insert larvæ from the best colonies, being sure to obtain them not more than two days of age from hatching. We are keeping bees for honey, and not for the purpose of maintaining beautiful insects on the premises, and for this reason the selection of queens and drones should be based upon the amount and condition of the honey produced, the temper of the bees, and such other features as the apiarist may wish to emphasize.

8. A good queen does not necessarily mean the one that is beautiful in color, nor always one that is large in size at the time of receiving the same by mail. A good queen is one which keeps the hive so well filled that the workers are forced to put in double time on the general order of "upstairs with the honey." A good queen is one that has a record in her ancestry, not of mere purity of breed, but of actual work performed. It is advisable for the small apiarist occasionally to introduce such a queen, and then make an effort to propagate her strain. From one good queen an entire apiary can soon be worked over to become her individual strain or kind. We should warn beginners and the smaller bee-keepers against the general introduction of queens of several different kinds. After their first year the results are liable to be a hybridization that may be quite undesirable, but as we cannot at present foresee the results of the importation of so many different races of queens in one apiary, it is better to "make haste slowly" and "hold fast that which is good." It is yet our belief that a good, active strain of Italians, making a record for honey production, is the best that can be obtained for all-round purposes.

9. The bees should be given close attention during certain seasons of the year. Even the keeper of the home apiary should realize that, for the short time he works with his bees, he is liable to obtain ten times as much profit as can be had from the same amount of time and effort expended upon something else, that may perhaps need his attention at the same time. The important periods of the year for watching the bees, are during the month of September, or but a little later, to see that winter stores are present in abundance, and feed if necessary; then during October or November, see that chaff cushions are placed on top of the hives to cover the bees entirely and keep them warm, and especially dry, by absorbing moisture, and also see that the hives are covered or protected by being placed in proper winter situations. Next, in the spring of the year, prevent too frequent flying when the air is becoming warm, but the ground may yet be covered with snow, and result in spring dwindling. At that time we would recommend restraining the bees with wire netting over the entrance, after making sure that they have sufficient stores. In our opinion, one flight per month, for cleansing purposes, in early spring or latter part of winter is sufficient. Who differs and why? Stimulative feeding, shortly before the first blossoms, will come next in order; then watching the hives for the first whitening of the comb near the top bars to indicate date for placing the supers to receive stored honey, and at this time inspect for drone comb as one of the first evidences of their swarming, and remove the same from colonies in which drones are not desired; then a little later occasional inspections for queen cells; the clipping of the wings of the queen at any time seen is in order; the placing of queen traps and drone traps if desired, and the raising of nearly filled supers to place new ones beneath them, or extracting honey from the hives almost filled, in accordance with whether the product is to be comb honey or extracted, and watching occasionally through the summer that the hives do not become filled by an unexpected flow, and watching against robbing in late summer, will constitute nearly all the attention that the bees may demand for success in the home apiary. In many cases the owner may be able to look through the hives by giving less than five miutes to each, and this means that in the average apiary of the small producer an hour per week will be sufficient to keep the owner informed as to what is taking place. Of course, he should be wise enough and prompt enough to act immediately upon any hint that he may receive from the busy workers.

10. The bee-keeper, whether small or extensive, should keep pace with the times and learn the modern methods, in order to practice those that are tried and found effective. He can do this best by reading the bee journals and attending the Association meetings, and discussing the subject with his neighbor bee-keepers.

It is important that he know what is sufficiently proven to justify him in rushing headlong into a new practice. We commend him to consider the importance of being very conservative in such steps as introducing several different races of bees, attempting a plurality of queens, trying new devices and hives or methods of manipulation. The Agricultural Experiment Stations should take sufficient interest in all features of the business to conduct experiments and inform the apiarist as to what is profitable and reliable, and what is not to be recommended. He can then afford to act accordingly, without direct danger of financial loss to himself through experimenting where he may not have facilities nor time for conducting proper experiments.

LIMERICK COMPETITION
Cash for Mail and Empire Readers.

The success of the Limerick Competition, which has been running for the past few weeks in the Toronto Mail and Empire, has been so phenomenal that they have decided to raise the amount of prize money in the contest, which commenced Friday, Sept. 27, to $100.00. The person who sends in the best suggestion for the last line of the incomplete Limerick will receive $30.00. The other prizes are as follows: the second, $20.00; the third and fourth, $10.00 each; the fifth and sixth, $5.00; and ten consolation prizes at $2.00 each. It is probable that these contests will be continued from week to week, and the conditions governing them will be found in both The Daily and Weekly Mail and Empire.

HONEY-CARAMELS— 1 cup extracted honey of best flavor, 1 cup granulated sugar, 3 tablespoonfuls sweet cream or milk. Boil to "soft crack" or until it hardens when dropped into cold water, but not too brittle—just so it will form into a soft ball when taken in the fingers. Pour into a greased dish, stirring in a teaspoonful extract of vanilla just before taking off. Let it be ½ or ¾ inch deep in the dish; and as it cools, cut in squares and wrap each square in paraffin paper, such as grocers wrap butter in. To make chocolate-caramels, add to the foregoing 1 tablespoonful melted chocolate, just before taking off the stove, stirring it in well. For chocolate-caramels it is not so important that the honey be of best quality.

COMB HONEY

BY S. D. HOUSE, CAMILLUS, N.Y.

Mr. President and Fellow Bee-Keepers of the Ontario Association :

Your worthy Secretary has assigned to me the subject of "Comb Honey." Undoubtedly, more has been said and written upon this question than all the other subjects combined, in the category pertaining to apiculture. Under such circumstances it would seem almost impossible to add anything to what has been said and written, or to advance any new ideas.

The subject is the broadest and most difficult, as well as the most important pertaining to our favored pursuit.

The Apiarist who produces comb honey, in order to obtain the best results, must be resourceful and capable. He should be a quick and keen observer. He must be intelligent enough to quickly adjust conditions and circumstances.

It is an undisputed fact that there are no established rules or methods that can be followed that would be applicable to every season or to every locality. What is one man's meat is another's poison. Methods that would be successful in one locality would be disastrous in another.

In this latitude, a change in the weather conditions often spoils our plans, and makes it necessary for a quick change in operations to meet existing conditions, or we will suffer reverses, and loss perhaps, of a part or all of our season's labor.

First of all, then, every Apiarist, and especially every comb honey producer, should select a favorable location. Such selection having been made, the bee-keeper should have absolute knowledge of the extent, and sources from which he would derive the coveted nectar. He must learn at what times in the season the different bloom, or flora, will make its appearance, and then arrange his work and manipulations accordingly. Many keepers of bees labor under the FALSE impression that all that is necessary is to put on the supers and the bees will do the rest. They cannot understand why they do not get as much surplus as the other fellow. It is hard to enlighten such bee-keepers, and to that class what I may say will be of little use.

You have heard of the odd sayings of bee-keepers of the old school, which might be applicable to this subject at this time. About all they seemed to know

of the business was: "A swarm of bees in May is worth a load of hay; a swarm of bees in June is worth a silver spoon; a swarm of bees in July is not worth a fly." Another one was: "No bees, no honey; no honey, no money."

