Spring Management of Bees

The A. I. Root Co.
Medina, Ohio
1907

The Bee-keepers' Ten-cent Library. No. 12.

Bee-keepers' Calendar

From Langstroth

SPRING.—Keep hives warm, give plenty of room, help weak colonies, look out for robbers, remove surplus comb, prepare for queen-breeding and for honey harvest.

SUMMER.—Watch for swarms, and make division if increase is needed. Give sufficient storage room. Give additional ventilation if needed. When the honey crop is over remove the surplus.

FALL.—Look out for robbers, and for moths in unoccupied combs. See that all hives have sufficient stores for winter. Unite worthless colonies to others.

WINTER.—For out of doors pack absorbents in upper story, removing air-tight quilts. Shelter hives as much as possible from winds. Leave the bees quiet in cold weather, and see that they have a flight in warm weather. Do not be confident of safe wintering till March is over. Then proportionate the room to the strength of the colony. For cellar wintering, take the bees in after a warm day and leave them quiet in the dark, with an even temperature; take them out on a warm day, and decrease the brood-chamber to suit the strength of the colonies.

Bee-keepers' Axioms

From Langstroth

A man who knows "all about bees," and does not believe that any thing more can be gained by reading bee-journals, new bee-books, etc., will soon be far behind the age. Yet as what is written in the journals and books (ours included) is not always correct, every bee-keeper should try to sift the grain from the chaff.

In the districts where forage is abundant for only a short period, the largest yield of honey will be secured by a very moderate increase of colonies.

A moderate increase of colonies in any one season will, in the long run, prove to be the easiest, safest, and cheapest mode of managing bees.

The formation of new colonies should ordinarily be confined to the season when bees are accumulating honey; and if this, or any other operation, must be performed when forage is scarce, the greatest precaution should be used to prevent robbing.

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Usually in the North the bees come through their long winter sleep greatly reduced in numbers—so much so that the bee-keeper is very much inclined to jump to the conclusion there is not a sufficient number left to form a thrifty colony, and he is strongly disposed to double up or combine two colonies in one, thinking, perhaps, to have one good strong colony rather than two weak ones. But the veterans know this does not help matters very much, because one queen cannot lay as many eggs as two queens, and that it is on the vitality and virility of the queens that the matter finally rests, and not on the number of bees present; so he proceeds to stimulate egg-production by all known means. It ought to be borne in mind that success in spring management depends on the young bees raised, and not at all on the bees which have passed the winter. Bees which have passed through a long winter are like old men of 70, who may be vigorous, but their race is nearly run, no matter what may be done for them. The secret, then, of successful "springing" of an apiary is to get a force of young bees to care for the queen as soon as possible.

Spring management of bees really commences the previous year, because there is little hope of great success unless the queen is young and virile; hence it is that the precaution should have been taken the previous summer to supply every colony with a young queen. Such a mother surrounded with a mere handful of bees generally succeeds in building up the strength of the colony in time for the honey-flow. Old queens, on the other hand, are slow to respond to the balmy airs of spring, and are too long in getting ready for the campaign.

Poultry men know that success in egg-production is dependent on the use of pullets that lay more eggs,

and lay earlier, than hens. It is very much the same in bee-management; and some bee-keepers supply a young queen to every hive each year, just at the commencement of the honey-flow, knowing she will lay eggs rather than swarm, besides wintering well and coming through the spring without faltering in her work of laying eggs. Some old queens are good enough, but are too slow in getting to laying in the spring. Others on the other hand, with care will bring their colonies up to the point of securing a crop of honey from fruit-bloom.

Spring dwindling is the bane of northern bee-keepers; but it is practically impossible to find any remedy for it except to remove the bees to the far South, because bees are short-lived creatures at best. It is generally thought now that the life of a bee when it has reached the age at which it may fly abroad in search of nectar does not exceed a month at best. When, therefore, a cluster of bees passes through a winter of three months duration it will be readily perceived they have not much longer to live.

During the winter large numbers die, not because of the cold, but of real old age. Their time has come to die, and there is no help for it. The true solution, then, of the spring-dwindling trouble is the conservation of the old bees long enough only to provide for the rearing of a new generation of bees to take their place.

