

The Canadian Bee Journal

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NOTES AND COMMENTS

By J. L. Byer.

Bees Irritated by Black Clothing.

Only a short time ago it was my privilege to spend part of the day in an out-apiary belonging to one of Ontario's well-known bee-keepers. During the time I was there, although I walked all through the yard quite a number of times, hardly a bee offered to sting, and I concluded they were a pretty quiet lot of bees. During the day the owner came to the apiary, and together we started to go among the bees, when, presto! what a change. In an instant the bees were fairly swarming about the head of our bee-keeper friend, and it was more than funny (to the writer) to see the way he sprinted for cover to the honey-house. As I had been wearing a straw hat and the bee-keeper was dressed in dark clothing and a black felt hat, it struck me as a clear case of the bees being aggravated by the dark garb, especially the black hat. At least, that was the only construction I could place on the matter unless we accept the idea advanced by the victim; he "guessed they knew him, and were trying to even up some old score."

Effect of Winds Upon Nectar Secretion

Speaking of the poor season, Doo-

ittle, in August 15th "Gleanings," says easterly winds are against the secretion of nectar. Wonder if this is a matter of "locality," as such claims do not hold good in this part of Ontario. With us northerly winds are the most unfavorable, while a southeasterly wind quite often accompanies our heaviest honey-flows. This year it made no difference how the wind blew, there was very little nectar secreted, except from buckwheat, of which more anon.

Bees Dying in the Yard.

Was quite interested in friend Taylor's enquiry in August "Canadian Bee Journal," as our bees, especially at the home-yard, have been heavy sufferers the past two seasons from the same complaint. Every morning during the clover flow thousands of bees were crawling over the grass; after a time they formed in bunches nearly the size of a walnut, and by noon all would be dead. Mr. Smith's theory that poison is the cause seems plausible from the fact that the greatest number of bees were always noticeable in front of the most populous colonies. On the other hand, I can hardly think the theory correct, from the fact that the same state of affairs continued after time for spraying potatoes was past. Whatever the cause, no question, but that it cost me a good many pounds of honey last season, as many of my best colonies were nearly depopulated. I looked into the hives a number of times

where the sick bees were the most numerous, but all the brood was perfectly healthy. As I have had no experience with poison from spraying, do not know whether brood in the larval state is injured or not. Would think, however, that such would be the case; if wrong in my views, will some one please correct, and at the same time throw some light on the probable cause of our bees dying, as has been stated.

Alfalfa as a Honey Plant.

Another interesting item in August "Canadian Bee Journal" is the statement of Mr. Adams that alfalfa yields nectar in the vicinity of Brantford. No matter what the weather conditions are here, don't think I have ever noticed a bee on alfalfa, although I have looked many a time. Possibly the soil of "Bow Park" has been inoculated with the bacteria which scientists tell us are necessary to insure best results with alfalfa. Guess we will have to call on friend Adams for some inoculated soil to "fix up" our localities that are not so fortunate. After second thought, Mr. Editor, perhaps we had better call off the deal, as Mr. Adams is, I surmise, a pretty busy man, and might feel inclined to "inoculate" our heads with something more substantial than "bacteria" for venturing to propose such a plan.

Buckwheat in York County.

At last we here in York county know what buckwheat honey looks and "smells" like. At the Cashel apiary, where it has been, the joke to assume that the bees would not know a field of buckwheat if they saw one, the clover honey was taken off about two weeks ago. As in other years, the combs were nearly all stored away in the large moth-proof box I have spoken of before. While I knew there was a small acreage of buckwheat near the yard this year for the first time, I thought if the bees secure enough for

fall use that would be all, particularly as my large hives had very little in the brood nests. On Monday, August 20th, we went to the yard, and what a sight! Every hive was simply jammed with honey in the brood-nest. A number of the strong colonies had one or two combs in the supers. These were filled with honey, and in many cases combs were being started from the quilts. There was nothing to do but to open that big box and hustle about 400 combs back into the supers. With the thermometer 90 in the shade, can say you we got a bleaching; nevertheless it was work enjoyed as much as anything I ever did. The same conditions prevail at the other yards, and to say I feel pleased is putting it mildly. Let some of you "100-lbs.-to-the-colony-from-buckwheat" fellows should smile at my enthusiasm, let me say that other years we get no buckwheat honey and generally have to feed a lot for winter stores. This year, with practically no clover honey and a possible \$200.00 sugar bill to face, things looked not too assuring. Now no "feeding" is an assured fact, to say nothing of a neat little surplus of "molasses." and—well, we feel thankful for small mercies.

Markham, Ont.

AUSTRALIAN HONEY.

An English correspondent writes that Australian honey is being sold in one of the monster London stores at 9d. and 1s. 3d. per pound bottle, and 10d. and 1s. 4d. per pound section, while in Australia the bee-keepers get only 2½d. per pound. Our friends who sell at 2½d. should look up affairs in London.—Irish Bee Journal.

The man who is never quite sure "thinks, perhaps," "imagines," "guesses," or "presumes," is no man to trust. His foundations are built on sand,

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By Dr. E. E. Phil

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EXPERIMENTAL APICULTURE

By Dr. E. E. Phillips, U.S. Dept. of Agriculture

Extracts from address before the National Beekeepers' Convention Chicago.

There is room for improvement in hive appliances, extractors, forage, and other things, but the one place where there is the greatest need for improvement has been generally neglected by bee-keepers; I refer to the improvement of the bees themselves. All bee-keeping is pre-eminently breeding work. The honey is the product and the ultimate object of the industry, but the working problem is strictly one of breeding. The bee-keeper can increase his output by improvement in two places: first, in the manipulation and food supply; and second, in the bees themselves. Manipulation and food supply are being discussed continually but we get very little real information on the improvement of bees. I do not refer now so much to the introduction of new races, but, particularly, to selection of breeding stock.

The Italian race of bees was introduced into this country about 1860, and the credit for this important introduction need not concern us at this time. The important thing now is to examine the situation to see how much this race has been affected by breeding in the hands of the bee-keepers of this country since its introduction. From about 1860 on, there has been, in some quarters, an interest in breeding this race for color, and this has been done very successfully, several different breeders having taken up this line of work and succeeding, by selection, in producing five-banded Italians. As an example of what can be done by careful selection among bees this work is of

value to us. Other breeders have selected for gentleness and, since this character is not as measurable as color, it is harder to make definite statements concerning the results obtained, but it is evident that, either intentionally or accidentally, some good has been done along this line.