In this age of Apiculture, how true those axioms are. Are they not the real fundamental principles for successful honey production? I will take up those sayings to prove their truthfulness; and in doing so, will divide my subject into three parts. First, queens and bees; second, hives and manipulation; third, care and marketing of our products.

First, then, how shall we get the bees at the proper time to take advantage of the honey-producing flora when it makes its appearance. In order to obtain the greatest number of bees, we must have young and prolific queens. This brings us to a point of breeding bees, and one of the most important factors in securing those strong colonies so much coveted. We must have a young queen, bred from a strain known to have great prolificness, whose progeny are good wax pruducers and honey gatherers. You have observed the greater activity of a colony with a young queen; she seems to inspire the whole family with her vigor and youth for greater work. We have been breeding queens for half a century in a scientific way, and as a rule our queens are no better than fifty years ago: Why? because we have bred more for color and purity of race, than in selecting our breeding queens for endurance and prolificness, loosing sight of the most important qualifications. In order to RETAIN the greatest number of bees in a colony, we must control, or overcome the swarming impulse. Remember you can do a certain piece of work with a certain number of men in a given time, much easier and quicker than you could with one half the number of men. So with the bees; a strong colony will produce more at the right time than two colonies of half the strength. With a young queen we have taken away most of the desire for swarming. Herein lies the secret of success. Do not loose sight of the fact that the older the queen the greater the desire for the swarming impulse. This is in accordance with the laws of nature.

Starting with a young queen, the next important point is to keep that queen and her colony working to an advantage and to their utmost capacity. Commencing in the early part of April, we have the most critical point where we must exercise the most careful and best judgment in all of our manipulations during the entire season if we expect to be successful. A mistake at this time, or a failure to take advantage of every opportunity offered greatly diminishes our chance of securing the much desired result.

We must manipulate our hives so as to generate and retain all the heat possible, by contracting the brood chamber to just that size that will keep the queen laying; enlarging it from time to time to keep her and her family busy, and at the same time not to subject them to a loss from sudden changes of the weather. This requires both good judgment and work.

Here is where the hive plays an important factor. Instead of manipulatiug our apiaries by brood frames and section holders, we handle only hives, and parts of hives, and whole supers. By such manipulation, we reduce the cost of production to a minimum; an item that should not be lost sight of.

The most successful producer is the Apiarist who secures the largest yield for the time and money expended. One man will handle 300 colonies against another's 100 colonies with the same labor and expense; Therefore the hive is a primary adjunct.

The hives generally used are too large for securing the largest possible amount of comb honey according to the method I have adobted. While I advocate a large hive, I wish it to be understood that the hive in general use will not permit of practical adjustment of the brood chamber to conform with modern practice in producing comb honey, and I might say extracted honey.

To accomplish the desired result I have adopted the divisible hive, not perpendicular, but horizontal, with shallow brood frames about five inches in depth, a movable bottom and top, and all made with perfect joints. In conjunction with this, I desire to say that brood frames with heavy or thick top bars and narrow spacing is one of the causes for honey being stored in the brood chamber. The top bar should not be more than 7/8 in. wide and not over 3/8 in. thick, and spaced one-half inch apart, which will give a free communication above.

Right here I wish to call your attention to one point: never use soiled cloth covering over supers or the brood nest. It i

unnecessary with closely fitted joints, and will obviate the use of propalis; when we do away with the CAUSE for the use of propolis, there will be less of it gathered, and less travel-stained honey.

With the divisible hive, which consists of two sections during the winter, I proceed from the first to the tenth of April (in my locality) and examine each colony, and note their condition and the amount of stores on hand. I take away sealed honey from those having more than their requirements, and give to those short of stores; contracting and adapting the brood chamber to the requirements of each colony. Unless on special occasions, I do not open the hive again until fruit bloom appears. Then, by the use of perforated zinc I find every queen and clip one of her wings. By this time, or perhaps before, my bees will need more room in the brood chamber. This is given by adding another section of the hive. I now have a large brood nest of worker cells built on comb foundation.

After fruit bloom has gone, we should stimulate until clover appears. In this condition they are allowed to increase in strength until about June 10th. By this time we have very strong colonies of bees which are ready for the honey flow, and we are prepared to give the comb honey supers, when I proceed as follows: First remove two sections of brood chamber, or reduce the hive to one section; and with the use of the queen excluding zinc, we confine the queen to this small or shallow brood nest, on one that has the most sealed brood, and as little honey as possible, or an empty super frame filled with comb foundation.

We now add above the queen excluding division zinc, one or more comb honey supers filled with sections containing full sheets of comb foundation. Then shake or brush the greater part of the bees from the section of the brood chamber just removed, and place them upon a new stand, giving each one so placed a queen or a ripe queen cell. After placing on new stands about one third as many colonies as we intend to shake we put onto each an excluding zinc. Now the brood that we shake is placed over those first set out on new stands. As the prood hatches, these combs above excluder are filled with honey, and no further attention is given them until after the white honey season is over, when these combs are extracted, and one section of empty combs given to each colony that has produced comb honey, that they may lay up their stores for winter. In about seven days after the colony has been shaken, add another comb honey super, repeating this as often as the honey flow will allow. The comb honey super should be raised about the time the bees commence sealing the honey, thus preventing its becoming soiled or travel stained. This brings us to a close of the honey harvest, unless you are in a locality where surplus is obtained from buck wheat, in which case place surplus super above the two sections of brood chamber. Comb honey should be removed from the bees by an "escape poard" as soon as finished and the supers tiered up, one above the other, as high as convenient, in a room with the temperature not below 70 degrees. From ten to fifteen days later it should be fumigated by the use of Bisulphide of carbon. This is done by placing an empty super on top of tiers, using about one ounce of the carbon in a dish placed inside the empty super. Cover with a cloth and allow it to evaporate. Honey stored in this way will keep in perfect condition. Great care should be taken in cleaning the sections, and grading our comb honey.

Many large producers often lower the price of their products through poor judgment in grading and in carelessness in handling. Sections filled with combs that are to be carried over the next season should be kept from the light and air, or they will not be fit for further use. I have found from experience that they SHOULD NOT BE USED AT ALL. As honey stored in such combs will only be No. 2. at its best.

We should also unite upon a section of more uniform weight. As honey is being sold by the box more and more each season, present diversity of weight gives the consumer an equal value for his money, which causes dissat sfaction, and retards consumption.

The sale of our product should be concentrated in the hands of honest, capable business men which would enable us to maintain more uniform prices.

We should make use of every possible means to educate the people to the use of honey, and one of the best methods of attracting the public attention is an exhibition of honey; making it as attractive as possible. This must be done by the bee-keeper, not only at our

fairs and national exhibitions, but we should try to induce the wholesaler and retailer to make large displays in their windows, that will attract the attention of the people and tempt their palate to such an extent that they would become a purchaser at once. For an illustration —last winter after I had given a talk at one of our public schools, upon the anatomy and physiology of the honey bee, those students went home and said "Oh we must have some honey for supper." The result was that those school children bought every available box of comb honey in town and there was not enough to go around. The grocermen in town had purchased their usual winter supply and sold it all in about one hour's time, This is only ONE instance. We could make it a thousand. We as individuals or local association cannot do it alone.