It ought to be noted, also, that the best bees for wintering purposes are those which have done little or no work in the work of gathering stores; for it is probable that bees which have done work before winter comes do not last very long when springtime comes again.

With a young queen supported by young bees, the problems of spring management become quite simple. Occasionally the winters are such that the bees breed more or less all winter, and bright days now and then give them an opportunity to fly, which keeps them in health. Under such circumstances the work of the bee-keeper is simplified, for all he has to do in this

case is to see that the bees are well supplied with food. Nature does the rest.

When, however, the bees seem to be suffering too much from spring dwindling, pains ought to be taken to have the hives reduced in size to the smallest proportions necessary to maintain the colonies. A small colony in a big hive seems to get discouraged; or, perhaps, it is because it can not keep the warmth; but in any case it will readily respond to the attention of the bee-keeper if he will contract the size of the hive (by dummies), supply feed, and cover the hive with old carpeting to keep off the chilly winds.

To raise brood successfully, the bees must be snug and warm. Some have thought that by supplying artificial heat, the bees would be helped, and they would do better; but all such efforts are failures because, on some days, the field bees venture out when they ought to remain inside.

In Europe, more particularly in Germany and Austria, special feeds composed of sugar, pea flour, and white of egg are used to stimulate breeding in spring, and also to ease the work of bees in caring for the brood. We in this country have never tried these foods to any extent, though the idea underlying their use is a good one.

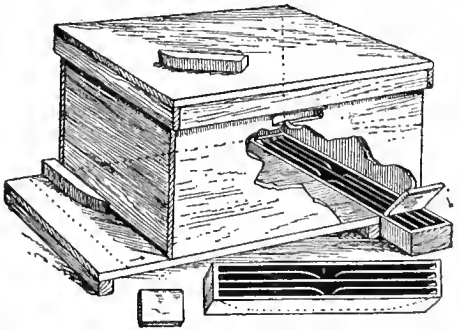
In some parts of this country, where fruit-growing is popular, it would be possible some seasons to get a crop of honey from fruit-blossoms if the bees could be got ready in time for the work. Stimulative food of this kind ought to induce brood-rearing to the utmost limit; and with double-walled hives to conserve the natural heat of the colony it ought to prove successful and profitable. We require more experiments with these foods to enable us to say just what can be accomplished by their use. Theoretically they seem correct, but practice is the best criterion.

Careful feeding with syrup made from sugar has been found excellent, and some provide a substitute for pollen. Probably the bees could find all the pollen they require by going afar for it, but we do not wish them to go very far from their hive during the chilly

A Protection of Roofing-paper.

days of spring, and it is better to keep them at home by means of boxes of rye or pea flour put out in protected places where they can get artificial pollen without trouble. To induce them to accept this, some place a few pieces of comb containing honey on the top of the flour, and in this way they get accustomed to its use. Pollen, enters largely into the food of young bees in the larval state, so it constitutes a good stimulus to breeding. The bees who feed the queen must also have feed of this kind, for the clyme they pass to the queen is certainly very nutritious, and something of a highly nutritive value must be consumed by the bees to supply it. In Europe, pea or lentil flour is recommended, and we know this is far ahead of rye flour in nitrogen. The flour or meal should always be placed out of doors under some sort of cover to protect it from wind and rain.

As to the sugar syrup, nearly all bee-keepers know how to make it. For this purpose, equal quantities of sugar and water make a fine feed for bees. It may be made with cold water; but for spring work it is better made hot and fed lukewarm. The bees like the odor of the warm syrup, and are more inclined to eat it.



HIVE WITH ALEXANDER FEEDER.

