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CANADIAN BEE JOURNAL

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NEW SERIES
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WHOLE No
416

Careful attention should be given to Mr. Shaver's article "Old versus New Process" which appears in this issue of the C. B. J. At the

"Old vs. New Pro- last meeting of the O. cess."

B. K. A. the new process was strongly op-

posed by a great many of those present, but after reading the above mentioned article and carefully examining the photos which also appears in this issue in connection with it, we believe that many of these same gentlemen will be led to change their views on this question.

* * *

The Gould, Shapley, Muir Co., will this year, as heretofore, exhibit a full line of Wind Mills, Grain Grinders, Wood and Iron Pumps, Bee Supplies, etc, at Toronto, Ottawa and London Exhibitions, and will be pleased to have any of their numerous friends, who may be in attendance at the above named Exhibitions, call and inspect their goods.

Thoughts and Comments.

A. N. Draper in Gleanings in Bee Culture writes: "I have made a practice, for a number of years, of taking off the outside packing case containing the leaves when the warm days would come after the bees were confined for some time by cold weather, and turning the winter case, containing the leaves, upside down so that the sun and air would warm them up as well as to give the bees a cleansing flight."

I have adopted that system. There are days when the bees could fly with perfect safety but the warm sun will not penetrate the packing in time to bring a large number of the bees out to have a cleansing flight. By removing the wooden cover and a portion of the top packing the sun penetrates the hive and arouses the bees to activity. Even after the bees have had a cleansing flight the above system can be followed to advantage to stimulate the bees to brood rearing, as the queen will lay more in spring when the bees fly out even if they gather nothing more than when they remain quiet in the hive.

On the same page of Gleanings D. N. Ritchey writes: "I have no doubt Mr. Dadant has produced large yields of honey with his large hives; but I believe he could have done better with smaller ones. I will admit there are a few localities where a large hive would give better results in extracted but not in comb honey. We must remember that the most of our large comb honey producers use small hives."

Locality in my estimation has undoubtedly much to do with this question, but there are other considerations equally as important. We differ in our conclusions so frequently because we do not discuss a question in all its bearings or build upon a proper foundation.

If we have a brood chamber a certain size and use it as a spare room for honey when it should be a brood chamber, we have not done justice to the size of the hive, or if we use it as a brood chamber when it can be used as such to advantage and then fail to replace the brood combs with stores after the honey season and before winter, the hive has not received justice. What we mean is this, if the bee-keeper wants to run a large number of hives or only a few and wishes to do so with but little care and attention,

he can best do so with a large hive. I am not saying that this system, the system of giving the bees but little care, will give him the best returns, but that determined to follow out that system the large hive will answer his purpose better. Why? Because having more room the bees are less likely to swarm. Having more room below, the bees, at the close of the honey season, are likely to be better provided for stores and where the supers are removed and the bees allowed for winter what stores they may have below, they will be better provided. Again, in spring many colonies in smaller hives do not build up as quickly as in the layer, not because there are more bees in the layer, but because in the layer brood chamber there is more honey that the bees can turn into brood, or, what is quite as likely, there is more room for brood rearing and the bees can convert the honey into brood, which the bees are less likely to do in a smaller hive unless the position of the combs is changed.

Layer hives may also in some respects be an advantage with a prolonged honey season if the honey gathered is light honey, but I doubt if it is when the light honey flow is of short duration and the second flow dark honey and that in the average locality an uncertain crop such as buckwheat, golden rod, boneset and aster. Why? Because with a short light honey flow, the bees which are bred during that flow come too late to assist in gathering honey; the honey then which is consumed lessens the light honey crop. The entire question is one which cannot be hastily settled. Locality and management have much to do with the matter, but management even more than locality.

A correspondent in the British Bee Journal asks,—One of my hives swarmed to-day (June 15) and I have hived the bees on six frames in a temporary hive. Now supposing a second swarm should issue in eight or ten days, would it be safe to unite the two lots, putting the drawn-out combs into a new hive and shaking off the bees amongst those of the new swarm. 2. The queen of the prime swarm was hatched in 1897. Would she, or the virgin queen at the head of the second swarm, be most likely to conquer in the inevitable battle for supremacy? 3. I am not anxious for increase of stocks, having eight now on my front lawn, and I should like, therefore, to do something to avoid having more. The reply is as follows.—The difficulties of uniting after a lapse of

ten days are the same as with two swarms from different hives. Your proposed plan would probably, therefore, result in most of the bees of the second swarm being killed, unless proper precautions are taken. 2. We should expect the virgin queen to be the victim, but it is not certain. Our advice is to return the second swarm to the parent colony on the morning of the day following its issue. If this is done there is not much fear of the swarm coming off again, and no increase of stocks will follow.

[I would prefer very much to return the second swarm to the parent colony the evening of the second day, there can then be no swarming until next morning and the two queens being in the hive during all that time are much more likely to have a royal combat before morning and more likely of leaving only one queen and therefore lessening the chance of swarming out. Again, I would rather expect the young, strong and more active queen to be the victor as the old queen is handicapped with the large ovaries and eggs, but I certainly would not unite the second and first swarms.—Ed.]

Canada's Greatest Fair.

This year will mark the coming of age of Canada's Great Fair and Industrial Exposition, which will be held in Toronto from August 28th to Sept 9th. It is just twenty-one years since Toronto Exhibition was established as an annual institution under the present management. During that time it has increased five fold in every direction, and to-day can fairly lay claim to have assumed a national character. Last year upwards of 300,000 people attended, and this year such arrangements are being made as will warrant the expectation of a still larger attendance. Many entirely new features will be presented, while the exhibits, with an increased amount given in prizes (totalling \$35,000), will undoubtedly crowd the six hundred thousand dollars' worth of buildings to their utmost. The usual brilliant military spectacles will be given, illustrating recent famous feats of arms on land and sea by both England and America, and arrangements have been made for an illustration of wireless telegraphy, wireless telephoning and the improved X rays. In short, the Exhibition will be more than ever up to date.

Controlling Sex in Bees— Control in the Formation of Sex.

—PETER BOIS, British Bee Journal.