But we should be united throughout the length and breadth of our land. The water that flows over the falls of Niagara, only needed man's genius and energy to develop its wonderful power, and when confined and converted, at great expense, for a purpose, it became a profit to man. So with us if we combine our energy FOR A PURPOSE, we can develop the honey market to an extent that would astonish bee-keepers as greatly as the powers of Niagara Have astounded the world.

Wax production might be considered as pertaining to this subject, but as I have already taken up much of your valuable time, I will leave this question for a future time, or for others to discuss, along with the subject of comb honey protection. I thank you for your kind attention, and hope I may have been the means of drawing out a thorough discussion of this all important subject.

A CHAPTER OF MISTAKES IN BEE-KEEPING

R. H. SMITH, St. Thomas, Ont.

From the title of the paper assigned to me, viz: A Chapter of Mistakes, one might be inclined to suppose that I had made a greater number of mistakes than other bee-keepers. While this may be so, I cannot bring myself to admit it. In looking back over my 27 years of bee-keeping experiences, it is easy to see what mistakes I have made that might have been avoided, and in this brief paper I would like to point out, for the benefit of those who are commencing their bee-keeping career, the mistakes I have made or have known others to make, that might have been avoided with profit. When the average person wishes to make a start in bee-keeping, one of the first mistakes usually made is to reckon the profits or results before the bees are secured. My first mistake was to get bees in a wonderful patent hive that had so many traps and contrivances about it that were neither use nor ornament, but were more useful as hiding places for moth, or places in which to deposit propolis. My next mistake was to invent a hive or rather an improvement on the hives then in use. Perhaps this was not altogether a mistake as there was plenty of room for improvement, still at that time with my limited knowledge of the subject, I consider it a mistake. A plain simple hive accurately made and fitted with a standard size of frame, is the best hive to keep bees in, for the simple reason that bees in hives of that description are more valuable when one wishes to dispose of them. Another rock or mistake on which we were nearly wrecked was in supposing that the more that the bees were allowed to swarm the more prosperous we were, while we found that almost the opposite was the case. We had often heard quoted the old rhyme "A swarm of bees in May," etc. In the average season in Ontario we found it better for several reasons not to allow swarming (if swarming were allowed at all) before June 15th, and then only allow a limited number if honey production was the object. A mistake commonly made is to commence bee-keeping on a large scale without a knowledge of the business or proper equipment.

It is better to spend some time with an expert bee-keeper, or become posted in the main principles of bee-keeping, and in that way avoid the disasters common to the inexperienced. I think a bee-keeper is an object of pity if, on a hot day in July he had about 100 colonies which are allowed to swarm naturally without clipped queens, and perhaps but few hives ready; he may surround the difficulty with hard work and get each and every swarm safely housed, probably by the aid of the honey flow, and to his astonishment and disgust he may find a few weeks later that his swarms have dwindled to a mere handful of bees in each hive, and many of them in a state of starvation, when to save them, he has to

double up to about the same number he started the season with. In the meantime the honey season is past and our friend has the experience if not much honey.

The queens too do not receive as much attention as they should have, and the mistake often happens that failing queens are kept over from one season to another because perhaps, the bee-keeper has paid a good price for them, or they have done such good work or are particularly handsome; where if he had studied his best interests from a dollar and cent point of view, he would have destroyed them at the end of the second or third season and replaced them with young and vigorous queens. Another mistake commonly made is to suppose that any locality will yield a good crop of honey every season, some districts are better than others for light honey, others may give a better return by yielding both light and dark honey in their season.

We often hear of good results being obtained in some distant locality, and we are apt to say if we were only there how much better off we would be. Far off pastures always look green; perhaps if we were there we might not do as well as at home. There may be as much difference in the bee-keeper, his system of management or strain of bees, that would make all the difference. It is a mistake to suppose that a bee-keeper is saving anything by only providing or using one extracting or section super for each colony of bees. In an ordinary season I would not use less than from two to four supers for each. When we began bee-keeping we did not use any supers, but made the great mistake (common in those days) of extracting from the brood chamber. I sometimes think it a mistake for a bee-keeper to brag about how many pounds of honey he can extract in a day, because if the quantity is large one is apt to think that a large percentage of his combs were not capped, and it is one of the greatest mistakes a bee-keeper can make to extract unripe honey and put it upon the market. Not only is the honey of inferior quality and liable to ferment or sour, but the consumer is dissapointed and not likely to repeat an order. It has been said that the introduction of the extractor has been detrimental to bee-keeping because some bee-keepers make the mistake of extracting too closely and often their bees are left without sufficient honey to supply them through the winter months.

In the fall of the year many bee-keepers make the mistake of neglecting to see that their bees have sufficient stores, and when the cold weather comes on finds it too late to supply them, and so a large percentage die the following winter and spring.

When marketing honey it is a mistake to suppose it does not pay for the time taken to put it up in an attractive form. How often do we see some of the finest honey, in sections badly daubed with propolis, perhaps bulged combs that are bruised and leaking or put up in soiled cases, any, or all of these things make a difference of from two cents to five cents per pound. Extracted honey, too, requires just as much attention; and if put up in glass jars do not make the mistake of using any but clear flint glass, neatly labelled, and with a tight fitting cover. This is one chapter of the mistakes that are made by bee-keepers, and many others may occur to you, but if the mistakes I have mentioned give rise to some discussion its object will have been attained.

M. B. Holmes: It falls to my lot on this occasion to open the discussion on Mr. Smith's very valuable paper; to note errors or omissions, in short, Sir, and paradoxical as it may seem, I am to discover (for our mutual benefit) the mistakes in "A Chapter of Mistakes."

I believe it will be generally admitted that the managing committee did a very noble act in placing that number on the programme, and that they were specially wise when they placed so intensley practical a man as Mr. Smith of St. Thomas in charge of it.

What do I mean by "Noble Act"?—simply this: That by the publishing of this Chapter of Mistakes through the medium of The Ontario Bee-Keepers Association, and accentuated by the discussion following it, a warning, a red light a danger signal is placed at the

shoals and reefs where, alas, too many have made miserable shipwreck and failure.

These are they who started well, meant well, and with neatly trimmed craft they set sail, and all went well for a while, till they strike that first mistake (that sunken reef where all had appeared smooth sailing) then in the confusion following they strike on other and worse mistakes until the wreck is complete.

A mistake is a wrong act un-intentionally done, and a noble trait of character is disclosed in the raising of the warning voice.

What would be thought of the person who drives into a sink-hole or a defective bridge and breaks his carriage and perhaps maims his horse, and goes on his way without setting up a danger signal, evidently wishing for the consolation of witnessing a similar misfortune to others?