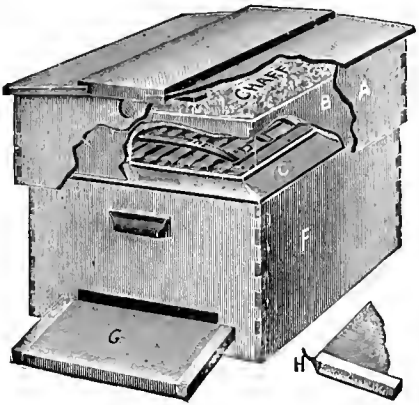
The feed should be furnished in a manner least likely to disturb the bees. The Alexander feeder

answers very well, because there is no necessity of opening up the hive and exposing the bees to the air. By feeding the bees in the afternoon or evening, the dangers of robbing are avoided, for the reason the feed is disposed of over night, and the odor of the syrup has disappeared by morning. For the bees to attempt to rob one another at such a time is bad, and disastrous in many cases, because the colonies attacked are not able to put up a fight. Frequently the slightest reverse makes them feel discouraged, so it is wise to reduce the entrance of each hive to very narrow limits. Sometimes, also, cool winds annoy the bees, so that a windbreak is very acceptable, and a sheltered nook is best for an apiary. Bees are very sensitive creatures, and appreciate all little kindly efforts in their behalf.

Some practice what is known as "spreading brood." As the phrase indicates, the brood-nest is divided and a frame of empty comb or foundation is put in the space made. Sometimes a comb from the center of the brood-nest and one just outside and next to it are made to exchange places. In either case a sort of vacuum is created in the center of the brood sphere which vacuum the queen and the bees both proceed at once to fill with eggs and brood. Under skillful and intelligent management when the weather is not cold it pays at times to spread the brood, for by so doing more bees will be raised; but in the great majority of cases, especially with beginners, the practice checks rather than stimulates the progress of the colony. A frame of eggs and brood placed just outside of the brood sphere is liable to become chilled for the want of bees to properly cover it. An empty comb placed in the center of this brood sphere in a sense for the time being divides the one cluster into two, neither of which can carry on the affairs of the colony as well as when the two of them are together in one solid intregal mass. The old saying "united we stand, divided we fall" applies somewhat right here. As a general thing a colony of bees unmolested will do their own "spreading" as fast as it is feasible and safe. Very young brood should be thoroughly protected

by a wall of bees on each side of it for if the animal heat drops down even a few degrees the brood either dies or if it hatches results in stunted or short lived bees; but during warm weather and in the tropics, the experienced bee-keeper may somewhat hasten the progress of a colony by spreading the brood, but he should proceed very cautiously and only one frame at a time. If the nights are inclined to be at all chilly the hives should be well protected. In no case should there be cracks or air gaps to let in chilling breezes. No hive under any circumstances, in fact, should have such air currents except during the very hottest weather and that only for a very short time.

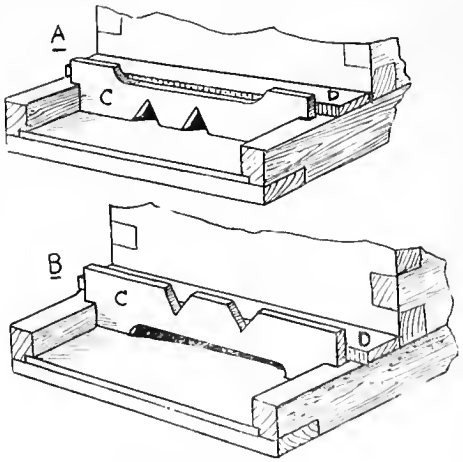
Probably the weakest point in American bee management is the want of protection for the hives. Many use single-walled hives, which they take out of the



CHAFF HIVE

cellar where they have wintered, and set them on their summer stand without the slightest protection from the chilly winds of spring. They simply rake out the dead bees from the bottom-board, which have

accumulated during the winter, and leave them to their fate. In such a condition the bees act in a very discouraged manner, as if life were not worth living, and queens die in the most unexpected manner. In the first place, the hive is, as a rule, too large for a small force of bees to keep warm and clean; and if exposed to the full sweep of the chilly airs of spring it is practically impossible for breeding to go on



HIVE WITH SMALL ENTRANCE.

except in a limited manner in the center of the cluster. Much may be done to enable them to keep warm and comfortable by shielding from the prevailing winds.