The editors of this Journal (on page 202 of the issue for May 25) requested a few lines from me with reference to what I stated in my lecture before the members of the Jersey Natural Science Association on the subject of "Controlling Sex in Bees." I lectured during two hours on a great variety of matters appertaining to bees, their habits, uses, etc. But the subject on which I spoke mainly, while the egg of a bee was pictured on the screen, was that of "The effect of checks on the sex of the egg." The remarks which I made were somewhat as follows:—

"Bee-keepers are able, in a measure, to regulate the production of drones in the hive, and cause the queen to produce almost entirely worker female bees, with but a small percentage of drone or male bees. This is effected to some extent by having almost all worker comb in the hive and only a small amount of drone comb. And I consider that bee-keepers have paid more attention to this matter of the production of sex, and that they have obtained better results than the breeders of other stock generally. I have been able to keep my hives for several years past from swarming, and producing but very few drones per hive, while in worker bees, or female nurses, my colonies have been exceedingly strong. This has been achieved by noticing that drones were produced, and swarming also, when the queen in full 'lay' received severe checks; these 'checks,' at such a time, I distinctly noticed, produced drones or male bees, while freedom from checks, which enabled a queen to go through her laying season, produced female workers only, but with very few males. If, therefore, bee-keepers can govern the production of males at will, the breeders of other stock ought to be able to do the same if they know the law of male and female.

"Fowl fanciers can induce birds to lay very early in the season, and ensure that a fair percentage of the eggs are fertile; but such eggs usually produce cockerels, and the more fertile the hen the greater the percentage of cockerels. Now if we notice that checks are much more likely

to be produced early in the season, when the weather is more varied than later on, and that these changes of temperature would chiefly affect the fowls whose ovaries were the most developed, we get at the reason why eggs set early produce a preponderance of male birds.

The queen wasp gets in full 'lay' more towards the fruiting part of the year than does the queen bee, and at such time cold nights begin to set in, and greater atmospheric changes take place that during midsummer. This has the effect of causing her to produce some drone eggs while she laid only worker eggs previously. Animals generally are more equal in the production of males and females than bees and wasps. On the other hand, the queens of bees and wasps, although their ovaries are far more largely developed than those of other animals, and would be thereby more liable to be affected by checks, yet they are better protected against outside influences than animals generally. The mother-bee, like the mother-wasp, is in the midst of a full colony of her own progeny, which becomes an increased protection in proportion as the maternal ovaries become developed; secondly, they are fed with a food that can be made to produce but little variation in its influence; thirdly, they have the protection of the combs to guard them against sudden changes of temperature, and the combs of each of these insects, although so widely different in the material of which each is composed, yet both are recognized as among the best non-conductors of heat and cold; fourthly, the hive in which they breed is so protected from the extremes of temperature as to retain the warmth of the brood-nest in a very great degree while the queen bee is extensively employed in egg-laying. Other animals, while less fertile, are at all times far more exposed to outside influences, and this may in some measure account for their producing a more equal number of males and females than the two insects cited. I infer, therefore, from these observations and others of a like nature, but all giving indirect evidence, that checks can, and do affect the production of sex in the egg prior to fertilization, or at the time when the egg is ready for that purpose. More direct evidence, however, could, I think, be obtained by experimenting with the eggs of animals, such as frogs and fish, whose eggs are fertilized only after being laid.

The above is, in substance, what I said in the lecture referred to on the subject

of checks in producing sex. But I also briefly explained my views with reference to eggs and the influences to which they were subject so far as receiving checks, as they matured ready for being fertilized. It has long been observed with reference to some fish, that when the females experienced difficulty in reaching the spawning ground, the eggs spawned, producing a far greater number of males than females. A passage on "Fish Culture" in one of the editions of "Caswell's Technical Educator," which serves to give an example of this, reads thus:—

"Artificial spawning for salmon is very simple. All that is required is to obtain as many female fish, or spawners, as are deemed sufficient to produce spawn enough to restore the river. Some works of pretention tell us that the males are more scarce than the females; but experience and observation teach us the remarkable fact that, amongst all salmon and trout spawning beds, the contents of the nest will be found to contain seven cocks to one hen. This is the more to be observed in those rivers in which the weir stops the fish from ascending into the more ample and more natural—and, consequently, more acceptable—spawning ground. In the pools of such weirs they crowd together, and as the fish cannot hold their spawn when fully ripe, they fight and hustle each other for an appropriate place; and in this way not only are the ova scattered about, and in most instances entirely wasted, but the fish are much injured by fighting and seldom or never (as is well known with most fish) recover even from the slightest bodily flesh wounds. Hence the great importance of salmon ladders to admit of their reaching a greater field of operations in which they may begin and finish their interesting and profitable duties without hinderance and molestation."

The law which appears to govern the formation of sex—so far as checks are concerned—may be stated as follows: An egg which is fertilized free from check produces a female. In other words a female is formed from an egg that has received no check in its fertilization when (or just prior to) being fertilized.

The following rules may also be stated with reference to the working of the law just cited: (1) A female (mother) may be predisposed by anterior checks to produce males, (2) A recent check exerts its greatest force if received when the ovaries are nearing (or have just reached) their greatest development for egg production.

And, also, the more the ovaries have been favored toward extensive development, by prevailing favorable conditions, the greater the effect in the direction I have indicated.

The eggs laid by a virgin queen clearly show the effect of an absolute check in producing males. When these eggs were ready for being fertilized, none of the elements necessary for the purpose were present; and they therefore received an absolute check, so far as fertilization, but possessing of themselves the necessary vitality to produce bee-life, but males only.

The eggs of a fertile queen-*bee* are free from check, and in consequence produce females. On the other hand, when she lays eggs that have received an absolute or extreme check, they are non-fertilized, and produce males that resemble the mother only. She also lays eggs that have received a check sufficiently powerful to prevent them forming females, but that admits of their being fertilized with male semen; they then produced males in more or less degree resembling both parents. This latter case, which had not hitherto been solved, presents new interests, not only for the explanation it affords of the effects produced by the check described in the present instance, but because the effects of this check are also common to the effects of animals generally. The effects produced by this check are therefore important to breeders of farm stock or of domestic or pet animals, and also to fish breeders, as well as to bee-keepers; in fact, in every case where it may be desirable to specially produce females, or males, of any variety.

To control the formation of the sex in the egg at will is a science in itself, and some of the details to be attended to must be special to, and necessarily vary, with the kind of stock dealt with. PETER BOIS, Jersey, June 10.—British Bee Journal.

The automatic honey extractor gives splendid satisfaction and the comb foundation and other goods are first class.

EDMUND J. BERRY.

Brome, Que., July 15th, 1899.

I got 40lbs of your foundation this year through a friend and I am glad to say it is first class, the best I ever had.

E. H. HOPKINS.

Lindsay, July 15th, 1899.

Notes and Pickings.

—D. W. HEISE.

Here I am again, Mr. Editor. Having just completed my labours of harvesting a honey crop which reached the handsome average of less than eight pounds per colony, spring count, I have just breath enough left to say "I am alive." Perhaps after an absence of some months from the C. B. J., I may also have enough energy and "dutch wit" left to chronicle a few Notes and do a little Picking.