He would be considered a low-down fellow, unworthy of respect and entirely lacking in the finer qualities which constitute a REAL MAN.

The references in the paper to rocks or mistakes on which the newly launched craft may be wrecked or damaged are very timely indeed: the warning set for the beginner who thinks he can make a better hive; the carpenter with a temptation.

Then the arrival of swarming-time, with a free hand, and few hives ready; a good point, Mr. Smith, deserving of special emphasis.

Next, that special danger signal set against extracting unripe honey; an ambitious individual anxious to get there first, but who becomes an object of pity and scorn as he does injury to his own interests and that of others by placing the thin, unripe article on the market. This red light of warning should be kept very prominent.

The mistake of having too few extracting supers is also noted; the position taken here might be assailed by some who claim that one super is quite sufficient, but in the main it is good advice, as (if in error) it would be erring on the right side.

But coming to the point; some one has said: "If the storm of adversity whistles around you, whistle as bravely yourself; perhaps the two whistles may make melody."

And, was it Davie Crockett's advice?

"Remember this when I am dead,
Be sure you're right, then go ahead."

In the midst of all these danger signals, so properly set in Mr. Smith's address, it would probably have made a good finish if he had told the beginner that the road to success was marked by a white light supported by a tripod, the legs of which are Information, Imitation and Incarnation.

Information sought earnestly and continuously. Imitation of those who have done well, and incarnation, the embodyment or example in person as nearly as possible of the noble men in the Bee-Keeping world, all the way from Rev. L. L. Langstroth, of precious memory, down through the years to this present, who have given the very best of their lives to the study of Apiculture, and then cheerfully and freely handed down to others the knowledge secured at great expense and by long years of patient toil and study.

A HOME-MADE WAX-PRESS

How to Extract Wax Most Efficiently with Simple Apparatus

(The Bee-Keepers' Review)

Wax presses of the screw-variety do their work effectively, but some of them are quite expensive, and I doubt if some of them will extract the wax more completely from old combs than will the simple apparatus described by Mr. G. M. Doolittle in the American Bee Journal. Mr. Doolittle says :—

The steam wax-extractors I know very little about, except the smaller ones of the past, such as the "Swiss," etc. These did their work quite well, but were slow, and require a cost for fuel which is eliminated with the solar. But for a lot of old combs, filled more or less with cocoons, pollen, etc., I know of nothing better than boiling water in a caldron or other kettle fixed something as follows:

Instead of hanging the kettle over the fire as is usually done, take a measure of the kettle on the outside, a little way up from the bottom, and go to your blacksmith and tell him you wish a piece of old, heavy wagon-tire welded so that the inside shall represent your measure. To this you want three or four (the latter being preferable) square or round bars of iron welded at equal distances apart, for four legs. These should be of suitable size to give strength enough to support the weight of the kettle and contents, and long enough to raise the kettle from four to six inches from the ground at its lowest point.

After getting the kettle-holder home, place four flat stones just under the surface of the ground where you wish the kettle to stand, at proper places, so that each leg will rest on one, having it at such a point or place as will be handy for all the work done with such a kettle, such as heating water for many purposes, boiling food for stock, etc., for the smallest part for our iron friend will probably be the rendering of wax.

After once having the kettle fixed in this way, you will never go back to any of the old ways of "hanging" a kettle, if you are like the writer. Besides the kettle you will want a sack made of burlap or some other stout, open cloth, which you are to fill with the old comb, stamping it in so as to get all in as compact a condition as possible.

Next take a piece of four inch soft-wood plank, or two pieces of two-inch plank spiked together will answer, though not quite so good. Now, round one side of this, so it will fit the bottom of the kettle, leaving the other flat. To the flat side fasten (by cleats or otherwise) a standard of suitable length, which should be flattened at the top and have several holes bored in it. Then get a 3x4-inch scantling, or a suitable pole from the woods, and mortice through it near one end for the top of the standard you have made, boring a hole through it in an opposite direction for a pin or bolt to pass through it and the standard. Besides this you will want a log-chain, which is usually near at hand about all farm houses. Having these things we are ready to fill the kettle two-thirds full of water and start the fire under it. In doing this use only light fuel so as not to have a hot fire after the water boils; for if otherwise, it would be too warm to work agreeably around it,

and after considerable wax was in the water it might boil over.

Having the sack stamped full of the old combs, tie the mouth of it and put it in the boiling water. After allowing it to boil three or four minutes, take an old hoe and press and squeeze the sack against the sides and bottom of the kettle, rolling it over each time as you press. The wax will rise with each pressing of the sack; and if the old comb is not all in the sack, you can soon raise the mouth of it out from the water, and after it has cooled a little so you can handle it, untie, fill up and re-tie again, and so on till all is in.

When all the old comb is in the sack, and has been worked with the hoe several times, fasten each end of the log chain to the ears of the kettle, or if the kettle has no ears, fasten on either side of the kettle holder, while the middle of the chain is to be fastened to the short end of the scantling or pole. Now put the rounded plank end of the standard on the sack and sink it to the bottom of the kettle, when the top end is to be inserted in the mortice in the pole, and the pin or bolt put through the desired hole. Next, go to the long end of the pole or lever and see how you can make the wax rise by bearing down. When bearing down sway the lever back and forth, and from side to side, thus liberating the wax. If you have your lever long enough, and things fixed as they should be, you will bring hundreds and thousands of pounds to bear on the sack, and thus have a better pressure than with any of the wax presses made, as none of these, with which I am acquainted, can give a rocking pressure while squeezing.

After a little you will have reduced the bulk in the sack so you can again shake the debris down and re-tie the sack so that the plank end will cover the whole, when with another pressure with the rocking motion every last particle of wax can be brought out, to rise on the top of the water in the kettle. Being sure that the wax is all out, you can hang a weight on the lever and leave it. Don't dip off the wax unless you have lots of time, and consider it only fun to do so, for I assure you that the next morning you will find it all caked nicely on top of the water, when you can break it up and get it ready for a second melting and moulding, which all wax should have before being placed on the market or for using in making foundation.

After taking off the wax, take out the sack, empty out the refuse and rinse and dry the sack, when it and the rest of the implements used in this rendering are to be stored away for future use.

I know the description of this seems quite long, but I believe that in practice it is the shortest known process to get out a large lot of wax from old comb, and has to its advantage that no large sum of money has to be paid out for a wax press or extractor. If you think the iron-kettle holder too expensive, set the kettle on three stones. If stones are used, they should first be subjected to heat, else they may fly to pieces and upset the wax.

There is one feature about the above arrangement that especially recommends it, and that is the continued releasing and reapplying of the pressure while the slum gum is submerged in hot water. It is upon this feature that the Hershirer

press depends for its effectiveness. When the pressure is removed, the hot water rushes into the mass; when the pressure is again applied, the water is forced out, bringing with it a portion of the wax. This process continued, as it will be with the rocking movement, finally brings out the last possible particle of wax. I am inclined to the belief that, especially for old combs, no plan is superior to this one described by Bro. Doolittle.