But the main object in the keeping of bees is honey production; how much has the average output per colony been increased in the past forty-five years? Every bee-keeper knows that the more populous the colony during the honey flow the more surplus honey stored, other things, such as honey flow and weather, being equal. The problem then, reduces itself very largely to the fecundity of the queens and the question may be changed so as to ask how much the prolificness of Italian queens has been increased in the past 45 years. Another very important factor in honey production is the eagerness with which bees go after nectar, and a third is the tongue-length, enabling them to reach the nectar in long corolla tubes. Italians lack the eagerness which is possessed by Cyprians, but there are Italian colonies which have it to a marked degree. Several strains of long-tongued or "Red Clover" Italian bees have arisen in the past few years, but what is the history of the strains? When a queen is sold and introduced into a honey-producer's apiary, before many generations, the progeny cease to work on red clover, if they ever did; for the reason that proper selection is scarcely ever practiced and there is not close enough inbreeding. This is certainly due to lack of proper methods in following up the breeding:

We may conclude, then, that prolificness, vigor and tongue length, which frequently appear in Italian bees are not ordinarily used to proper advantage by the majority of bee-keepers. Anyone reading the reports of the early Italian importations will see that the

average per colony, throughout the country is not much better than it was 45 years ago, and in some strains there is reason to believe that it is less. Of course this not true in certain aparies, but I feel sure this holds for the country in general, and I am inclined to think that prolificness in some strains of this race is actually decreasing.

It is natural that we should want to know why this is. There is but one answer, it seems to me, and that is that queen-breeding in honey producing aparies, is usually not done with a knowledge of the common principles of breeding as practiced on other animals and on plants. Careful breeders of almost every other form of domestic animals know to an ounce what their stock produces, but how many bee-keepers can give this sort of a record, and it is commonly recognized by breeders that without records they work in the dark.

Breeding of both plants and animals with a view to the betterment of stock is now attracting wide attention; this work is not confined to experimental stations and wealthy individuals but the farmers of the country are recognizing the fact that there is more money in choice stock than in scrub animals. Let me quote General Burchard, associate editor of Hoard's Dairyman, a short extract of an address to dairymen of Wisconsin, what he called "The Cow Breeder's Shorter Catechism."

"Q. How many kinds of cows are there?

A. Three.

Q. What are they?

A. Dairy cows, beef cows, and combination cows.

Q. What is a dairy cow?

A. One that has the ability to turn all the food she may eat and digest, over and above that required for maintenance, toward the udder, there to be transformed into milk.

Q. What is a beef cow?

A. One that turns her surplus food into flesh and fat.

Q. What is a combination cow?

A. One that tries to take both forks of the road and never gets anywhere.

Q. What causes the difference in cows?

A. Heredity.

Q. What is heredity?

A. "The biological law by which living beings tend to repeat themselves in their descendants."

Cattlemen realize that they must breed for one thing in cows, and I believe that bee-keepers should settle down to one line of selection. Honey-production, gentleness and color, do not necessarily go together, and the chances of finding all these combined in one colony are small. Which should be chosen Honey is the object of most bee-keeping and that then should be the one and the colony line of selection for the honey-producer. You may arrive at this by selecting prolificness, or tongue-length, but not both without great difficulty, and therefore, prolificness, which is vitally necessary, should be the first consideration.

In the extensive work of the Maine Experiment Station on egg laying, it has been found that some of the best formed hens were poorest in laying ability and vice versa. They therefore, select for number of eggs and let everything else go. In this series of experiments they begin with a flock with an average of 120 eggs per year and now have many individual hens which produce from 200 to 250. This, too, has been done in a very few years.

The application of statements concerning stock may be transferred to bees and, therefore, does it not seem that for the bee-keepers to arise and for the procession? Let the honey-producer drop all fads of color, gentleness and similar things and breed pure stock

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Allow me to mention here an institution worthy of notice; there was started, about two years ago, an organization known as the American Breeders' Association, and breeders of both plants and animals are uniting in the study of the principles of breeding with a view to improvement of their stock. Breeders of all kinds of plants and animals have seen that they have interests in common and there is absolutely no ground for a belief that the same principles of breeding do not apply to bees, and I believe no one claims it, yet none of our queen-rearers have seemingly cared enough about the information to be derived, to pay the one dollar membership fee which entitles the member to a volume of proceedings worth five dollars to any breeder. According to the directory in the first volume the total number of members interested in bee-breeding is one, and that one is not included in the last published list of members of the National Bee-Keepers' Association. I am happy to say that since then one other person interested to some extent in bees has joined, and he is also a member of the National. I would urge that the National Bee-Keepers' Association join the Association and then let every member who cares anything at all about the improvement of his bees do likewise. The fee is small and the benefits large. This scarcity of bee-keepers may be due to the fact that the organization has not been properly mentioned in bee journals. I trust that the editors of the journals will look into this association and then give it a little free advertising for it is a worthy object, and is in no sense a commercial enterprise. The editors can do great good in a matter of this sort because they have an easy means of access to the men who should be interested.

Since much scientific work has yet to be started in queen-breeding it may not be amiss to enumerate some of the approved principles of breeding and apply them to bees. You will notice that I say queen-breeding not queen-rearing, for there is a vast difference.

The two great factors of all life, both plant and animal, which make improvement possible are Variation and Heredity.

It is proverbial that no two individuals of any one species of race of animal or plant are exactly alike, and this of course applies to bees. During the past winter I examined five hundred workers and one thousand drones, making in all between five and six thousand measurements, and the results showed remarkable variability in this species. Drones vary considerably more than workers in color, and size, and although I did not have large numbers of queens to measure, it is well known how variable they are. These measurements were of structures, but equal variability is present in the ability to do work, either of egg laying or honey producing, as witnessed by the inequality in stores and population of different colonies. There is, then, enough variation.

The other great fact in nature which makes it possible for man or nature to improve a species or race is at first thought directly opposed to the foregoing; "Like begets like," is also true. A prolific female produces daughters that are also prolific, though not all to the same degree; but it is an established principle of breeding that excessive prolificness in a female tends to produce in her offspring prolificness at least above the average for the race. If variability existed without this hereditary tendency, no improvement could be made, for at every generation the individuals would again vary in all directions. On the other hand,

heredity could do nothing for us in our work of selection, were it not for the fact that variations occur, but around a new centre, as it were, in each generation during selection.

The weeding out of undesirable stock is the greatest task of the queen-breeder. He must pursue his work by (1), inducing variation; (2), producing large numbers of individuals; (3), weeding out all undesirable blood by breeding from but one, or very few select animals, and (4), fixing the type. In queen breeding this means that hundreds of queens must be bred and tested every year and a very few chosen to continue the work during the following season; it does not seem best to use as small numbers as do most queen breeders. The Funks in their work on corn breeding tested five thousand ears which bore no relation to each other, and chose two as breeding stock. Luther Burbank, the wizard of horticulture, advocates even larger numbers, having chosen one in ten thousand from among some of his plants. In queen breeding we are more restricted by the limitations of any locality but I think I am right when I say that a breeding queen should be the best in at least five hundred tested queens, and the test is to be made by the actual amount of honey produced in a year as compared with the other four hundred and ninety-nine, always assuming, of course, purity of stock. Cattlemen use scales, and the Babcock test as the only safe method of choosing the dairy cow; let us use scales in our judgment and disregard color and other fads when rearing honey producers.