The question has often been asked in the Bee Journals, "how many colonies will overstock my locality?" I think a goodly number of us have very convincing evidence this year, that only a very few colonies have badly over-tocked quite a number of localities, and thus it will always be when honey plants fail to secrete nectar.

During that extended conversation which took place between E. R. Root and S. A. Niver, as reported in Gleanings, Mr. Niver made the bold assertion, that he could produce three sections with a row of empty cells around the outside, to one filled solid to the wood. He, however, afterwards qualified that assertion by saying "nearly three." Pretty large difference, "eh"?

This has been the first "off year" for bee-keepers in this locality since I have been in the business. Just why we should be so unsuccessful in securing a surplus crop, I am somewhat at a loss to know, although I am aware of some conditions that contribute largely towards our light crop. In the very first place a large percentage of bees were badly crippled with wintering on honey dew, and therefore were not in a condition to make the best of even a poor flow in the earlier part of the season, in the next place, the clovers (our main stay) were badly winter killed, and what little did survive failed for some reason unknown to me to secrete nectar very lavishly. This being past, our hopes were left hanging on the basswood, which promised well, and although when the time arrived it bloomed profusely, and though we had frequent refreshing showers both before and after the time of bloom, yet it failed to furnish much honey, and the majority of the supers were left

on the hives untouched. There was one condition prevalent throughout the whole season, which I think is responsible more than anything else for the inability of the honey plant to fulfill its mission; I refer to "cool nights." Very few evenings indeed, but one would feel more comfortable with his coat on than with it off, and could endure being pretty well blanketed after retiring for the night.

Some who read the above may conclude that I am somewhat down in the mouth regarding the business? Not at all, dear friends! I have enough honey to supply my home trade, and I expect to realize a fair price for it. The bees are placing themselves in pretty fair condition for the winter, therefore I am not feeling badly. While I am ready to confess that my enthusiasm is not up to such a high pitch as it sometimes reaches in a prosperous season, yet I have every confidence in the bee, and I am longing for another of those seasons when a 'feller' is forced to get down to solid work in order to provide sufficient storing capacity, and remove a large surplus crop, especially in only part of his time can be given to his bees. Never mind if it does cause the beads of perspiration to trickle down over your eyes, (particularly if you wear glasses). Never mind if you are repeatedly called from your noonday meal to hive and take care of swarms, and not having the privilege of completing that meal until "tea time." All this donates prosperity in the apiary, and is much to be preferred to a season like the present one, when the Apiarist enters into all his management and manipulations with his bees in a half hearted sort of a way, realizing as he does, that much of his labours must be in vain in the bee yard. Give me the old fashioned honey seasons, with plenty of work, plenty of sweat, will endure the "back aches" if necessary, but beyond all, plenty of honey, and consequently much more money. See?

Doctor Miller, G. M. Doolittle and E. R. Root, are in an animated discussion, in which hair splitting is resorted to in order to define the true color of imported Italian bees. Nonsense, brethren, what care the majority of honey producers whether their bees are yellow, black, maroon, chestnut, the color of leather (which is legion) or golden, or what not so long as the gentle, good defenders, not excessive swarmers and come up to the good standard generally, but above all 'roll up the honey.' That's what the most of us are

in the business for, and that's what makes our pocket-books bulge out, "not color."

I had fully intended to defend myself against the accusation made against me by the Editor of the C. B. J., whereby he charges me with stealing the wit of an Irishman. Being thus branded as a common thief, I will refer to it only briefly here. Since the American Bee Journal has suggested a personal meeting for the avenging of the great injury done me, which it stigmatizes as "outrageous slander," and since the said Journal has so kindly proffered its assistance in such a meeting should take place, for which I am grateful indeed, I have concluded that perhaps such a course would be the best to pursue, and by the way, owing to my great physical powers, (something over 4 feet high, and at least 8 inches in girth,) I always prefer to settle such matters in a personal way, rather than attempt it through cold print. But I must decline to act upon the suggestion of said Journal, that the meeting take place in Philadelphia, for much as I admire the national bird of the great American Republic, I cannot say that I would enjoy seeing her dine on a Canadian Bee Journal Editor. I will therefore lay low until someone is kind enough to provide an arena on Canadian soil. I would infer from the American Bee Journal that it presumes Editor Holtermann to be Irish? Far from it Mr. A. B. J., Why bless your heart! With a strong wind blowing from the east, if you were at all attentive, you surely could not fail in getting a strong "sour krout" aroma as it is being gently wafted from Brantford to Chicago.

"If it were necessary for me to buy new fences every year and throw the old ones away, I am convinced it would pay me in dollars and cents. Not only this, but if it were necessary to throw away the supers also, it would pay me to buy new ones every year, so great are the advantages of the fence and plain section over the old style sections".—E. W. Brown in Gleanings. I am not a comb honey producer, but would consider the above a very strong endorsement of the claims of superiority made for the plain section and fence. And in face of so many testimonies in their favor, I am surprised that so many "fogies" will persist in sticking in the old rut. Why not fall in line with the "fad" as it has been called, you cannot afford to slumber along the beaten paths of the past.

The much praised and condemned King

Bird has at last been convicted as a malicious enemy of the honey bee. Many an apiarist has in the past discovered said bird red-mouthed in the act of catching, and as they supposed, gulping down bees, but when a little lead tonic was administered to bring his birdship to terra firma, the dissecting knife failed to uncover a worker bee in his anatomy. This led many to conclude that the King bird never molested the workers. But it has been left to A. J. Wright to discover that the culprit will, and does catch up workers but instead of swallowing them as he would a drone, or any other insects, he simply extracts the honey and other juices, this done he allows the carcass to drop to the ground. Rather hard to believe that his birdship should be able to distinguish the danger between swallowing a worker bee and drone, but truly animal instinct is beyond our conception.

I wish to thank you, Mr. Editor, for the fair criticism you gave my article on exhibits. As I did not at all expect that it came anywhere near perfection, and realizing that it is very often by criticism and the exchange of ideas, that we are able to get at the facts of a case, I would therefore invite further criticism of said article from those who have had practical experience if they choose to do so.

From a Friend.

This summer I had a very good opportunity to watch the Locust tree as bee pasturage, there being several hundreds of this tree within reach. It comes in just when most needed, after fruit bloom and a little before clover. When the bees were working on the outhbert raspberry—the best variety for pasturage—the Locust blossoms opened and the raspberry patches were completely deserted for these trees which roared until dark like swarms and the rank odor of the honey permeated the yard at night, but unfortunately the Locust does not last more than a week and the bees went back to the raspberries. These two plants are not to be despised as amusement for bees, as I had as much as thirty-five pounds in a single colony from these two sources; though of course they may hasten on the swarming impulse. Curiously enough the Locust belongs to the same family as the Clover. It may perhaps add to the dignity of the bee-keepers to know that one of the 420 varieties of this tree, the Acacia Seyal is identified as the Shittah tree of the Bible which supplied Shittim wood.