HOW SWARMS CHOOSE A LOCATION

A Few Incidents to Prove that Scouts are Sent out after the Bees are Clustered

By G. C. GREINER, in "Gleanings"

If I am not mistaken, it is the general opinion of all experienced bee-keepers that young swarms, before leaving the old premises, send out scouts in search of a suitable place to start housekeeping again. I have always kept a number of decoy hives scattered in and near my apiary to catch stray swarms. The result has been quite gratifying. Almost every year I have had one or two such swarms take up their abode in one of these hives, and occasionally one of my own swarms would hive itself in one of them. My experience during the last twenty-five years or more has established the "scout" theory--a settled question in my mind; but not until this past season did I have the opportunity to make observation along this line that may be accepted as positive proof.

The condition of my apiary during the fore part of the season was something like this: After a heavy winter loss, which, by the way, made itself conspicuous after the 25th of March, when all my bees, with very few exceptions, brought pollen freely, a large share of my outfit consisted of depopulated hives scattered all through the apiary. As soon as any colonies were discovered missing, their hives and combs were thoroughly cleaned, combs containing honey of any amount sorted out, and the hives with the empty combs left on the old stands. The entrances of all these hives were left open full width, and in walking through the yard a very few bees could be noticed going very quietly in and out of some of these hives at any time. In the forenoon of June 10th I noticed at one of the hives an uncommon commotion. A dozen or two of bees were running in and out of the entrance in a seemingly greatly excited state of mind. Some were on the sides and back trying every joint to find an entrance, and the whole affair had the appearance of a very severe case of robbing. At first I mistrusted that some of my bees had found overlooked honey that caused them to make this display, but found on opening the hive, that this was not the case. Instead I noticed another dozen or two running up and down the combs in the same excited condition. I also noticed, what afterwards proved to be conclusive evidence, that all the bees were a very fair type of Italians, not one black one among them.

As I was quite interested in their queer behavior I watched them all the afternoon and forenoon of the next day, without seeing any change on their part. About two o'clock, while looking at them again, I heard in a southerly direc-

tion, where, at a distance of half a mile, an elm grove is located, a faint rumbling noise, and at the same time a few flying bees made their appearance. The rumbling, as well as the bees, increased at a rapid rate, and in less time than it takes to write it, I was surrounded by a swarm of bees. After circling around for a few minutes they began to thicken over the hives of the previous excitement, and soon this one and the adjoining ones were covered with bees. As they began to enter, their preference seemed to be centered on that particular hive. The few that had entered the others soon left again and joined the multitude, where, almost instantly, house-cleaning was made the order of the day. The swarm proved to be of the same type as the bees that had been to work at the hive before they arrived—purely marked Italians.

A few days later, June 16, just the same incident took place, with the exception that the scouts were black bees, and that the swarm came the same day that I had noticed them investigating another hive. They arrived at about the same hour, between two and three o'clock. The swarm as well as the scouts tallied with one another. They were all of black German blood.

It may begin to look like a big story when I say that, two days later, a third swarm adopted another one of my hives for its home under similar circumstances. Nevertheless, this was the case, and I have to stretch it still further. A fourth one came to me the 23rd, and still another the 7th of July, making in all five swarms that availed themselves of my hospitality during this season.

The facts which I have gathered in connection with this subject would indicate that, as a rule, bees cluster before they send out scouts; or, if scouts are sent out before they swarm, they cluster before they leave for their new home. Although some of my own bees took possession of an empty hive directly before clustering, my observations during this campaign seem to oppose our accepting it as a rule. All five swarms arrived here in the afternoon between two and three o'clock, after they had plenty of time after swarming to cluster, send out scouts, and wait for their return before leaving, while all my own young swarms issued in the forenoon. The latter all clustered in the usual way, waiting for me to provide homes, when they all had the same chance to help themselves to any of my empty hives as the stray swarms. If scouts had been in search of a home before swarming, why did my swarms, or some of them at least, not hive themselves?

This would show that sending out scouts is a matter of compulsion. If bees are neglected by their master, and left hanging in a tree indefinitely, they have no alternative but to provide a home of their own. This is the time when they make use of the scouting gang; and as soon as they have found a suitable place, and have communicated the news to the clustering swarm, away they go, and no common means will stop them.

Sometimes I had swarms leave for parts unknown after clustering, when I was a little too slow in getting ready to hive them. In such a case scouts might have been out

before swarming, or else they ran across something suitable in short order; but the swarm clusters before leaving, just the same.

As an exception it may be stated, and I had a little experience in that direction too, that young swarms "light right out" without stopping to cluster. Then, of course it may be accepted as a probability that scouts had been successful in finding and preparing a home before the swarm issued.

There is still another case in this connection that might be mentioned. Once in a great while a swarm, after being hived in the customary way, and remainining seemingly contented for a day or two, will unceremoniously leave for other quarters. If their scouts had been sent out when the swarm first clustered, they would have been on an exploring expedition a long time—too long to make it seem probable. Besides, tracing the swarm to its new location, which may be some distance from the old clustering place, might cause them some trouble. I am rather inclined to think that, during their brief stay in their new home, they became discontented for one reason or another; and, to gratify their notion, scouts had secured a place more to their liking. That they knew where they were going when leaving, would be an acceptable conclusion from the fact that I have followed them directly to a hollow tree.

The number of bees that are detailed for scout duty by the swarm, I have found to range from fifty to seventy-five, with every one of my first three swarms. If other gangs are employed at the same time in different places, the above numbers would be increased accordingly. I can not give particulars in regard to the other two, as I was not present when they made their display, but found them in proper working order at night.

HONEY CAKE.—One quart of extracted honey, ½ pint sugar, ½ pint melted butter, 1 teaspoonful soda, dissolved in ½ teacup of warm water, ½ of a nutmeg, and 1 teaspoonful of ginger. Mix these ingredients, and then work in flour and roll. Cut in thin cakes and bake on buttered tins in a quick oven.

THE IMPORTANCE OF POLLEN

By J. GRAY, in British Bee Journal

Some time ago I carried out a series of experiments with pollen. My object in doing so was to ascertain if bees that have reached the imago stage are physically injured by being debarred from same. The result of these experiments led me to the conclusion that there are circumstances when bees are much better without pollen, and to give it to them at such times causes physical suffering. And I ask myself the question, Does a virgin hatched in a nursery need pollen in her candy? The first experiment proved that artificial pollen (pea-flour) in candy made on the good plan, i. e., honey thickened with caster-sugar, caused the virgin and her few attendants to be badly affected with dysentery; while that made with fine oatmeal was not so bad in its effects. But cages supplied partly with pollen candy and partly with plain gave still better results, and those cages with plain "goods," without any pollen at all gave the best results. The query then arises, Are there not sufficient pollen-grains in honey alone to supply the needs of the adult bees?

My next experiment was in wintering stocks; and in this direction I found that driven bees placed on combs partly filled with honey, supplemented with plain candy, came out best; those placed on combs of honey with pea-flour to make up the shortage wintered the worst, those with oatmeal candy coming out midway between the two. I have also wintered stocks short of stores with pollen candy, and each time they suffered with dysentery, while those with plain candy wintered well.

