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A RADICAL CURE

FOR THE

Swarming Habit of Bees.

HENRY JONES, M. D.,
PRESTON, MINNESOTA

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By Henry Jones, M. D.

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Swarming Habit of Bees



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A Radical Cure for the Swarming Habit of Bees.

WHY WE KEEP BEES.

The one essential in bee-keeping is results. In this practical age the aim of every progressive bee-keeper is to obtain the greatest results with the least expenditure of time and labor.

While some may engage in apiculture for recreation or a love of the pursuit, without regard to pecuniary returns, the great rank and file are so situated that they of necessity must look at the matter from a dollar and cent point of view. "How to Reduce the Cost of Honey Production to a Minimum," is the goal which they are seeking.

All short cuts in bee-keeping and all plans to abolish unnecessary manipulation are receiving the thoughtful attention of all up-to-date bee-keepers. Much has been accomplished along these lines in the past and yet there is an urgent demand for better and simpler methods than are now employed. Bee-keepers like the rest of humanity often spend a great deal of time and labor to accomplish a very little thing. Needless manipulation has a money value, whether performed by yourself or someone else, and adds to the cost of production. In no subject relating to apiculture does this apply more strongly than it does to the swarming problem. Natural swarming as practiced by our grandfathers, has no place in modern bee-keeping. The methods advocated today are far ahead of natural swarming, yet none of them give entire satisfaction. Numerous and varied are the plans of swarm-control that do not control, system that do not prevent. There is an element of uncertainty and unreliability about each and every method heretofore recommended. Some

of them call for costly hives and fixtures, some for an endless amount of manipulation and some require all the skill of a trained expert to carry them into execution. None are infallible. What the bee-keeping world is watching and waiting for is some better plan—some simple, sure and reliable method that will **prevent swarming at all times and under all circumstances.** Is there, or can there be any management, any process or treatment, that will fulfill these requirements? The answer expected would be “No.” The good old orthodox ways appeal strongly to the great majority of bee-keepers, and it seems a difficult thing for them to cut loose from the old methods that have the sanction of antiquity. The myths, fables and superstitions concerning bees—the heritage of our ancestors—still clings to us with a strange persistency, and nearly every advance in bee-keeping has had to encounter the whims, prejudices and conservatism of the masses. In this day of progress and discovery is it safe to deny anything? Many of the unsolved enigmas of the past are being solved today, and why should the non-swarmling riddle remain without solution. Now, brother and sister bee-keepers, it may cause you some surprise and it may awaken within you some skepticism when I make the bold and broad statement that I can outline a method of treatment that will cure the swarming feature every time and all the time. It will work wherever bees can as it is founded upon an instinct of the bee which is infallible. The treatment will cure the “swarming impulse” if already acquired, or, if given before the bees think of swarming, will prevent swarm preparation. It is either a preventive measure or a curative measure, depending upon the time of giving treatment. It will and absolutely does prevent all swarming at all times and under all circumstances notwithstanding that old legend that “Bees Do Nothing Invariably.”

HOW TO PREVENT SWARMING.

Not wishing to tax your credulity to the breaking point, nor wishing you to think these lines penned in a spirit of egotism, I will desist from any further preliminary statements and outline the plan which I have followed for the four years past.

“Use all the well known methods early in the spring to get the colonies strong in bees before the honey flow is on. Then when the hives are full to overflowing with bees and you have all the force you want, all the bees needed to gather the harvest, go to these mammoth colonies, open the hives, and with the uncapping knife or some other sharp instrument, uncap all the sealed brood you find except two frames of the sealed brood in each hive, which you leave undisturbed. The two frames of hatching brood will keep up the strength of the colony during the honey flow. Any time within fifteen days give a second treatment, the same as the first, if you find any colonies making preparations to swarm. This treatment will prevent all swarming and enable the bee-keeper to keep his whole force of workers together during the honey harvest. The bees at once begin to drag out the headless brood and scatter them far and wide, and in from twelve to twenty-four hours every vestige of brood operated upon will be removed from the hive. The bees will polish up the cells from which they have removed the dead brood and the queen will begin laying in them at once instead of the bees plugging them full of honey as might be expected. The bees start to work at once with all the vim and energy of a prime swarm without any further attempt to swarm out. It is simply wonderful how quickly a hive full of loafers can be transformed into the most energetic workers.”

ADVANTAGES GAINED.

Now let us see what the advantages of this method are as compared with the methods previously published. 1. It starts the bees to work immediately and there will be no loafing, sulking or obsconding of swarms, as so frequently happens with shook swarming or other well known methods of swarm control. 2. It represents the saving of an endless amount of labor as compared with other methods. Five to ten minutes is ample time for the first operation and still less if a second is needed. The bees of that colony are then effectually cured of all swarm preparations for that season. As a time saver it is without a parallel in bee-keeping. Manipulation takes time and has a money value to the bee-keeper. It takes an enormous amount of time to carry out some of the non-swarming systems and when handling colonies by the hundred it takes a large share of the honey croy to pay for the time spent in useless manipulation. 3. The treatment is especially adapted to the comb honey producer's needs, making it as easy to raise comb as extracted honey. The whole of his working force can be kept together throughout the honey flow without any desire to swarm, and every comb honey producer will readily understand what that means. Out yards can be established, and comb honey raised cheaper and with less labor than extracted honey is today with present methods.