Fertile Workers.

—A Subscriber's Question.

When fruit bloom opened out I put a comb honey super on one of my strongest colonies of Italian bees, they started to draw the foundation out and stored some honey. On June 14th, 15th, 16th, and 17th they swarmed and returned to the hive each time. On June 24th they swarmed again and clustered, I presume the queen refused to come out, as I could not see her on the bottom board attempting to fly, though she was a last year's queen and very good, as the brood nest was filled with brood. However, the bees must have killed her, and the delay from the 17th to 24th, when they swarmed, must have been waiting on the young queen. I hived this swarm on full sheets of foundation and put it on the old stand, moved the old hive away, and transferred the comb honey super on the new swarm immediately. They started work in it at once and filled it about half full when I noticed they commenced to withdraw and clustered under the frames, more or less, (I had the wedges on) and did not seem to be working as well as they should. I made examination July 14th, and found the hive queenless and with fertile workers, I think. There was no sign of any brood or of there having been any, though there was 3 or 4 frames of eggs, those were deposited very irregular, some cells had from 1 to 4 eggs in them, as well as 3 or 4 queen cells with 3 or 4 eggs in them, some were deposited in the centre of the cell an others against the side of the cell, also eggs were deposited on top of half filled cells of pollen. I gave them a frame of eggs from another hive on the 14th inst., and examined it again on the 18th inst., but they had started no queen cells. I then caged a good laying queen and put her in for 48 hours, when I opened one end of the cage and corked it up with a piece of comb and honey placing it back in the hive, I left it there until today, the 24th, when I again examined the hive, but found no queen in it, although I could not find her laying in front of the hive, I am sure she is not in the hive, mostly all the eggs I found when examining it on the 14th are nearly all capped over, and of course they are all drone brood, not a working cell except the frame of

eggs I gave them. When they left the comb honey super I removed it to another hive and put on a drawn out extracting super, using queen excluder, at the time I did not tumble to the idea, and they have gone up and have it laid nearly full of eggs. By this explanation I think you will be able to tell if this is really a case of fertile workers and if so, is there any use of trying to introduce another queen, or unite it with another colony, or destroy the colony at once. If to be united, which way should I best proceed, and if to be destroyed, can I save the combs or will I smother and render both brood nest and extracting combs to wax? I would like to have as full particulars as possible in this case so I would be prepared to do the right thing another time. Is it not strange that the bees remained in the hive when hived if the queen got lost, or would it be possible that the queen was lost in some way when going out to mate as she was a virgin. If you will withhold this from the C. B. J. and give me full information by letter, I will gladly pay you whatever you ask for your information and trouble. A. R. R.

[In reply to the above I would say that it is undoubtedly a case of fertile workers. The first swarm returning was an indication that the queen could not fly and go with the swarm. You may not have seen her, but she certainly was there and did her best to follow the swarm, she probably got some distance from the hive, perhaps she could fly a little, and she was lost. The swarm then waited for the young queen and it is almost a certainty that she was lost in flying out to mate leaving the hive queenless. Fertile workers then appeared and I always hold that when they step in the sooner the hive is destroyed the better, the majority I believe favor rendering the comb.—Ed.]

To one Port in Germany.

The honey and wax market in Antwerp, Germany.

In the year 1896 there were brought into the seaport of Antwerp, 556,718 pilogrammes of honey, or 1,444,866 lbs.; in 1897, 1,562,678 lbs., of this in 1897 the United States sent 346,506 lbs., and Canada contributed nothing.—The above figures are from the Munchener Bienen Zeitung.

[We have been told time and again that Germany would be a good field for Canadian honey. The above looks like it. Some Canadian apples sent to Germany have also realized good figures.—Ed.]

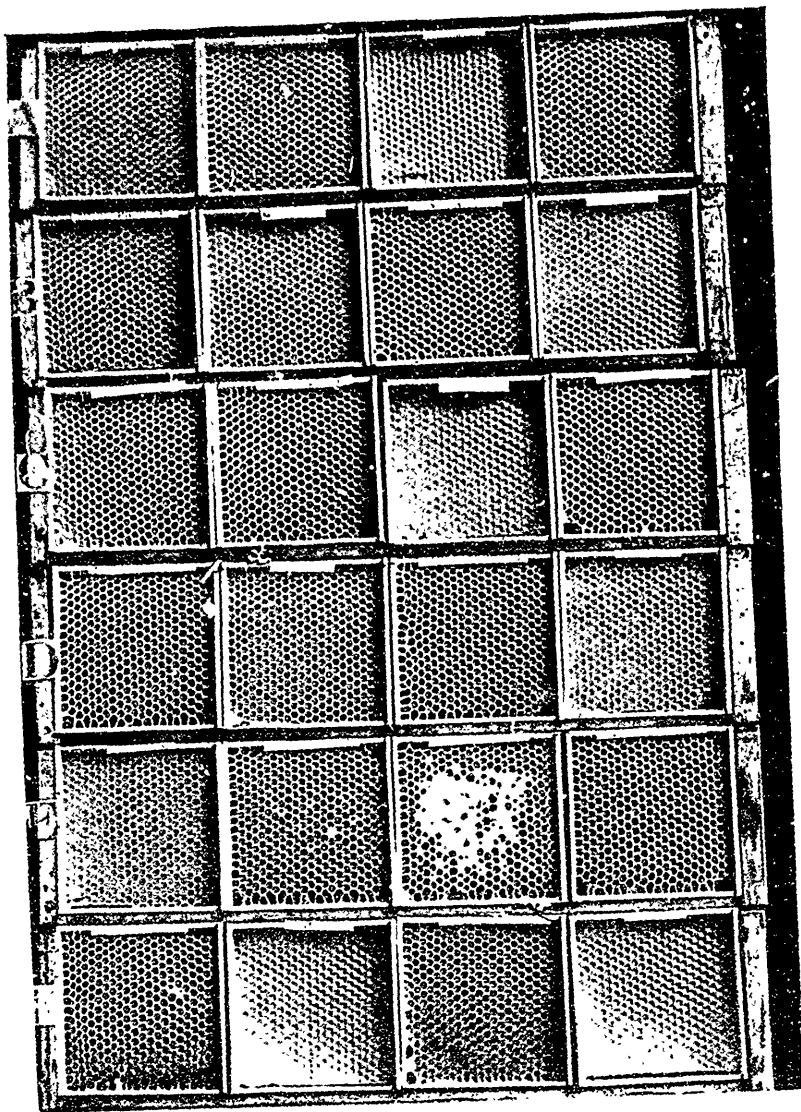


FIG. 2. Sections as left by the bees when removed.
 NEW PROCESS—Line A sections 1, 2 and 4; Line B sections 1 and 3; Line C sections 1, 2 and 4; Line D sections 1 and 3; Line E sections 2, 3 and 4; Line F sections 1 and 3.