The result of this series of experiments have led me to the following conclusions.—1. Bees in confinement should not be pollen-fed. 2. During the time that bees are required to be kept perfectly quiet and very rarely take flight they need no pollen at all, and if fed on it will suffer in being unable to discharge the fæces, while if cleansing flights are not possible they will suffer in consequence. 3. That great care is required if pollen is given in early spring to cause brood-rearing, or the loss in unnecessary flights will counterbalance the gain in brood.

The Montreal "Daily Witness" is to the fore as usual. In its issue of Nov. 26th is published what it terms its "Proclamation Edition." It sets forth fully the wonderful resources of Montreal as a manufacturing metropolis. Montreal is Canada's greatest city in point of wealth and productivity, and to this the "Witness" does full justice, and well it may, for it is also Canada's greatest newspaper, cheapest and brightest. It should be in every home in Canada.

WATER FOR BEES

By DR. C. C. MILLER, in Gleanings

I wonder what proportion of bee-keepers pay any attention to the matter of seeing that their bees have any chance for water except as they may find it for themselves. Certainly water must at times be of the utmost importance, considering the number of bees that risk (and also the number that actually lose) their lives in obtaining water.

There is probably no time when it is more important to provide drink for the bees than in the spring. When a bee starts out in a chilly wind, makes a long journey, and loads up with ice-cold water, one might naturally expect that it's chances for return to the hive alive and cheerful would not be the best.

Any sort of provision in a regular place will greatly help by saving the long journey and sometimes fruitless search. Additional help will be given if the place is sheltered and sunny. In addition to this, if the water be warm and provision is made against drowning, any reasonable bee ought to be satisfied.

Some claim that the reason why bees frequent cess-pools and other filthy places for drink is because of the warmth of the water found there. In Germany some keep the water warm by a lamp, somewhat after the fashion of a poultry-brooder. That is troublesome, yet it might pay. But if water is kept in a sheltered, sunny place, there will be no little gain in the matter of heat.

It has just occured to me that a solar wax extractor (which is never used to melt wax in early spring) might be utilized to keep water warm for the bees. The sun would certainly warm the water; then let there be a leak in such a way that the bees would get it before it had a chance to cool.

In many places bees can look out for themselves without making any long journey, by visiting watering-places of horses and cattle, also pumps, and these may be the watering-places and pumps of neighbors. Bees in such places are a great annoyance, sometimes starting hard feelings between neighbors. Generally, too, many bees are drowned in such places. To avoid this annoyance and loss it is well worth while to have a special place where the bees may find water all summer long.

But such a place should be provided BEFORE the bees have formed the habit of visiting a pump or horse-trough. That habit once formed, the bees will not pay the slightest attention to a new place. They may, however, be enticed away to a new place, if it be only a few feet, or even a few rods distant. Cover up the pump or horse-trough with horse-blankets or something else, so the bees can get no water, and set a vessel of water as close as possible. Next day move it just a little away, and each day thereafter move it a little more. After getting a little distance away, you can move it five or ten feet each day. Keep the old place covered up for a few days, and afterwards keep water CONSTANTLY at the new place, and there should be no more trouble.

What arrangement shall we have to provide the water? Any pail or tub would do, if bees would'nt drown. A vessel working on the atmospheric-pressure principle is

good—that is, a glass jar turned upside down on a board with little channels, so the water will come down as fast as used out. But it needs such frequent attention that there is danger of neglect; and, besides, one doesn't want to give time to such things unnecessarily in the busy season. Whatever is used should hold a goodly supply of water; and then if one aims to fill it up when half emptied, there is not much danger that it will be often entirely dry.

I have used with a good deal of satisfaction a six-gallon stone crock with a small armful of firewood put into it endwise, and water then thrown in. All the better to have the wood partly decayed.

But the best thing I have ever tried is a tub, or half-barrel, with cork chips or cork dust thrown on the water. You can get such material from any grocer who gets foreign or California grapes, cork chips being used for packing. Put in all the cork chips you can without getting in so many that the bees cannot reach the water. The bees are just as safe walking over it as on the ground; so far as I can see it's perfect, and I don't know how long it will last. It was filled with water whenever it was convenient, or whenever I thought of it; and if that was not for days no harm was done. Of course, a smaller vessel would work too.

Simple Enough

'Why does the farm boy beat the city boy so often?'

'That's easy.'

'Let's have the answer.'

'The little red schoolhouse offers a better curriculum than does the little red theature comique.'—Washington Herald.

WAX RENDERING

By O. L. HERSHISER, Buffalo, N.Y.

We are greatly indebted to Mr. Hershiser, of Buffalo, for the following paper on wax rendering. Last month we asked for aid to our reader in Montcalm County, Quebec, upon this subject, and Mr. Hershiser has very promptly and ably responded. He is a well-known authority on the subject of rendering wax, having invented a wax-press that is said by some to be one of the best of its kind yet produced. Of this he says nothing, however, in his paper which follows, but points to simple methods that anyone may adopt in the rendering of their wax, may the quantity be large or small:—

Wax rendering is an apicultural subject that has been sadly neglected by far too many apiarists, and the information in reference to some points that have bothered the gentleman from Montcalm County, Quebec, will probably be useful to many others.

Your correspondent states that he has a wax-press and a wax-extractor, which I should suppose would be a combination of the press and extractor in one machine. At any rate the machine or machines he has ought to at least be sufficient to extract the wax with a comparatively small amount of foreign material intermixed therewith.

Most wax extractors deliver the wax in this unfinished state, and how to finally get it in clean and marketable shape seems to be what puzzles our Montcalm County friend, and doubtless many other bee-keepers as well.

Cleansing wax is really a very simple operation, and while specially constructed utensils for the purpose are desirable they are not absolutely necessary. A five-gallon honey can with the top cut out will answer the purpose of remelting very well, or any other metal kettle or tank. Preferably the melting tank should be quite deep vertically as compared with the longitudinal dimension. Two or three inches in depth of water should be placed in the melting tank and the wax cakes placed therein until the tank is nearly full. Melting will be facilitated if the cakes are broken into pieces, so a greater surface of wax is exposed to the heat. Melt over a moderate fire, being careful not to bring the wax to a violent boil. The less the wax is boiled the better will be the quality. As the wax approaches the boiling point, certain of the lighter impurities will float on the surface in the form of skum, which may be taken off with a large spoon. If the wax is kept just at the boiling point for a few minutes all the lighter impurities will come to the surface and may be removed by skimming, after which the batch of wax should be allowed to cool slowly until nearly to the solidifying point. Slow cooling is the means of getting such impurities as are slightly heavier than wax to settle to the bottom. It would be well if the cooling process occupied two or three hours. When nearing the congealing point the wax may be dipped out of the tank into moulds of the required size and pattern. For ordinary commercial purposes new or bright tin pans or pails are as good as anything. Wax moulded when as cool as above indicated, and in small cakes of up to fifteen pounds weight will not crack. If the cakes weigh from 20 to 40 lbs. they are likely to crack unless the cooling is retarded by wrapping old carpet or other material about the mould or by setting the same into another vessel slightly larger, such as a butter tub. Such large moulds of wax should be covered with boards, by laying two parallel on top in such a manner as to leave an opening about three inches wide, and then two at right angles to the first two and in the same manner. This will leave a square hole about 3" x 3" through into the centre of the mould, causing the wax to commence congealing at this point which will result in a solid cake. The writer has moulded cakes of solid wax weighing as high as 47 lbs., and believes he could succeed in making solid cakes several times that weight.