For "fancy" bee-keeping, as practiced by many amateurs, color or anything else that attracts may be used.

Since mating cannot be controlled in bees as in mammals, it will be necessary to have several colonies producing drones, but every colony chosen for this

purpose should have a high honey record of at least one year's standing, and the queen should be quite as good as the breeding queen. The majority of bee-keepers are notoriously lax in this regard. In many cases the drones of every colony in the yard are allowed to fly and just so long as this is done we will have no advancement, for this one-sided selection is working against odds that the bee-keeper cannot overcome. In defense of such loose methods some queen breeders argue that a very large number of drones are necessary and that they can be procured in no other way. During the past summer in sixteen colonies in the Arlington yard of the Bureau of Entomology I produced enough Caucasian drones to stock a queen breeding yard with an output of two thousand queens a year and this could have been done with half that number to advantage. I may add also that pure matings were secured in the very large majority of cases although that apiary is far from being isolated; I mention this to show that more drones are unnecessary.

We have pedigreed horses and cows and even pedigreed corn and wheat, why not pedigreed bees? I think I am not asking too much. I hope the day will come when the breeders will advertise as follows: "I am this year using my celebrated breeding queen Smith 168, which is the mother of a colony which last year produced 50 per cent. more honey than my average colony. This queen is the descendant of six purely mated queens all of which were mothers of colonies producing over three hundred pounds of honey a year. For drones I am using five colonies which last year produced over three hundred pounds each." This is not visionary by any means, for it is exactly what breeders of other stocks are doing, and it is pleasant to think that some wide-awake queen breeders

are doing almost

There is the only producing of honey in one year in a good season manipulation, but a queen was not made the of breeders to be the United Statesducers are so situated can produce any but it is necessary.

There are two additional considerations of the desirability of pure. Crosses or matings are possible that they should be accepted when necessary from Dr. W. E. Carnahan, on this point.

"Since cross breeding modifies characters to conform to the law of inheritance, and is necessary when they are pure, it should be done with extreme caution, and by one who has a definite and fairly clear idea of what he wants to obtain it.

"The purity of a stock should be carefully guarded. Attention should be given when individuals are apparent, it may be a mistake or else in a suitable matings and selection, provided the superior animals.

"At the same time on the lookout for qualities of merit. It is discouraged if it is attributed to the immediate character of the children from the grandchild made a racial character.

are doing almost that now.

There is the recorded case of a colony producing one thousand pounds of honey in one year; of course this was in a good season, and under careful manipulation, but think what a valuable queen was lost when that queen was not made the mother of a long line of breeders to be distributed all over the United States. Few honey producers are so situated that each colony can produce any such amount of honey but it is necessary to aim high.

There are two points which require additional consideration. The first is the desirability of breeding the race pure. Crosses or hybrids are so variable that they should be avoided except when necessary. Let me quote from Dr. W. E. Castle, of Harvard University, on this point:

"Since cross breeding is likely to modify characters even when these conform to the laws of alternative inheritance, and is certain to modify them when they give blended inheritance, it should be practised with extreme caution, and only by the breeder who has a definite end in view and a fairly clear idea of how he is going to attain it.

"The purity of standard breeds should be carefully guarded, and much attention should be given pedigrees, for even when individual excellence is not apparent, it may be present in recessive or else in a latent state, which suitable matings will bring into full realization, provided the ancestors were superior animals.

"At the same time the breeder should on the lookout for individual peculiarities of merit. And he should not be discouraged if these are not transmitted to the immediate offspring. A simple character which disappears in the children, but re-appears among the grandchildren, can at once be made a racial character, for it is

recessive in heredity."

The breeder who uses a mixture of races for breeding is doing something which is very likely to cause him trouble. There is very little necessity under present conditions for this, since a good race may be chosen as a foundation stock which can be surpassed by crossing only with difficulty, and careful and systematic selection within the race will bring almost as good results with the great advantage of more stability, a point of vital consideration. Let me make this point a little clearer. There is reason to believe that where some queen-breeder takes up the improvement of bees by crossing he will outstrip all the rest. He will induce greater variability, and will, consequently, have a greater range of material for selection; he will be enabled to combine the desirable traits of two or more races, and, at the same time, if proper care is used, eliminate the undesirable traits. This can be done purposely only by a person who has a most thorough understanding of heredity and variation, and no one else should undertake it, for there is otherwise too great a danger of bringing out all the undesirable traits and losing the good ones. This, then, is why pure races are generally so essential; when the proper men take hold of crosses they will get great results, but the majority of breeders should not risk the handling of fire in that way, and as for the rank and file of bee-keepers, it is, I think, absolutely folly. A bee-keeper may say that he cares nothing for races; that all he wants is honey. All this is very true, but he cannot afford to overlook the fact that nature has laws which he, with all his independence, dares not disregard. I consider the bee-keeper who fills his apiary with what we may call scrub hybrid stock is a poor bee-keeper.

The second point is the common pre-

justice against inbreeding. I can do no better on this point than to quote from Mr. N. W. Gentry, who is well known as an extensive breeder of Berkshire hogs. Mr. Gentry has for years practised inbreeding, and before the Champaign meeting of the American Breeders' Association, in February, 1905, he said:

"From father to son for generations has been handed down the common belief that inbreeding of animals produces offspring of less vigor, less vitality, less constitution in proportion to the extent to which it is carried on continuously, and this belief seems to have been accepted as true without any proving by the very great majority. My experience has led me to believe otherwise, or rather that such results need not necessarily be true.

"Neither inbreeding nor the reverse will be a success unless matings are made with animals suited to each other; that is, having no weakness in common, if possible, and as much good in common as possible. This, in my opinion, is the key to success in all breeding operations and success will come in no other way. In my opinion inbreeding as a rule is very good or very bad.

"I have watched results of inbreeding in my herd for years, and until I can discover some evil effects from it—and I have not yet—I shall continue to practice it."