reasons were I don't know, I certainly believe that they were honest, but since then I have been doing a little experimenting that at least satisfies me on the point and may perhaps be worthy of the consideration of others. On June 24th, of this season I placed on one of my best colonies, a super with sections and full

sheets of foundation, old and new process placed side by side alternately. The "new process" was that manufactured by the Goold, Shapley & Muir, Co., bought from their ordinary stock, they call it their "extra thin" and runs about thirty sheets to the pound. The old process was supplied to me by a bee-keeper friend,

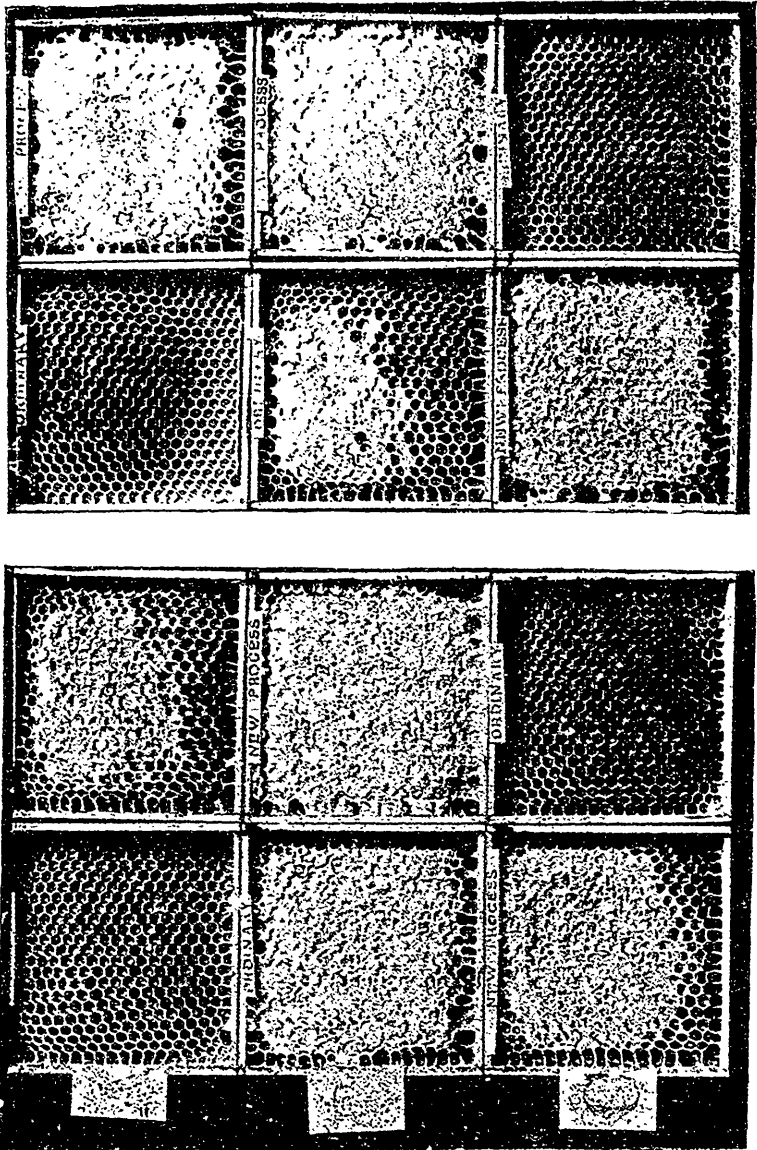


FIG. 3.

Twelve Sections taken from second super after close of honey flow.

Line "A," Sections 2 and 4, New Process. Line "B," Sections 2 and 4, New Process.
 Line "C," Sections 1 and 4, New Process.

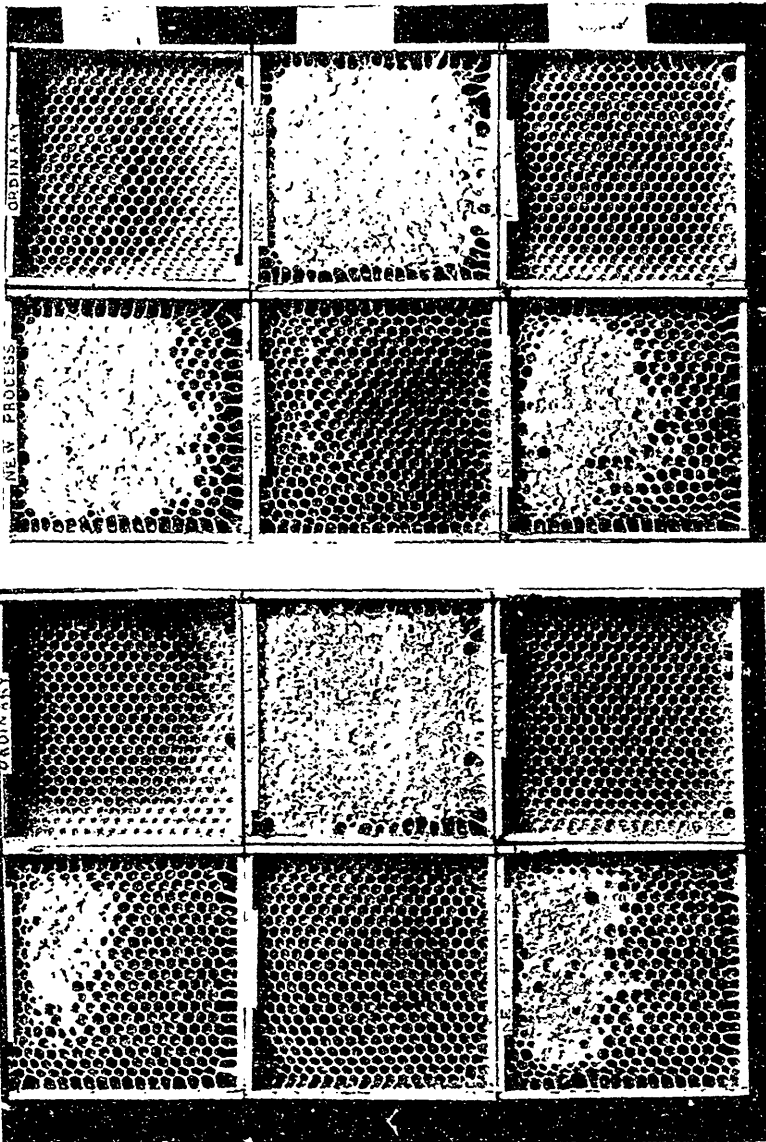


FIG. 4.