After carefully dipping off all the clean wax, the residue may be poured into a pail and when cool the cake may be removed and the impurities removed from the bottom by scraping. If the impurities are intermixed with the wax at the bottom as sometimes happens, the bottom of the cake should be cut away with an ax or hatchet until clean, pure wax is reached. The chips, skimmings and other scraps of wax should be saved to go into the next batch to be cleansed and thus nothing is wasted.

Thus we obtain the wax as clean and cleaner than if we depended upon a strainer. We have

simply taken advantage of the difference in specific gravity of the wax and the foreign substances that we wish to eliminate. It may be observed that propolis is heavier than wax and does not mingle with it; polin is also heavier than wax. These and other heavy substances if present therefore readily separate themselves from the wax and settle to the bottom.

It is still the belief of many bee-keepers that very old black comb is almost barren of wax. This is indeed a great and costly error to such apiarists as believe it.

A good special utensil for cleansing wax may be constructed as follows: Obtain a tin can preferably of about five to eight gallons capacity, depending upon the amount of wax to be handled, the height of which should be about twice its diameter. Have a tinsmith construct a funnel on the outside of the can and attached to it, reaching from the top to the bottom of the same with an opening from the funnel into the can at the bottom. A delivery spout for the wax is constructed on the opposite side from the funnel and near the top of the can. Now, after the wax has been melted and skimmed, as above described, and has cooled to the proper point for moulding into cakes, place the mould under the delivery spout and introduce hot water into the melting tank through the funnel. As the hot water enters the tank through the opening at the bottom of the funnel, the level of the wax will be raised and will overflow through the spout into the mould. Hot water may be introduced until finally it will displace all the wax, the latter having passed out through the delivery spout, except a thin film which is intermingled with the impurities, which are heavier than wax but lighter than water. Thus there is no mixing of dirt and wax as is likely to be the case when dipping from the open tank after it has been partly emptied.

The writer has known of more than one bee-keeper—good, intellectual men in other respects—to throw old bee comb onto the compost heap or bury the same in the ground. Almost like the servant who had but one talent, in Holy Writ. As a matter of fact all bee comb is rich in wax, varying from 30% upwards according to the quantity of foreign materials contained therein, such as pollin, profolis, cocoons from which bees have emerged, etc. These impurities act as a sponge in such old combs, but by proper treatment, practically all the wax may be obtained from them, and those who have been and are still throwing them away may be reminded that in so doing they are throwing away gold dollars to the tune of at least one dollar's worth of wax for every two sets of combs from the 8 frame dovetail hive. This is a low estimate and the quantity of wax thus wasted is much more rather than less than above indicated. It may be observed that there is no diminution of the amount of wax in a comb by reason of its becoming old. The percentage of wax therein is only lessened by age by reason of the accumulation of foreign material, but the net amount of wax in old comb is greater for a given surface area, rather than less, than is contained in new comb.

MORE GOVERNMENT AID FOR BEE INDUSTRY

(THE FARMER'S ADVOCATE)

Much as the busy bee has been extolled in poetry, prose and proverbial lore, it is a remarkable fact that the bee-keeping industry has seldom received from Governmental offices the encouragement and support which its own importance and its immense incidental benefits to other phases of agriculture unquestionably warrant. Perhaps this is partly attributable to the limited numbers and unaggressive attitude of bee-keepers, but more particularly, we surmise, to the woeful lack of general knowledge concerning the great value of bees in pollenizing fruit, clover and buckwheat blossoms. Indeed, bee-keepers are frequently anathematized by neighbors who really owe them a deep debt of gratitude for many an extra barrel of fruit or bushel of alsike seed. That orchards yield best, other conditions being equal, in the neighborhood of apiaries, is a matter of repeated comment among observant horticulturists. And yet, scores and hundreds of orchardists and farmers deny this, and berate the innocent apiarist, simply because they are uninformed regarding natural history, and too narrow and prejudiced to believe the statements of experts who have investigated the subject. There is great need for educational work in spreading knowledge of the value of bees to agriculture, as well as assisting bee-keepers by freely-endowed investigation and experiment in the various phases and difficulties of modern apiary practise.

The value of the bees as an object-lesson for nature study, and of honey as a food, commends it. It displaces no other stock, witholds not a foot of ground from cultivation, outside the limited quarters of the apiary, and abstracts nothing from the fertility of the soil. France, which utilizes every resource encourages bee-keeping liberally. In Northern Ontario, honey is one of the first crops a farmer can take. Canadian honey has won high laurels wherever exhibited. At the Centennial Exhibition, in 1876, Ontario honey took first prize. At the World's Columbian Exhibition, in 1893, Ontario Province received 17 awards, and the whole United States 28. At the Pan-American Exhibition in 1901, Ontario, with 21 exhibitors secured the only gold medal, and 33 diplomas of honorable mention. Medals of distinction have also been won at St. Louis, Mo. and Paris, France.

These considerations emphasize the propriety of a couple of recent resolutions passed by organizations of apiarists. The National Bee-keepers' Association of the United States, at their last annual meeting at Harrisburgh, Pa., recorded a strong expression of opinion that all Federal, State and Provincial Departments of Agriculture give bee-keeping encouragement and the same help that other branches of agriculture receive; that complaint had been made that incompetent men had frequently been appointed in the position of lecturers in this subject.

At a recent convention of the Bee-keepers' Association of Ontario, a resolution was passed unanimously asking that exhibits be made at Toronto, London, Ottawa and other exhibitions, giving demonstrations in methods of producing honey, the

management of bees, showing forth their natural history, and instructing the public in judging and caring for honey; also that the Dominion and Provincial Department of Agriculture be asked to give bee-keeping the same help and encouragement that other lines of agriculture are receiving.