In breeding it is generally believed that inbreeding is detrimental or fatal, but, fortunately, breeders are now seeing that the idea is usually without foundation. Of course, inbreeding accentuates common weaknesses, but we should use it in accentuating strength, as it will when properly directed. Think what it would have meant to bee-keeping if the blood of the Cyprian queen whose bees produced one thousand pounds of honey had been preserved by inbreeding, and what it will

mean if some of the present good queens are kept by this method. I do not advocate universal inbreeding, for it is well known that inbreeding is, generally speaking, not natural, but, even in nature, it is frequent, and it is by no means universally true that it is detrimental. Therefore, if there is reason to think that it is best, it should be fearlessly practised. How this prejudice against inbreeding arose I do not know, but we all know how general it is. Nevertheless, it is true that the breeders of stock who now practice it are the ones who are getting results of lasting value. On one or two points I do not wish to be misunderstood. I do not wish to condemn the breeding for color or for long tongues. I really consider color selection a fad, but there are those who prefer the lighter colored bees, and as long as there is a market it will pay to select them. Long tongues would be an advantage doubtless, but in whatever way we are breeding, let us not forget that increased honey production is the essential. If these bees have longer tongues all right and well, but the selection should be made by the scales.

I notice that in Belgium, Switzerland, France and Germany bee-papers are now lauding their old love. What change is desiderated it is more in the form of improving the blacks than in the introduction of new races that perfection is now being generally sought. And that is well.—D. M. M., in "Beekeepers' Record" (British).

HIVES—Do not be led into buying secondhand hives, however cheap. They may contain the germs of disease. Get them from some reliable firm. Endeavor to get the advice of an experienced bee-keeper before setting up the business.—Irish Bee Journal.

There is certainly something wrong

in our social system, compelled to give the "bread-and-

TWO KINDS

The Rucher Bees or rather an excellent foul brood by D. land. The bacillus foul brood was first botanists of Breslau thoroughly studied by in 1884. Later, in taken up again by verified the result and Cheshire. B. botte, of Leige, discovered that he discovered bacillus alvei was bacillus mesentericus very common and putrefying substance bread, potatoes, etc. like substance very foul-broody, color. A first study shows stages of the malade bee larva is not a bacilli, but gradually the larva and stage, die and the like and of a substance is elastic into threads. Numerous. Eventually they out and nothing scale adhering to the cell and full of contents of them. An attempt at culture failure such as all processes known alike. The bacillus occasionally found are gotten in accident any other putrefying odor was observed of cultivation the accidental presence mesentericus show

in our social system when a man is compelled to give all of his energies to the "bread-and-butter" question.

TWO KINDS OF FOUL BROOD.

The Rucher Belge gives a translation, or rather an extract on the study of foul brood by Dr. Burri, of Switzerland. The bacillus alvei, producing foul brood was first discovered by two botanists of Breslau in 1874, then thoroughly studied by Cheyne and Cheshire in 1884. Later, in 1890, the matter was taken up again by Prof. Harrison, who verified the results obtained by Cheyne and Cheshire. But in 1902 Dr. Lambotte, of Leige, discovered or thought that he discovered that the supposed bacillus alvei was nothing but the bacillus mesentericus vulgatus, which is very common and develops on certain putrefying substances, cream, cheese, bread, potatoes, etc., producing a glue-like substance very much like that met in foul-broody colonies.

A first study showed Dr. Burri, three stages of the malady. In the first the bee larva is not changed and is full of bacilli, but no spores are present. Gradually the larvae pass into the second stage, die and become soft and glue-like and of a brown color. This substance is elastic and can be pulled into threads. Numerous spores are then found. Eventually the rotten larvae dry out and nothing is left but a dry scale adhering to the bottom side of the cell and full of spores, in fact, millions of them.

An attempt at cultivation was a complete failure such as Dr. Lambotte met, all processes known were tried, but all failed alike. The bacillus mesentericus was occasionally found, but seemed to have gotten in accidentally as it does in any other putrefying substance. But the odor was observed. The impossibility of cultivating the said bacilli and the accidental presence bacillus of mesentericus show how Dr. Lambotte

made the mistake of taking the last for the cause of the malady.

But samples from another apiary gave quite another result. In same cells bacilli and spores were found together; the spores were larger than those of the preceding set, the rotten glue-like odor very pronounced, the cultures very easily made. In a word, the true bacillus alvei was fully recognized.

In the foul, broody combs Prof. Burri often found "cocid brood." This last is caused by non-motile bacteria which do not form spores. In the acid brood, the larvae do not turn into a soft, gluey substance, but while very soft, retain their form. Even when the disease is far advanced, they can be pulled out of the cells. The acid brood has always been found in colonies which were also foul-broody.—American Bee-keeper.

Heat a lemon thoroughly before squeezing, and you will obtain nearly double the quantity of juice that you would obtain if it had not been heated.

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Dip half a lemon in salt and rub on knife handles; then wash immediately in warm water, and the handles will be as white as when they were new.

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After washing lace curtains lay a blanket on the floor in some empty room; spread the curtains on the blanket, stretching them carefully, and they will keep their place without any

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To keep the neighbors' hens' from scratching up your flowers, spread on the ground, close to the rows or clumps of plants, strips of heavy paper, through which, at close intervals, carpet tacks have been pushed up to the head. Lay the paper point side up, and place flat stones or pieces of brick on its edges to keep it from blowing away.

THE CANADIAN BEE JOURNAL

Devoted to the Interests of Bee-keepers

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September, 1906.

EDITORIAL NOTES.

After a poor season, such as we have just had, there is a temptation to beginners and smaller bee-keepers to neglect their bees, "because they have not paid their way." This is surely a mistake, besides the cruelty of it. No enterprise ever succeeded by neglecting it in times of adversity. The good season will surely come, and it always pays to prepare for it. In districts where there is little or no fall flow, feeding will require to be done. Let it be done early and liberally, and let the colonies be prepared as carefully for the winter as if they had averaged 100 pounds surplus. If this is not done we must expect a heavy death-rate next spring.

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Bees dying in June. Friend Byer mentions his somewhat similar experience to that of Mr. Smith and Mr. Taylor in our last issue. The poison theory is not altogether satisfactory, although it might be possible. Some one calling at our office a short time ago—think it was Mr. John Clarke of Onondaga—told of his bees acting and dying off in this way when gathering honey-dew heavily. They seemed to sicken and die, as if poisoned. How does this fit in in these other instances?

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Ontario Department of Agriculture August crop bulletin reports the fol-

lowing re bees and honey:

The season has been rather a poor one for the apary. Swarming was uneven, and, on the whole, unsatisfactory. Clover was a disappointment; basswood was better, but only fair; buckwheat promises well. The weather was too wet for best results at the gathering time, and it is estimated that the average yield per colony will be between 35 and 40 pounds. Bees are otherwise in a thrifty condition.

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So far as we can learn, the arrangement of prices suggested by the Honey Crop committee, is satisfactory, and is being fairly generally realized.

There was a slight error in the C.B.J. report last month, where it reads: "When honey is sold direct to the wholesale grocer in packages suitable to their trade, a difference of 1c per lb extra should be made." This should be: "When honey is sold to the retail grocer." The idea of the committee was to distinguish between the wholesale dealer who handles honey in large bulk quantities, and sells again to the retailer. This is only right and fair, as these men cannot afford to work for nothing, they simply will not do it. They carry heavy stocks, their money is invested, and they run risks of leakages, accidents, and the fluctuations of the market. Besides, the retailer often demands smaller packages to suit his trade, which necessarily increases the cost to the producer.