Opposite side of Sections as shown in Fig. 3.

Line "A," Sections 1 and 3, New Process.

Line "B," Sections 2 and 4, New Process.

Line "C," Sections 1 and 3, New Process.

himself the manufacturer and a believer in it. He like myself was interested in the matter and wished that an impartial test might be made asking me to conduct it. The foundation furnished by him was very fine indeed. I considered it as being about the best I had ever seen, well made, good coloured and ran about twenty sheets to the pound. I examined the super two days after and found that the bees had taken well to the "new process" drawing it out nicely, while they had scarcely touched the old. I was somewhat surprised at this, as it was not altogether what I expected to find. On the day following, the 27th, I again examined them, the bees had continued to draw the new process ahead of the old. Two days afterwards I removed the super and had the accompanying cuts taken of it, they will explain themselves.

Fig. 1 shows the super as placed on the hive and the relative positions of the foundations.

Fig. 2 shows the sections as left by the bees when I removed them on June 27th. You will note that the cut shows the sections occupying the same positions to one another as in the super.

To carry my experiment still further and lest there should be anything in the surrounding conditions to make the difference, I replaced the super by another filled with sections and full sheets of both kinds of foundation as before, only using a heavier grade of the "new process," about twenty-six sheets to the pound. This super I left on the hive until the honey flow ceased.

Fig. 3 and 4 show results. In this case I did not think it necessary to show super in full so I have given cut of both sides of twelve sections as left by the bees, four from each side and four from the centre of super. You will notice that in each case the bees have taken to the new process in preference to the old and followed the same until completion. I intend taking the super and section with me to Toronto Exhibition, where any of the friends can see for themselves. Will reserve them also for our Winter Convention at Brantford to give our worthy "Senators" an opportunity of examining and discussing the value of the experiment.

Cainsville Ont. JAMES H. SHAVER.

Petrolia, August 9th, 1899.

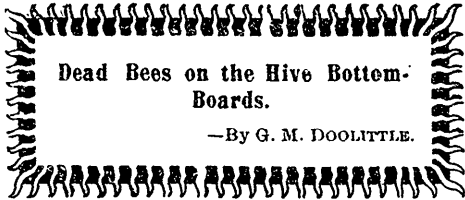
I am well pleased with the queens sent.

E. JULIAN.

Preparing and Moving Bees on a Wagon.

—B. J. SLEASE, American Bee Journal.

The best time is immediately before the working or breeding season, in the latter part of the winter or early spring. Leave the hives just as the bees sealed them down for winter. A strip of stiff spring burlap (the opener the better) two inches wider and two inches longer than the hive entrance, doubled in at the ends and pushed into it with a thin knife-blade, placed on the centre line, so that it goes in double, with a small wire nail in each end, is all the closing they need for either a long or short haul on smooth roads. On rough roads a good cord or wire tied tightly around each hive will answer, and on very rough roads a cleat should be nailed on each corner of the hive, long enough to nail to both cover and bottom, where bottoms are loose. To prepare the wagon, take the bed off and couple it 12 feet long for plank 16 feet long, or 16 feet long for plank 20 feet. Floor the wagon with 2-inch plank if the road is reasonably good; if rough lay a 2x4 crosswise on each end of plank floor—one behind the front wheels and another in front of the hind wheels; floor on top with inch boards, and pinspike or bolt the four corners, and you have a platform that you can haul the bees over any road in perfect safety, if you have a good team, and the driver is neither scary nor balky. Choose a good, moonlight night. Close the hives as early as possible, put on as many as you can, and drive through as soon as your team can walk it. Put off the hives and open them at once. Put a board or some obstruction in front of each hive to compel, or rather, induce the bees to locate, and repeat each evening until the bees are moved. I have hauled bees on this plan two hives deep, more than 100 miles. I was on the road four or five days, and passed several miles in which the wheels constantly hopped from one rock to another without touching ground. If the hives are bad, cover down as soon as loaded with a wagon sheet, tarpaulin, or old bed-quilts, to keep as dark as possible.



Dead Bees on the Hive Bottom-Boards.

—By G. M. DOOLITTLE.

Going past a would-be bee-keeper a few days ago, I was called in to see why some of his colonies did not work as strongly as others in the yard. After looking at the entrances of the hives for a moment, noting that some were working strongly while others were doing but little, I asked if the hives had been opened to see what was the trouble.

"No," was the reply I received. I knew this man kept sheep and so I said, "How are your sheep getting on this spring?"

"Oh, first rate," was the reply.

"How do you know the sheep are doing well?" I asked.

"Why, how does any one know anything? I have foddered the sheep three times a day all the winter and spring, and been with them lots beside, even getting up many times cold nights to look after the newly-born lambs, that they need not become chilled and die. And being thus familiar with them, why should I not know when they are prospering?"

"Very well," I said. "How many times have you 'foddered' the bees this spring?"

"Not once," was the reply. "Didn't suppose they needed foddering."

"Have you been up any during cold nights to see that the newly-born bees did not chill, or paid any attention to the hives to see that the bees were made as comfortable as possible, either night or day?"

"No, I had to look after the sheep so much that I had no time left; nor did I suppose that bees needed caring for like sheep; and I am sure that it would not pay me to spend time on them as I do on the sheep."

"How many sheep had you last year?"

"About 60."

"How much did you receive from them for all your work, foddering feed, etc., expended on them during 1898?"

"According to my book, not far from

\$325.

"A pretty good showing, but when I tell you that last year from 30 colonies of bees at my out-apiary I sold comb honey

to the amount of \$348.23 you will see that the proper amount of time spent on the bees pays fully double per colony that that you get from a sheep, with only a tithe of the work you spent, and that also without any cost for 'fodder.' But let's look into this colony of bees which did not seem to be flying much."

I had noticed that where the bees were flying the strongest there was quite a number of dead bees out on the ground about the entrance to the hives, but with those not flying as strong there were less dead bees, and what there were showed by their looks that they had been hauled out during the winter. I had also noted that his hives had loose bottom-boards, from some empty ones which were piled up, so stepping to the hive designated I laid a bottom board down beside it and lifted it over from its own stand to the one I had put down. By thus doing I exposed almost a sickening sight from the dead bees that were under the hive, all mouldy in places, and in others all wet and fairly rotten, with worms crawling and working among the rotting bees, while the stench was horrid when this putrefying mass was distributed.