We take it that the spirit of these resolutions does not call for monetary appropriation to the same extent as accorded, say, the dairying industry, for instance, but there certainly is ground for expecting greatly-increased Departmental attention and aid to bee-keeping, and there is reason to believe that, so far as Hon. Nelson Monteith, Ontario's Minister of Agriculture, is concerned this will be forthcoming. In this connection, it may not be amiss to note that Dr. Robertson has intimated his intention of instituting a strong apiary department in the Macdonald College at Ste. Anne de Bellevue, Que., and the O. A. C. must not lag behind. It is now a moot question, whether it would not be advisable to establish, either at Jordan Harbor or Guelph (probably at both, with provision for interchange of colonies and denonstration facilities), a strong well-equipped experimental and demonstration apiary department, in charge of an expert apiarist employed the year round. At present, there is but a fall-term course at the O. A. C. by a non-resident lecturer, and it is not conducted in a way to exalt the bee-keepers art or occupation in the mind of the average student. Development of this department is clearly required, and any reasonable expenditure will be well repaid. Manitoba and Nova Scotia Agricultural Colleges might also consider the claims of the bee industry in their institutions. Once such apiary departments are established in competent hands, other means of promoting the industry will suggest themselves in sequence. Professors in any line are prolific in devising plans for further aid to the industries they represent.

We are endeavoring to issue the C.B.J. by the 15th of each month. The past two months it has been very late. In October it was delayed by the transfer to us, and the November issue by the Convention, which closed on the 15th. In consequence of our early publication this month, a number of contributions are held over till January. We have been pleased with the interest taken in the Journal. Our friends are writing us more freely.

Letters to the Editor

MR. HOLTERMANN EXPLAINS

DEAR SIR:

On page 334 of the last CANADIAN BEE JOURNAL there are extracts from a letter which has reached you. You do not deem it wise to publish all of this, but you raise the cover and give us a sniff of the savory contents and you add your editorial comments. Let me say the article from which you extract was written some time in August. "Gleanings," with a circulation of 34,000, to print the copy and mail the journals in time to its subscribers, requires that "copy" shall be in their hands a month to six weeks before the time of publication. My ESTIMATE, carefully qualified, was based upon my latest information at the time from several districts. That the total reports and the inspection towards the close of the season has reduced the diseased apiaries to 42 per cent, pleases no one better than myself, but offers, I am sure, to the reasoning and interested mind and to the province no cause for self-congratulation.

The result of the season's work is so alarming, that a matter of it being 40 per cent. or 60 per cent. is not worth considering. There must be no slacking in the vigilence of every bee-keeper, and for this purpose you will find ample motive for my action.

Fortunately, on page 360 of the same issue, there is a letter from the Secretary of the Norfolk Bee-Keepers' Association, which states: "We were literally rotten with it" (foul brood.) I would further refer you to Messrs. E. Trinder, John Murphy, Dr. Wm. Burt, James Armstrong, most of whom have used the very words with which fault is found.

This and other information amply justifies the statement: "It is well that the change came no later than it did, or some sections would not have had bees to inspect." This statement I re-affirm.

I attribute the spread of the disease to the FALSE SECURITY into which bee-keepers were resting, as the result of these reports, which this year's inspection amply proves was far from the truth.

The cheapest, best, and only way to stamp out the disease is to have the bee-keepers come to a true realization of the danger of the disease, and in this way seek inspection, feeling that it is in their own best interests—which it assuredly is.

Yours in the interest of the bee-keeping industry of this province

R. F. HOLTERMANN.

Bees pay in the fertilization of flowers, insuring the setting of fruit and the production of seeds.

NEW BOOKS

We beg to announce the publication of a new and valuable work by M. J. Keane, M. D., M. B., (Tor.) C. M. (Trin)., entitled "A STUDY IN HEALTH SCIENCE." This will be found a very valuable contribution to the great subject of science of health. Much has been written on this subject by Mr. A. I. Root, of Medina, Ohio, and we are pleased to say that it is in very close accord with much written by Mr. Root. Price $1.25. Copies may be had from The Telephone Publishing Co., Brantford, Ont., or by addressing the office of the CANADIAN BEE JOURNAL.

Old Inhabitant—Why, la bless 'ee, miss, I can remember the place when me an' a seagul was the only people here.' —'Punch.'

Want and Exchange Column

Advertisements for this colum will be received at the rate of 35 cents for 25 words, each additional word one cent. Payments strictly in advance, as the amounts are too small to permit of book-keeping. Write copy of add on a separate sheet from any other matter and on one side of the paper only. Say plainly how many times ad. is to be inserted. M tter must reach us not later than the 23rd of each month

WANTED

WILL EXCHANGE 30 eight-frame Langstroth hives (painted) for 120 lbs. next season's clover honey; or an Edison's Concert Phonograph for honey or beeswax; or I will buy your honey.—G. A. DRADMAN, Brussels, Ont.

FOR SALE

FOR SALE—Fifty hives of Bees in light frame hives, in first class shape, new hives. Will sell the lot at $3.00 per hive. This ad will not be repeated. Address at once, David Logan, Wilsonville, Ont.

FOR SALE—Three acres of Fruit and Garden land; also 60 colonies of Carnio-Italian Bees and all appliances. Good locality.
60 lbs of clover honey per colony taken off last season. Oxford County. Address "Bees" care of Canadian Bee Journal, Brantford. Canada.

PRESERVING HONEY IN BUTTER

When the butter arrives it is at once washed in several changes of water (which latter has been slightly salted and boiled for five minutes.) The hands of the operator should have been thoroughly washed in ordinary water and soap; then well rinsed in water previously boiled. The butter is then well worked up with the hands, and, after being well kneaded, there is no longer any buttermilk left to cloud the water, and the butter is ready to put into jars. The best for the purpose are those of glass holding about 2 lb. The jars must be well washed in boiling water and made very clean, then thoroughly dried. When ready for the butter, turn over the jar and burn in it a piece of sulphur-match, then put in the butter and press it well down. This done, pour on the top, to a depth of about one-third of an inch, thoroughly ripened honey just about to granulate and screw on the lid. If the operation is performed exactly as directed above, the butter will keep easily right through winter.

HONEY GEMS—2 quarts flour, 3 tablespoons melted lard, ¾ pint honey, ½ pint of molasses, 4 heaping tablespoonsful brown sugar, 1½ level tablespoonsful soda, 1 level teaspoonful salt, ⅓ pint water, ½ teaspoonful extract vanilla.

A SUMPTUOUS MAGAZIME

Though it makes no boast of being a Christmas number, being modestly dated December, there is no question that the greatest ten cents worth on the newsstands this season is 'The Canadian Pictorial, which enters on its third volume with this issue. It contains forty-eight pages, illustrated more superbly and more lavishly than any previous issue of a publication that has rapidly made for itself a unique position in the life of Canada. The cover, which is exceedingly attractive, shows a girl whose beauty has been the talk of a continent. Between the covers are pictures in three colors of a nature varied enough to suit the most exacting. Christmas cheer and Christmas frolics are portrayed in abundance and valuable hints to these looking to the festive season are given. The first of December is the Queen's Birthday, and a page about Her Majesty's home life is illustrated with an exquisite picture. News pictures are not lacking and current events of interest to Canadians are portrayed on a scale never before attempted in Canadian journalism. The publishers announce that, while the edition is limited only by the capacity of their presses, there is every indication that the supply will be exhausted early in the month. Ten cents a copy. One dollar a year. The 'Pictoral' Publishing Company, 142 St. Peter street, Montreal.

The Canadian Bee Journal

1907

INDEX TO VOLUME FIFTEEN