The inside temperature of the hive should be only a few degrees less than that of an egg incubator; hence one can readily see the necessity for protection of some sort, because the bees alone have to keep the hive warm by their own natural heat, which they can do by consuming considerable quantities of honey. In

addition to this they have to supply a vast number of young bees with very rich chyle food which they elaborate in their stomachs for the purpose. They serve the same food to the queen. Hence it is that successful spring management very largely depends on warmth and food.

Just as soon as the hive is examined after the winter's sleep, it is carefully covered up if the queen seems healthy and well, and there is a sufficiency of food on hand. If not, syrup may be given by means of two division-board feeders placed on either side of the cluster of bees; and if the queen is absent one may be supplied by means of a cage which automatically releases her in a couple of days; and for this purpose it is well to have a few young queens from the South on hand in early spring.

It is bad policy to be opening the hives frequently in springtime, and as a rule one need not do it. One thorough examination as soon as the winter is over ought to be enough. After that is done, opening the hive merely to see how the bees are geting along does no good and may do considerable harm.

One can infuse a good deal of life into a colony by feeding it a portion of good lukewarm syrup the first warm evening after winter is over. This seems to be the policy of Mr. Alexander, the justly famous bee-keeper of New York; and it is that of many others who are not so well known to apicultural readers.

In feeding during the spring, great care ought to be exercised lest the bees commence the robbing habit; for artificial feeding seems to excite the stealing instinct, and therefore the entrances must be reduced to very small dimensions, and care taken to see that outside bees can not secure the slightest taste of feed. Any feed accidentally spilled ought to be wiped up at once, and no feeder should be left open by forgetfulness, for, if so, the bees get the most debased habits and soon learn to rob and kill one another.

Only one disease need be here considered—that is to say, if one may term it a disease—namely, dysentery.

This disease is not well named, and catarrh of the stomach would be more appropriate. It is probably the result of excessive cold on the intestines of the bee during winter. Unsuitable food may have the same result, and a combination of the two will probably produce an aggravated case of "dysentery," so that the remedy is obvious enough.

Bees afflicted with what we term dysentery exhibit the effects of strong purging of the intestines, depositing the fecal matter whereever and whenever they alight to rest themselves. Needless to say, they do not live very long when once attacked by this trouble. This illness is something apart from the voiding of their excrement, which characterizes bees when they emerge into daylight after their long confinement.

One may bring on dysentery by feeding bad food, that irritates the intestinal canal during winter. Fruit juices, sorgum syrup, burnt sugar, etc., produce dysentery unless the weather happens to be warm and pleasant, enough to allow the bees an opportunity to rid themselves of the offensive fecal matter.

Honey-dew, or aphides honey, is credited with producing dysentery simply because it is inferior to honey as a food; that is to say, most of it, for some honey-dew is very good indeed.

Pine-tree honey comes under the head of deterious food for bees, probably because it contains resinous gums which they seem unable to digest. Glucose, the poorest food of all would also come under this head because it contains dextrine. But none of these substances cause trouble except during cold weather.

Dampness in connection with cold seems to aggravate dysentery greatly, and we know bees succeed in wintering very well in Colorado, Utah and Nevada out of doors where it is very cold, and they do not suffer as much from dysentery.

As soon as the warm pleasant weather comes, the trouble entirely disappears; and by attending to the creature comforts of the bees the disease may be entirely overcome. Dysentery may, therefore, be considered as the net result of poor treatment. It is not

necessary to remove the bad food from the hive, which may be overcome by feeding syrup made from good cane sugar; and if the weather happens to become balmy and pleasant, the trouble disappears as if by magic.

If the spring happens to be cold and rainy one may be certain that feeding is in order; and if only a little is fed every day this is a great inducement for the queen to lay eggs, weather or no weather. The bad weather will go away, and the colony which has been carefully nursed will leap to the front in a manner which will seem surprising to its owner.

Bees are like certain individuals—they easily get discouraged by poor treatment, and just as easily do they get encouraged by good treatment. Perhaps the golden rule would be the best rule to apply to bees in their spring management.