Looking up at the man, I said, "How do you suppose that your sheep and lambs would thrive if you neglected them as shamefully as you have these bees?"

"Not much, I guess," he said, his face showing shame and confusion.

I now set the hive back again, keeping under it the dry, clean bottom-board I had set it on and proceeded to open the hive. There was brood in three combs to the amount of one frame full, with only about bees enough to help cover the brood, which showed that the little colony was doing its level best under such adverse circumstances, for between many of the combs either side of where the brood was, the dead bees came well up between the combs. I looked at two other hives, finding them in somewhat similar shape, though none quite so bad as the first, fixing those looked at in good shape by seeing that they had at least 10 pounds of honey, the combs free from dead bees where such were matted together, and the top of the hive made snug and warm, telling him to go through the rest in a similar way.

When I continued on my way I asked myself, "Is it any wonder that so many tell us that bee-keeping does not pay?" I have often wondered that the idea has so fully obtained with nine out of ten of those who start in bee-keeping, that all

they have to do is to get some bees, by finding a swarm or buying a few colonies, and provide a place for them to stand, after which a profit will accrue to them by hiving swarms and putting on and taking off sections. And when profit does not accrue, and their bees die from neglect, we are sure to be told, "Bees do not pay." Yet these very persons will work faithfully, year in and year out, caring for, feeding, grooming, etc., their hogs, sheep, cows, and horses, when a much less amount of labor, wisely directed, spent on the bees, would yield a greater profit.

And the most wise of all wisely-directed labor, which can be spent on the bees, is to see that the dead bees are removed from the bottom-boards of the hives in the early spring of the year. With movable bottom boards this is very easily done by putting a clean bottom-board on the stand and setting the hive on it, after which the dead bees are swept off from the one which was under the hive all winter, the board being cleansed with water if needed, when it is ready to be put on the stand of the next to set that hive on. And where the bottom-board is not only movable, but reversible, the work is still more simplified, for in turning the deep side down, which was up during the winter, the dead bees mainly fall off, and what adhere can do no harm as they are under out of the way, and will fall off themselves before you wish to use the deep side again for the next winter. But with hives having the bottom-boards nailed fast, the work is greater, but even then it should never be neglected. A clean hive should be placed on the stand, and the frames from the hive in which the bees have wintered be set over into this clean hive, when the now vacated hive should be thoroughly cleaned of all dead bees, dirt and filth, when it is ready for the next colony, and so on throughout the apiary.

In all the work done in the apiary, I doubt whether there is any that pays as well as the removing of the dead bees from the bottoms of the hive, for bees can prosper little better with a lot of their dead companions underneath their brood-nest than could we with several corpses in the cellar under our dwellings.—Progressive Bee-Keeper.

Osceola, August 10th, 1899

All supplies purchased from you this year have been very satisfactory as regards price and quality. A. A. FERRIER.

Australian Honey Exports

—The Export Board

A meeting of bee-keepers took place at the Technological Museum, Sydney, on Tuesday evening, April 4th, in order to hear Mr. James Stephenson, Secretary of the Board of Exports, speak on the matter of honey exportation. Owing to a heavy storm raging at the time, the attendance was not as large as could have been wished. Mr. Gale occupied the chair and opened the proceedings with apologies from several bee-keepers who were unable to be present. He said during the last thirty years France and Germany had gone back in their honey production, Bavaria had gone ahead, having now 355 bee-keepers' associations. If the European countries were falling off in their supply he thought the demand had not fallen off. New South Wales, in 1894, sent home 13,241 lbs of honey; in 1895, 12,504 lbs; in 1896 it went down to 3,640 lbs. The import of honey into Great Britain had fallen of considerably. Honey of late was largely used for manufacturing purposes, and he thought the inferior grades would also find a market. In fact they were used for wine making. Mr. Stephenson said the gentleman here had come to talk business—how to get a market, and the best way to go about it. Bad honey had been supplied to the British market that had killed it. We had now to start and make a market over again. They did not want to send home their worst but their very best honey, as they wanted to get the British table market, and so must have one special grade that is up to table purposes. He suggested they appoint their own committee of exports, the Government to charge a very small sum for grading, for which purposes suitable tanks would be erected and used. The Government did not intend to interfere with commercial relations, but to assist. There would be first grade, a blend of the best honeys, a separate Lucerne blend, a second class grade. Any grade outside the latter should not be encouraged. They could not depend upon samples. There would be 99 good bee-keepers, and perhaps one dishonest man, so it was necessary to open and sample every tin. In Canada bee-keepers

were prepared to receive £16 per ton spot cash at the apiary for their honey, and it would be necessary for Australian bee-keepers to accept the ruling rates in the markets of the world if they intend to persevere with the export business.

Of the total imported by Great Britain, New South Wales honey was represented by 426 cwt., the average price being 23s. 61. per cwt. The Government would help the export business with any necessary plant and the advice of an expert.

It was further explained that already the Board of exports had samples of 150 to 180 tons of honey awaiting shipment, if it passed the examination of the expert.

Discussion then ensued on the published regulations, in which Messrs. J. E. Paylor, Packham, G. Pender, Smith, and E. Tupper took part, some slight amendments being made:—(1) All honey for export shall be received at a store in Sydney, in owner's packages. (2) It shall then be graded into three classes by an expert or committee of experts. (3) Each class shall then be bulked, strained if necessary and drawn off into specially made tins of 28 lbs each, four of which shall be packed into a case. These cases shall be branded with the export stamp of the Board of Exports, and a letter or figure denoting the grade. (4) All charges incurred in preparing and packing shall be deducted from the advance made by the agents, and such charges will be made as low as possible. (5) The experts shall rigidly reject any samples which in character, color or flavor, shall be deemed to be inferior or likely to prejudice the sale of the honey in Britain, and no claim for loss or damage in respect to any samples so rejected shall be entertained. (6) All rejected consignments shall at once be removed from the store, failing which it shall be sold by public auction on owner's account, and at his sole risk and expense. (7) A receive note shall be handled to each owner, denoting the quality and grade of his consignment and in case of different prices being obtained for any portion of the same grade, a general average will be struck, on which payment will be made."

The regulations having been adopted, Mr. Stevenson said he wanted to know if the bee-keepers were prepared to take the matter up at once, and to what extent they were prepared to go. It was no use the Government going to the expense of providing, practically, a factory for this work of exporting, if the producers had not the material to keep it going.