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The bee season in Bruce county has not been any better than in other parts of Ontario, twenty and twenty-five pounds to the colony seems to be about the average.

Among the bee-keeping friends we have met on our ramble would mention Mr. A. E. Jones, of Queenhill, who has upward of one hundred colonies of Jones hives and managed exclusively for extracted honey. Mr. Jones, though

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an extensive farmer, is yet a painstaking and successful bee-keeper. Just recently he has erected a workshop and honey house, one of the most convenient we have come across in style and dimensions, walls and ceiling lathed and plastered, swinging windows, double doors and concrete floors.

Then there is Mine Host Schrank, who resides in the town of Port Elgin, and who showed us every kindness during our visit. Friend Schrank has in the neighborhood of one hundred colonies in twelve-frame Richardson hives, and is making bee-keeping a satisfactory adjunct to his other business; he intends going into bee-keeping exclusively after a time.

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"COME YE YOURSELVES APART AND REST AWHILE."

The Editor and family are at present holidaying at Port Elgin and Southampton, enjoying the north country atmosphere and the fresh breezes from Lake Huron. In our opinion this makes an ideal holiday for us town and office folk. The magnificent wooded banks, with their nooks and glens, jutting out here and there in picturesque headlands; the bright summer cottages, and the happy children and older people, free from the restraints and conventionalities of city life, and, above all, the great expanse of beautiful, bright water, its features ever changing, like a great moving picture, now leaping and sparkling in the morning sunlight, or tinted by the gold of the evening rays, or a vast throbbing sheet of azure, stretching out westward as far as the eye can reach, blending with the blue, cloudless sky on the horizon; again it changes, and we see it as the mighty, unrestrainable deep, dashing itself wildly against and over the breakwater, and as we listen to its roar we forget our surroundings, and we are carried in thought to the island home of our childhood, watching the waves

and breakers of the great Atlantic as they spend themselves on the great rocks on its rugged shores, and—we are boys again.

BUCKWHEAT HONEY FOR GINGER BREAD.

We read in *Le Miel*, an interesting article by Mr. M. R. Plot, on the use of honey in the manufacture of gingerbread, and honey from Brittany is the only one used in France for the purpose. This is exclusively buckwheat honey, very dark, thick, rich, strong flavored, and in cold weather it can be cut with a spade. This honey has a characteristic flavor, so pronounced as to make it unsuitable for table use, but rendering it just the thing for manufacturing gingerbread. The reason why Dijon has become the centre for the manufacture of gingerbread, is rather interesting. It came originally from Flanders, and it appears that when Philip the Good married, he was anxious, in order to accustom his wife to her new surroundings, to proceed by gradual transition and make as few changes as possible in her habits and tastes. He, therefore, brought with him from Flanders, a cook who knew how to make a special kind of cake of which the duchess was very fond, and this cake was simply honey-gingerbread. Imitators soon appeared, and they started shops for the sale of the gingerbread, and in this way the industry was established in Dijon. The town of Dijon now, in this manufacture alone consumes annually from 90 to 100 barrels of honey each barrel weighing 600 lbs., making a total of 60,000 lbs. of honey used for making gingerbread alone. The industry is so dependent on buckwheat honey that when it is scarce they will pay a high price for it, and have given as much as 110 francs the 100 kilos, or thirty to forty francs more than white honey was selling for. The principal quality of buckwheat honey is that the dough rises with it and remains light, whereas with other causes the cakes to be heavy.—British Bee Journal.

ANNUAL MEETING ONTARIO
 BEE-KEEPERS' ASSOCIATION

I am glad to be here to-night, not because I have the privilege of addressing you, but because for several years, through one cause or another, it has been impossible for me to attend the conventions. I suppose the object of this subject is to find out as far as possible what the advantages and disadvantages are of bee-keeping in Jamaica compared with bee-keeping in our own country. After my experience there for a season, and considering the matter from all points, the only thing that I can see that the bee-keeper in Jamaica has any advantage whatever over the bee-keeper in the United States or Canada is that of cheap labor. I may say, however, that it is cheap in more ways than one. You would find your helpers asleep in Jamaica unless you watch them very closely. But you will be interested in hearing that the average wage for this work would be a shilling a day, or in our money, 24 cents. When I arrived in Jamaica I took charge of a yard of about five hundred colonies, and I found a very faithful colored man in attendance, and I considered him, as my experience went, a perfect jewel. He was slow, as most of them are, but he was very faithful indeed, and nearly all the time when I would go down I usually found him at work at 7.30 in the morning. Now, this man was drawing the tremendous salary of five shillings a week, and that without board. That is an interesting point; he boarded himself out of that. They could do that very cheaply, because most of the people raise bananas, and the nights are dark; and they are also good at climbing cocoanut trees, and they knock

down the cocoanuts, and so in that way it does not cost very much. Now, after thinking of the matter for a time, this question of labor is the only point that seems to give Jamaica any advantage over Canada or the United States, so far as bee-keeping is concerned. If you are so disposed, you don't even have to pay that price, because you can get a good, strong, robust young woman for the small sum of 18 cents a day, and she will not think anything of putting a super weighing fifty pounds on her head and taking it away, and I will guarantee she will fill the bill about as well as the man.

Now I will return to the difficulties with which you have to contend. The first thing I ran up against was moving an apiary. You know what a time we have in moving an apiary in this country. The roads are often very rough and the wagon may be not very much good; but we can usually get something in the line of a wagon and something in the line of a "spring," and usually we can get a wagon that can carry about forty or fifty hives. But on the island of Jamaica everything is carried on two-wheeled carts, and as a rule the axles are not made in the best factory in the country. Often, as you go along, the wagon gives out or something happens, and you will not arrive with your hives unless they are fastened on very securely, and your bees are likely to go, even if the hives do not. You have to close the entrances carefully, and, by the way, they have usually a dozen entrances to a hive in Jamaica. While they were returning on a trip moving 125 hives one of the supers dropped off, and I told the driver that I would not be responsible for the lives of the bees. Their carts are very small and they only carry about ten or twelve hives, so that if you have to go ten or twelve miles it takes you a long time to move. Mr. Smith could tell you about a time he had moving bees.

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Mr. Smith—They carried them on their heads down the mountain. They carry them for 25 cents a hive, and they would weigh about forty pounds.