This booklet would be incomplete without some reference to the methods of Mr. E. W. Alexander, of New York, who has a plan of caring for weak colonies which is unique. In the March 15th number of *Gleanings in Bee Culture,* 1906, he gives his plan as follows:

HOW TO GET BROOD FROM TWO QUEENS IN ONE HIVE.

Next the rearing of early queens is very important; also early drones. This is something we must not neglect. This part of our business has been made very easy and plain by such men as Pratt, and I will pass it for the present. But here is one thing I must describe to you all, and that is the proper and best way to care for our little weak colonies after taking them from their winter quarters. It is this: As soon as they have some uncapped brood in their hives, take them to a good strong colony; remove its cover and put a queen-excluder in its place, then set the weak one on top of the excluder and close up all entrances to the weak colony, except what they have through the excluder, down into the strong colony below. Leave them in this way together four or five weeks; then separate them and you will have two good colonies and will have saved yourself all worry about these weak colonies being robbed, chilled, or starved. When we are feeding the other colonies we usually give these a few spoonfuls of the warm syrup in a comb next their brood. This encourages them; and if there is not more than a cupful of bees they don't get much from the feeder under the strong colony. I have explained at bee conventions this way of saving these little

colonies, and have received very complimentary letters afterward from prominent bee-keepers, saying that this idea was worth more than $100 to them.

This is something we have been practicing for more than twenty years. Some seasons we have a large number of weak colonies on top of strong ones during early spring, and we don't lose five per cent of them. I am sure it goes a long way toward preventing spring dwindling. I will quote what my friend J. A. Pearce, of Grand Rapids, Mich., says in the April *Review*, 1905, on this subject: "In regard to putting light swarms on top of heavy ones in the spring, I believe it is a great thing; in fact, I look upon it as one of the best things brought to light in modern bee-keeping. Last spring I had 16 swarms marked heavy, and just 16 marked light—in fact, so light that I almost despaired of getting them up to the honey harvest by any process; but when that article by Mr. Alexander came out in the April *Review*, telling us how to save weak colonies by setting them on top of strong ones, I concluded it would work, so I placed the whole 16 weak swarms on top of the 16 strong ones. I examined them some three weeks afterward, and such a change I never saw. Those weak swarms had built us so they were as strong as if not stronger than the ones below, and had more honey because of the tendency to store above. I could scarcely believe that such results were possible. Then, again, instead of detracting in any way from the strong swarm below, it really seemed to be the reverse, as though they had been stimulated by it to greater activity. Having the two queens depositing eggs instead of only one, the bees went out with a rush on all occasions when they could get out. It also proved another thing, which is that the upper queen is all right, only she was handicapped for want of bees and warmth; and as soon as these conditions were supplied she proved herself to be as prolific as her sister below, instead of being the worthless thing that she had been supposed to be."

I think I have shown you how we can keep our bees warm and comfortable through the sudden changes of early spring; also how we can stimulate them to early breeding by keeping them warm and feeding a little thin syrup every day. This is very important; and how you may save those little weak colonies and have them ready for your early harvest.

Delanson, N. Y.

To this the editor of *Gleanings* replies:

It should, perhaps, be stated at this time that Mr. Alexander will illustrate and describe his special form of feeder in future article. For the present I will simply state that the device in question is a Simplicity trough feeder put under the bottom of the hive, and flush with the back end, the bottom board being shoved forward sufficiently to accommodate it.

I wish to draw attention particularly to Mr. Alexander's method of uniting a weak colony to a strong one, whereby both queens are preserved *and both do duty at once.* In the event that either queen is not quite up to the standard, the two will more than make up for the deficiency. That two queens *can* do duty at once in one colony after uniting, being separated

by a perforated zinc, each in a separate brood-chamber, would have been deemed some years ago impracticable; but if it be true that the bees recognize their queens largely by colony odor, then the two queens in the hive at the same time, so long as they can not get at each other, will be tolerated by the bees because they smell alike. Queen-breeders have been familiar with the fact that two queens can be maintaind in one hive, separated from each other by perforated zinc. Occasionally, however, the queens will fight through one of the perforations, with the result that one will be stung to death by her opponent. In that case, possibly the bees will take a hand in the fracas. But these cases seem to be rare.