It was decided that the Board of Ex-

port should, under the auspices of the Bee-Keeper's Association, send a circular around to all honey producers, asking them to state what amount they would supply from their present stock for their first shipment.

[We find the above in the Australian Bee Bulletin, the extract will give us an idea of what Australian bee-keepers are trying to do, also some of the things the government is trying to do for bee-keepers in that country. Had Australia the natural advantages that Canada has for producing first class honey, she would be a way ahead of what she is to-day. Australian bee-keepers have the enterprise necessary to development and success, and more fortunate than we are, they appear to have at the head of public affairs the men who are willing to give this branch of agriculture the encouragement it deserves. In Australia, as far as we can judge from their literature, etc., their ideas are more along the line of the British Bee-keepers' Association, the greatest good to the greatest number. We have very pleasant recollections of a visit Mr. Pender paid us this spring. He made only a very short stay in Canada, and although we mentioned several bee-keepers he could visit with profit, we believe Brantford was the only place in Canada he visited. We wish conditions had been such that his stay could have been longer. Mr. Pender gave some remarkable yields in honey and could a market be secured, bee keeping there should pay well. There is one other statement we wish to draw attention to and correct. It is, "In Canada bee farmers were prepared to receive £16 per ton spot cash at the apiary for their honey," As in Australia they have English coin, we expect they have English tons, 2,240 lbs. this would make the honey less than 3½c. per lb. or even at 2,000 lbs. very little over 3½c. per lb. Such a statement is quite misleading, 6cts per lb. is more like it.

The honey season of '99 is a thing of the past in our locality, so I will tell you how much honey I took. I started in the spring with 95 colonies and have secured 2000 lbs of extracted, and 1600 of comb honey, which I consider a small yield for so many colonies. The extremely dry weather in this section cut the white clover very short, so I think bee-keepers need not sacrifice their honey by selling at low prices. WM. COLMAN.

Birr. July 21st, 1899.

LINWOOD.

—FROM A. BOOMER.

The closing of the season here has been a veritable surprise. On the first of June after deducting winter losses and doubling up the weak colonies, my count was 97, many of which were still very weak, to strengthen which I used up the brood of several colonies that had cast a swarm. The clover in June was plentiful, but weather, especially at nights, decidedly too cool for the secretion of nectar, and when the Linden season opened, two-thirds of my colonies had not made any surplus, but now built up very well, from only a few could any be extracted. Linden opened on the 7th of July, the 8th was rainy, and the 9th too cold, on the tenth however, the weather warmed up and assumed more settled shape, and the busy workers went at it with a rush, the flow from this source continued until the 24th or 25th. And now that extracting is about over I find that the result is about 11,000 lbs of extracted and about 500 lbs of comb, or about 120 lbs per colony and an increase of over 40 colonies, all of which seem to be in fairly good shape for winter, some, of course, later on may require feeding or the addition of a fall comb or two, which I have reserved for that purpose. The closing up of the season's work is therefore a great surprise, not only to myself, but to others engaged in the business, as from enquiries made and information received, I find that it about doubles the returns of other bee-keepers in this section of the country where the pasturage was the same, in fact some tell me that their returns will not reach 35 lbs per colony. I think it is not too much to say that I attribute my success largely to management, it certainly cannot be in the pasturage for it was equally good for many miles around. And I wish to say that for the spring management, I am indebted to the very excellent paper submitted to our last Ontario Bee-Keepers' Convention by Mr. H. G. Sibbald of Cooksville, and for the Summer Management to an article in one of the May numbers of the A. B. J., by one of the "Dadants." Swarming, under the Dadants instructions, was kept well in check, and never more than one at a time, which latter fact was of course a purely natural one. I do not practice clipping

the queen's wings and lost no swarms, but was enriched by one or more truant swarms, dropping in to join the already great army of busy workers. My bees from some cause or other were very cross during June and the first half of July, but since the honey flow ceased they have become much quieter, and extracting has been a pleasure instead of a terror as before.

Vershoyle, Aug. 14, '99.

Messrs. Gould, Shapley & Muir, Co.,
Brantford, Ont.

GENTLEMEN,—I have read with interest the account of your apiary experiment in the O. A. C. report for 1893, especially that relating to out-door wintering. Will you kindly tell me what success you had last winter in wintering four colonies packed together on one stand? Did the severe spell in February affect them greatly? You say "The outer cases were removed just before the supers had to be placed on the hive." So you must at least remove the top packing long before the time named. Is there not some difficulty in manipulating frames, etc., with the tops a foot below the top of the packing box? What about the closeness of the hives to each other while they are in the box? And do you use the platform or bottom on which they rest as a summer stand? Do you make it any larger than the box?

Yours respectfully,
M. H. PHILLIPS.

Brantford, Aug. 17, '99.

M. H. Phillips, Esq., Verschoyle, Ont.

DEAR SIR,—Replying to your letter of the 14th, would say that weak colonies suffer considerably during extremely cold weather; in fact if you have a first class cellar for wintering, we would advise you to stick to it. We do not remove top packing until the bees require more room, when they are taken out of the cases. We find that with ample packing and plenty of stores, the more the bees are left alone the better. We do not use the bottom of the box for a hive stand, but set away box, packing and all, until next summer. We have found no injurious results from having an inch of packing only between the hives. Yours truly,

Gould, Shapley & Muir Co.

Special Notice.

Those who have been addressing correspondence to R. F. Holtermann in connection with the Canadian Bee Journal and in connection with bee-keeper's supplies and honey business should in future send to the Goold, Shapley & Muir Co., Limited, Brantford, Canada direct.

The Editor C. B. J.

Dear Sir.—The hay and grain crops in this county are good and put in the barns in a good condition, but the honey crop is almost a total failure. The clover was badly winter killed, some places there was none, there was a little in the range of my bees. The basswood promised good, trees being full of bloom, but the season went off and no honey from it, too much north winds. I never saw anything like it, there is plenty of buckwheat sown in this place, but we have a drought on here, that is drying it up and the bees are not storing any honey from it. There is no comb honey in this section of the country and very little extracted, and what little there is, is of a poor quality, those that put sections had to take them off empty. We had plenty of rain here in the first part of the season which brought on the crops, but we are having a protracted drought now, no prospects of a fall crop of honey. I took off just one ton clover honey of a very good quality, from 110 colonies, no swarms, 18 lbs per colony. I have two tons of first-class clover honey kept over from last year. I am the only bee-keeper that I know of here, having any old honey. I think there will be a great many bee keepers in this section who will have to feed for winter.

A. BRIDGE.

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