Mr. Laing—Another disadvantage is wintering. What? you say, wintering in the Island of Jamaica? I thought they had no winter there. But, you know, "Distant fields look green." I do not need to tell the difficulties we have to contend with here, but in Jamaica we understood that the bees gathered honey every day in the year, and that we might expect colonies to be strong and increasing at all times. I found, however, after taking charge about the 17th of October, that from that time on for two or three months, the bees seemed to be going down, down, down, every day and at first I could hardly understand it, and I do not know whether I thoroughly understand it yet. But it seemed to be because there was little honey coming in. It was not sufficient to stimulate the queen, and the result was that instead of lying dormant and preserving their strength they were flying around, and they were wearing themselves out, and the result was they kept going down. We doubled up to keep the moths from totally destroying them. We have the moths constantly. It is different there from here, for there the moths are good and lively at all times, and if the colonies get a little weak they soon close in and your colony is gone. I had to place the combs on top of the stronger colonies to save them, otherwise they would have been ruined.

The next point I may speak about is the question of ants. There are red ants, duck ants, little ants, big ants, and all the ants, uncles and nieces and the whole family, and I do not know but that there are a few more. (Laughter.) You can stand anywhere where chance might find you, and look first one way and then another; and, I believe you could count anywhere from

ten to a thousand ant nests. They are on the gate posts; they are on the roofs of your buildings. You will find them underneath the hive. They are on the trees, and they are half way up the trees and all over the trees, and practically all over. They are quite a size, and they look as if they were made of wood. They seem to stand the water at any rate.

With reference to these red ants. (I had a notion to bring back quite a number of them with me. I think I could have done well with them. I had five colonies of bees and they were in pretty good shape, too. I let them run along for two or three weeks and they did not seem to be getting ahead very rapidly. Finally I looked into one of them, and it seemed all right, but when I went back a few days after a lot of bees seemed to be in the bottom of the hive, and there was a good strong colony of red ants. I tried another, and I found the same condition again. They were all dead in the bottom of the hive, and the ants were good and lively. They say that on occasions some of these red ants will even tackle good strong colonies and destroy them. Then next the duck ants. These ants seem to be perfectly harmless so far a biting is concerned, but you want to make your hives of cast-iron or steel, otherwise they will likely be eaten up. They will build a covered runway along the hive, and they honeycomb the wood so that in a short time it is rotten and worthless. Nearly all the hives down there are made from the coal oil boxes used on the railroads. They are desperately hard, but this kind of material does not seem to bother the duck ants. They are very destructive so far as the hives are concerned, and are a great nuisance.

The next item, and the last one which I wish to speak of is the marketing. I do not intend to take up a great deal of time. Now in reference to the price of

honey there, I have written a little on that subject in the Canadian Bee Journal. The price that seemed general there was, I should say, on an average from two to two and a half cents a pound, and of course the package was furnished by the buyer, or if you furnish it he pays you for it. In extra cases of logwood honey you might get three cents a pound. Now, you can see that anyone in Jamaica must keep three or four times as many bees to make as much money as you do in Canada. They have to keep that many bees more and they have got to have a great many more hives; honey knives, smokers and help, etc., and that means a great lot of capital invested. So that from this standpoint it seems to me there is very little in Jamaica for a Canadian or United States bee-keeper. Some may say, well, that is on the island of Jamaica, but what about shipping honey out to the Old Country? I investigated that point. In the first place if you are shipping out you have got to buy your package, and I am pretty certain that you will not get anything for it at the other end of the line: if you ship on your own account, you have to pay the wharfage in Jamaica and the freight charges going over, and these are two very considerable items. Mr. Smith and I have had considerable experience with pork barrels down there; these seem to be the only things you can get at a reasonable figure. They will not allow you anything at the other end, so that naturally one takes the cheap article. The pork barrels do not add one iota to the quality. If it is an old barrel, there is the possibility that the sailors may have the privilege of walking around in a lot of your honey, and you will be the loser. I am just getting at the expense you will have to encounter in shipping to the old country. I have here a couple of letters that I received in correspondence with

some of the British buyers in reference to the Jamaica and Canadian honey, and they give some interesting items. I find the charges for-wharfage, freight, dock charges, interest on freight charges, customs duties, fire insurance, brokerage and selling expenses, and they count up to nearly one-third of the price. I cannot see how it pays the shippers to ship at such a price after paying all those charges, and no higher prices seem to have been realized for some years past. One thing about Jamaica honey is that it will not keep sound like other grades. It will go off in quality. This may account in some measure for some price results.

Some of them are not as particular as they might be with the care of honey. Immediately the logwood honey comes in they wish to extract every pound of it, and if they do so it is quite thin, and if they leave it it gets mixed with the dark honey, and it lowers the quality in that way, so that they have had to take the chances of the two evils. And then there are the old barrels, and by the time it arrives in the Old Country it is not likely very first-class. I have here with me three different samples of honey. It would have been better if there was a light behind them so you could see what they are like. This first sample is our own white clover honey, and the next was from Christ-hosey, and the next was from Christmas Bells, a very dark honey, and if you will notice you will see there is a great difference in them, so that they are not to be compared with our white clover honey. The dark honey sells at sixteen shillings, and as a shilling is twenty-four cents, you can see it amounts to \$3.75 to \$3.80. So that when you take one-third out of it they are not going to realize very much more than they did in Jamaica. That reduces the price down to two and three-quarter cents. Then, as I said,

honey on the that the price than it is in J that is a poin tensively in th on March 30 a dark honey w a month after other claims th pay much att extracted from average of 25 two and a half That is exactl them to let me honey they sec far I have no Smith how mu taken, and he it was not too for yourself on Mr. Smith—I no honey taken As far as the d I do not think off.

The President can visitors her uson, we will tomorrow, and I like to hear fr Buffalo.

Mr. Hershiser pleasure to me t all times, to m keepers in their ten to the rem made and the displayed. I a when I come to the average abi bee-keepers is fr of bee-keepers i There has been do not think I There was one reported this n comb honey from increased to abou a very excellent

honey on the way over, it is probable that the price will be very much lower than it is in Jamaica. As to the yield that is a point that I covered very extensively in the Journal. I left there on March 30 and they claimed that the dark honey would keep coming in for a month after that, but judging by other claims they had made, I did not pay much attention to them. But I extracted from those 500 colonies an average of 25 pounds per colony, at two and a half cents an average price. That is exactly what I got. I asked them to let me know how much dark honey they secured after I left, but so far I have not heard. I asked Mr. Smith how much dark honey he had taken, and he gave me to understand it was not too much, so you can judge for yourself on that point.

Mr. Smith—I may say there has been no honey taken off since last February. As far as the dark honey is concerned I do not think there was any taken off.

The President—We have two American visitors here with us, Mr. Hutchinson, we will probably hear from tomorrow, and I am sure we would all like to hear from Mr. Hershiser of Buffalo.