When I visited Mr. Alexander last summer he showed me a hundred or so colonies where he had two queens in at the same time. At the time, he had an upper entrance so that the bees in the upper story would not be compelled to go clear down through the upper set of combs. He explained how it was possible, in connection with his feeding, to get a large amount of brood through the agency of two queens, and yet none of that brood would suffer, as would be the case where the weak colony had to depend entirely on its own body heat on its own stand. Yes, here was the evidence or proof of the pudding, right before my eyes. It could not be gainsaid.

We should be glad to have our readers test this method of uniting, and report the results. The suggestion comes right in the nick of time for most northern localities.

Mr. Alexander does not say that the uniting takes place shortly after or at the time of taking the bees out of the cellar. If the bees of the weak colony had been out for two days, and had marked their location, many of them would be lost in returning to the old stand; but the fact that Mr. Alexander speaks of the uniting taking place as soon as they have uncapped brood would indicate that the bees had had a flight or two, and that their weak condition had been discovered after they had been set out.

He will doubtless cover these points more fully in a subsequent article! but for the present, at least, I see no reason why a very weak colony could not be united to a strong one, putting perforated zinc between at the time of taking them out of the cellar. As we have tested this principle of dual queens only in a queen-rearing way in the summer, there may be some practical reason why uniting bees just out of the cellar would not work.

In the November 1st issue of *Gleanings,* by way of reply to critics who had failed to make the plan work with them he added more particulars as follows:

About six or seven days after taking your bees from the winter quarters, pick out and mark all your weak colonies, also your strongest ones, making an equal number of each, then all weak colonies that have a patch of brood in one comb about as large as your hand. Set all such on top of a strong colony with a queen-excluder between, closing up entrances to the weak colony except through the excluder. Then there are those that are very weak that have only a queen, and perhaps not

more than a handful of bees with no brood. Fix these last named in this way:

Go to the strong colony you wish to set them over and get a frame of brood with adhering bees, being sure not to take their queen; then put the queen of the weak colony in this comb with the strange bees and put it into the weak hive; leave them in this way about half a day, then set them on top of a strong colony where you got the brood with a queen-excluder between. Do all this with a little smoke, and avoid exciting the strong colony in any way. If a cool day, and the bees are not flying, I usually leave the strong colony uncovered, except with the excluder, for a few hours before setting on the weak colony. The whole thing should be done as quietly as possible, so that neither colony hardly realizes that it has been touched. When the weak colony has been given some brood, and put on top in this careful and still manner, hardly one queen in a hundred will be lost, and in about 30 days each hive will be crowded with bees and matured brood. Then when you wish to separate them, set the strongest colony on a new stand and give it also some of the bees from the hive that is left on the old stand,, as a few of the working force will return to the old location, especially if they are black bees or degenerate Italians.

In every case that has come to my notice where this method has been reported a failure it has been by one of two causes—either from lack of brood in a weak colony to hold the queen and her few bees in the upper hive, or by smoking the strong colony so that, as soon as the weak one was set on top, the bees from below would rush up and sting every thing above. Therefore avoid using smoke or doing any thing that will excite the strong colony.

If done in a careful manner the bees in the lower hive never seem to realize that any strangers have been put above them, and they will all work in harmony together.

From the many complimentary letters I have received during the past summer I am sure that, when *Gleanings* gave this method to the bee-keeper of the world, it was the means of saving thousands of colonies for its many readers; so, give that paper all credit; and if you will put this method in practice next spring, as I have explained, it will be worth more to you than all you have ever paid out for bee-journals.

It is only necessary to add that some bee-keepers (and a good many of them) build up weak colonies by removing a frame of brood about to hatch, and add the same with the adhering bees to the weak colony.

Ever since the invention of movable-comb hives this plan has been followed; but it is advisable only when the strong colony can bear the loss without inconvenience. It should always be borne in mind that a weak colony with kindly treatment will build up very quickly when fed steadily—that is to say, if the queen is virile and active.