Mr. Hershiser—It has been a great pleasure to me this time, as well as at all times, to meet the Canadian bee-keepers in their convention, and to listen to the remarks that have been made and the wisdom that has been displayed. I always learn something when I come to Canada. I think that the average ability of the Canadian bee-keepers is fully up to the average of bee-keepers in any of our States. There has been so much said that I do not think I could add anything. There was one bee-keeper here who reported this morning 2,500 boxes of comb honey from 170 colonies, and increased to about 180. I think that is a very excellent report. I do not mean

to question that report, but there are some who are a great deal more successful than I have been, and I would like to know how this thing is done so that I may do likewise. Mr. Fixter, yesterday, gave a very interesting account of his experiments in liquefying honey, and so on, and it occurred to me that the bees are about as successful in keeping their food liquid as the bee-keeper. They gather it in liquid form and cap it, and it probably about blood heat in the hive. Now, it occurred to me that if experiments were made in the line of keeping honey in the liquid state and capping it up in about the temperature it is when the bees are capping it, that we preserve it in a liquid state without raising it to a very high temperature; and, another thing, we might be able to preserve the flavor in that way. The higher the temperature the more flavor I think we lose. I believe that a great quantity of honey is injured in the process of liquefying it.

I think it was Mr. Grainger who reported about his experience on the subject of educating the people through the expositions. I have had some experience in this line myself, and I know how ignorant the public are. Perhaps I can illustrate this. At the Buffalo Exposition we had quite an exhibit of honey, and we had a practical apiary there, and a lady and gentleman came along and after admiring the exhibit for some time the lady approached me and said: "Why is it that while you hold your breath a bee won't sting you?" I said that I didn't know that was the fact. "Well," she said, "it is; and just to prove it you may put a bee in my hand." I did so, and it didn't sting her. Then she began to rub it a little, and it stung her. "Oh!" she said, "I forgot; I breathed." And she said, "Give me another one." And that stung her also. (Laughter.) On another occasion some visitors came

if they chance to lose a barrel of along and looked at the bees and wondered at the work they were doing; and finally one said, "What do you do to feed them? Do you put bouquets in the hives?" (Laughter.) Now that shows you how much the general public know on the subject.

As I keep three cut-apiaries, the question of the prevention of swarming was of interest to me. In one yard I make some comb honey and allow some swarming, but I am not able to be at the other yards or employ anybody to be there. I will tell you my method of procedure. It is effective, and I get the honey. When the bees become populous in the hive I put on another storey and allow the queen the range of both the upper and lower storey; and when the colony gets strong and are likely to swarm within a few days—any one can tell by the behavior of the bees—I smoke the bees, open the hive, and look in until I am sure the queen is in the lower portion of the hive. Then I remove that to another hive, and substitute another lower portion, placing it on another stand. Those are nearly all ten-frame hives. Now there is brood in both stories, and the portion of the hive that I have removed to another stand will not swarm, as it will be depleted, because they will go back to the old. Give the other one a virgin queen, or if you can't attend to them they will get a queen themselves. As I say, you can allow them to raise one, but if you want them to have a queen as quickly as possible, and you have time, it is a good idea to introduce a virgin queen or give them a ripe brood as well, that is when it is full of brood. Now then, by the time this brood is all capped over, in the white clover honey flow, this upper storey is ready to extract—by the time they get a laying queen again the honey is ready to extract. And if the season is

a long one, and you can put another one on, you will get another partial crop of honey. I believe that is a good way if you are running for extracted honey. If I had a little more time I might take up the subject of wax-extracting. How many colonies do you suppose there are in the Province of Ontario?

A Member—About 16,000 bee-keepers and about 200,000 colonies.

Mr. Hershiser—Now for some years I had about 200 colonies, and I found that the amount of wax I was able to obtain from these colonies of bees was about 200 pounds, or about a pound of wax to a colony of bees. I saved up my slumgum and I set about making some experiments with it, and I found I was throwing away about 40 pounds of wax, or about 20 pounds for 100 colonies of bees every year. I thought I had been getting the wax out clean, but I found that was the amount I was throwing away. Now from this I deduce there are about 40,000 pounds of wax being thrown away in the Province of Ontario, if you are no more successful than I was. I don't say that you are all doing this, but you cannot convince bee-keepers that they are throwing away wax.

Mr. Gemmell—I am getting all the wax out of my combs.

Mr. Hershiser—I am well satisfied that Mr. Gemmell is making too broad a claim, because no person gets all the wax out of the combs. I can get it to within one per cent. But all I wanted to do was to call the attention of the bee-keepers to this matter. The wax-extracting, and a good many other things, are in a primitive stage, as you will find out within ten or twelve years.

ADDRESS

By Hon. Nelson Monteith, Minister of Agriculture, Toronto.

I am sure modesty is a virtue amongst public men, so I will speak to you very briefly to-night, especially so

as I feel less a than with some called upon to experts in their specialists. great interests dustry in this be admitted th accomplishing gro tened to what to the great be province, over extent, and I raised on the That is what tl at present I su



HON. NELSON MONTEITH

is confined to a That is about the under cultivation there is a great be occupied by (be. This bee i invested capital very large amou you have in your financial asset for have from what ure of seeing up Massey Hall that to the front in th ty of your produ this, but I belie modest like myse

as I feel less at home with this subject than with some others. I feel that I am called upon to speak to men who are experts in their business, men who are specialists. When we consider the great interests involved in the bee industry in this country, I think it will be admitted that your efforts are accomplishing great results. I have listened to what has been said in regard to the great bee industry of this home province, over 220,000 square miles in extent, and I believe bees may be raised on the greater portion of it. That is what they say up north. And at present I suppose the bee industry



HON. NELSON MONTEITH

is confined to about 20,000,000 acres. That is about the same amount of land under cultivation or occupied here, and there is a great, big territory yet to be occupied by the people that are to come. This bee industry represents an invested capital of about \$1,200,000, a very large amount of money, so that you have in your keeping quite a large financial asset for this province. I believe from what I have had the pleasure of seeing up at the exhibition at Massey Hall that you are keeping well to the front in the matter of the quality of your production. I am glad of this, but I believe the bee men are modest like myself. They do not ap-

parently put before the public the value of honey as a food in the way it should be. It hasn't been advertised in the way it might have been, because you have been satisfied to produce the article and leave it there. You haven't pushed the business as some other men have in other lines. I am just saying this from my own observations as a citizen amongst you. The use of honey is very limited as yet, and it is one of the best natural foods produced, and I see no reason why it should not be more largely used by us as a people outside of the export trade altogether. One pound has as much nutriment in it as five pounds of pork, and when you know what pork costs, you begin to realize the importance of the comparison. There is one thing that appeals to me as a citizen of this country. I believe that in the matter of varieties of bees possibly you are well to the front. However, it is well to be ambitious to have something better. You know that for many years the old German bee was the only bee known here. After that, the introduction of the Italian was a long step in advance; then came the Cyprian and later the Austrian bee. Now they are reporting from the American Department of Agriculture a bee known as the Caucasian. I am not one of those who are satisfied to sit down and say I have the best. I am always ready to try something new and something better. When we think we have reached the ideal, then we lose ground. That is the reason why I point out these things—so that we may see whether the Caucasian is what it is claimed to be or not. You are the men that have to prove this. However, I am not here to speak at any length. I wish you success in your business, because your business is not confined merely to honey-making. It has a wider sphere of usefulness in this country—an influence that is beneficial to the fruit-

grower and the seed-grower, and for that reason I sympathize with you in your work. These are some of the things I wished to say to you, knowing full well that you know more about this special work than I do. I came here largely on behalf of the Government to sympathize with you in the work—to show that we desire to uphold you in your work. I thank you. (Applause.)

The President—I am sure we are all delighted to have heard the words from the Minister of Agriculture. He is to us what the queen bee is to the hive. Without him we could not exist. His remarks about the market were along the right line. Honey is not understood in the home markets as it should be, and is not appreciated. I know I voice the Association when I thank the Minister for coming and addressing our meeting. (Applause.)

Hon. Mr. Monteith—I am sure that after your very hearty thanks I feel at a loss how to express myself, but I can promise you that in our business with the Department you shall receive our co-operation. I shall be pleased to meet with you at any time and discuss the things that may from time to time require the assistance of the Department; and you know the bacteriologist is to a great extent at your disposal. I hope as the years go on that we shall be able to extend the work of bacteriological research along lines that may help to solve some of the questions that are now difficult for us to understand. (Applause.)

Graniteware can be soldered as easy as tinware by adopting the following method: Brush over the edges of the holes to be mended with shellac—Both inside and outside—and immediately apply the melted solder, which will adhere firmly.

To remove coffee stains rub the spots with glycerine and water and they will disappear like magic.

HOW I INTRODUCED 24 QUEENS SUCCESSFULLY IN JULY.

As Doolittle says: "Queens and cells are more easily introduced into a 200-bee nucleus than to a 20,000 colony." Years ago I used to succeed very well in introducing queens to two frames of hatching brood with the adhering bees removed a foot away from the old stock and when nicely laying quietly placing those two combs with the queen between them back into the old hive. I tried a modification of this method this year, but as I was making new swarms with each of the queens I removed the three combs quite a distance and added to the adhering bees as many more by shaking them off other combs.

To avoid unnecessary running to and fro I prepare a hive with three or four worker combs, full sheets of foundation, and as many more frames with full sheets or starters, and also pull the cork out or tear the paper off the queen cage containing the queen I wish to introduce, and lay it on top of the frames, then proceed to the full colony, go over all the combs in the brood chamber, setting aside the one with the queen, which must need be located, and placing three hatching combs on one side of the empty hive, and two or three more combs having most bees on them also into the empty hive, then place the frame back having the old queen on it, and the three empty combs out of the empty hive, and carry the new-made swarm to its future stand and after shaking the bees off the two or three extra combs into it; place the new queen on the frames and carry back the extra combs to the hive you took them from.

If increase is not desired, but simply the elimination of undesirable queens the nucleus should only be removed a foot or two away and then united to the old (cross) colony in the fall during buckwheat flow. Yesterday I was telling J. L. Byer of my indifference

success in introducing strong hybrid queens, and about half of them also suggested a plan, which was of hatching brood shaking the old nucleus also and leaving him in the nucleus also and thus securing more the got out of them without disturbing any running any more or having the queen up.

When introducing a super on I find a very handy tool for and also for scrubbing down to place the cage and attaching a from falling down should be upward all into the exit arrive by mail them wire side of a super, or queenless stock to them, and if papered over the can drop of coal oil queen cells should be moved, and if any days afterwards convenient. I then remove all brood cross hybrid, hive our new queen. five I succeeded in one outyard, but two turned out and I called at cannot account for it. It was late in the made the nucleus very cross hybrids to find the queen on the bot

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success in introducing mated queens to strong hybrid colonies after killing their queen, and he said he had lost about half or more in this way, and also suggested an improvement to my plan, which was to place the combs of hatching brood into the super after shaking the old bees and queen off and leaving him in the super a day or so, thus securing mostly young bees for the nucleus also enough more bees could be got out of the super to go with them without disturbing the lower story or running any risk of taking the queen or having the trouble of hunting her up.

When introducing into a hive with a super on I find an old thistle spud a very handy tool for prying frames apart and also for scraping the top of the comb down to the midrib, where I place the cage after removing the cork and attaching a wire to it to keep it from falling down, also the cork end should be upward so dead bees may not fall into the exit hole. When queens arrive by mail I immediately place them wire side down on the frames of a super, or preferably on some queenless stock till ready to introduce them, and if paper instead of cork is used over the candy end I put a small drop of coal oil on it. Of course, all queen cells should be thoroughly removed, and if any are started four or five days afterwards remove them also, if convenient. I think it would be safer to remove all brood and eggs from a cross hybrid hive before introducing our new queen. Out of the last lot of five I succeeded in introducing two to one outyard, and out of the three left two turned out missing in another yard I called at on my way home. I cannot account for the loss of those two. It was late in the evening when I made the nuclei and the bees were very cross hybrids, and it took a long time to find the queens, which were found on the bottom board in two

cases, and in the third on the alighting board after shaking about an inch thick of bees, among which she had hidden. Quite an effort in the twilight, without spectacles, for one 60 years of age. In one case an old queen that had ceased laying was discovered before they had gnawed the new one out, but they never started queen cells, but in the other case, of course, they had. I got thirty this season, and expected to be able to tell you I had succeeded with every one of them but "the best laid schemes o' mice and men gang aft a-gle." It may be I put too many of those cross bees, late in the evening, after much smoking and disturbance, into my nucleus in one case, and that like where you plant a young apple tree in the place where one had died it will die also in the other case of failure. Possibly the presence of a few old cross black bees in the nucleus, after their old non-laying queen was removed, would neither allow the new queen to live or allow the added bees to raise another.

R. F. WHITESIDE,

Little Britain, Ont.

Honey crop a comparative failure in this locality. Dandelion and wild mustard gave quite a flow, alsike clover was nearly all killed, white clover bloomed moderately, basswood bloomed well, there has also been some buckwheat sown, but my crop from all sources, will not be above 20 or 25 lbs. per colony spring comb. Swarming was not as bad as some former years. Lost very few young queens, and bees are going to be in good condition for winter. Had a terrible drouth which was broken by showers only a couple of weeks since, and white clover is picking up in fine style. Some starting to bloom again. Hope there will be rains to encourage growth this fall, and snow to keep it warm this coming winter.

J. K. Carling.

Almonte, Aug. 30, 1906.

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1906

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1906

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