"As a rule give the treatment to the comb honey colonies at the time you put on the second super which should be given when the first super is about half or two-thirds full. This is about the time the bees usually make preparations to swarm. The first super should be given about ten days before the honey flow is on. When you have all the bees you want, give them the treatment, paying no attention to whether they are making preparations to swarm or not. In either case they will not swarm.

Give the treatment to all the colonies that are full of bees. Then on the next round notice all colonies that are working energetically and let them severely alone unless they require more super room; and, if so, give it to them. You can rest assured that there are no swarm preparations, no need of making an examination of the brood nest. If any colonies are found loafing, hanging out, or working in a listless, half-hearted way, and have not accomplished much in the supers, open the hive and examine the brood nest as swarm preparations are under way. Give them the second treatment at this juncture, and you will have 'knocked swarming in the head' for the season as far as that colony is concerned. The comb honey producer can feel that he is master of the situation, being able to run his bees and not have his bees run him."

4. It is equally adapted to the producer of extracted honey. While it is true that in raising extracted honey, swarming is more easily controlled if supers are given early and often enough so that there will be an abundance of room at all times and no crowding of brood nest. Swarming can in this way be reduced to a minimum. But in order to carry it into effect the queen must be allowed to roam through the supers at her own inclination. When the brood chamber becomes crowded she establishes a brood nest in the first super and sometimes in the second, and as the honey season advances there will be preparations for swarming in spite of the abundance of room. It is a well known fact that a swarm of bees with a crowded brood nest will swarm even if hived in a barrel or in an attic, as the room outside the brood nest proper cuts no figure. And look at the conditions when the bees are managed by giving them plenty of super room. As soon as the queen moves to the first super the bees will commence plugging the old brood nest full of pollen as fast as the young bees hatch out and you have a worthless lot of

pollen clogged combs on your hands. The brood nest will generally be found empty of honey, requiring the feeding of the bees to supply stores for winter. If an excluder is used the bees will fill up the brood nest with winter stores, the same as when raising comb honey, and are not inclined to store everything above. When extracting frames with young unsealed brood in the extracting room is no place for company. By the cutting out capped brood plan of managing swarming you put a queen excluder over the brood nest and confine the queen below where she belongs.

“When your extracting colony is full to overflowing with bees, open the hive and with your knife cut the heads off all the capped brood except the two frames left to make good the loss of fielders. As a matter of fact give them the same treatment as the comb-honey colony. Give second treatment if any colonies require it. If on your next visit you find the bees going in and out with a rush, pay no attention to it except to give plenty of room in the supers. Examine any that are found clustered out and taking life easy. You will find them preparing to swarm. Repeat the treatment and dismiss all thought of their swarming from your mind. No one would tolerate a brood nest in a second story if it were not that it retards swarming. Certainly a great improvement over the present methods when the queen can be kept below and the supers free from brood and pollen and the matter of increase under perfect control.

5. It does away with all non-swarming hives and devices, all self-hivers, and all swarm controllers that cost money. Besides these are usually unsatisfactory and unreliable. The treatment here outlined does not cost a single penny's investment to carry it out; no extra capital invested to add to the cost of production. Every bee-keeper has or should have a smoker and an uncapping knife as a part of his equipment. 6. There

is no hunting of queens with all its vexations. Neither is there any caging or clipping of queens or need for any extra attention directed toward her. There is no pinching of queen cells as the bees will attend to that better than it can be done by the hand of man. No stacking of brood on other colonies, no bumping of hives around, nor shaking of bees into another hive and compelling them to build a new brood nest during the honey flow. No interruption of the queen's laying right along in the old brood nest. All of these take up valuable time right in the busy season when the rush is on, and even then, after all such fussing, there is no assurance that the bee-keeper has accomplished that which he set out to do. His expectations may be realized and then again they may not.

7. The ease and simplicity of the treatment makes it a boon to the amateur bee-keeper. The man with a few bees on a village lot can give treatment and go on about his business knowing that he has his bees under control. The farmer with a few stands of bees to furnish honey for his own use, can give them the treatment at his leisure feeling confident that he will not be called from his work by that old familiar cry, "The bees are swarming." The professional with his out-yards can raise either comb or extracted honey feeling sure that there will be no absconding of swarms during his absence. And whether he be amateur or specialist, he can care for double the number of colonies and can double the amount of his honey crop with the same amount of labor. The cost of production will be so cheapened that honey will not be considered a luxury. When this plan of treatment becomes generally known, the honey production of the world will be doubled.

8. The treatment will cure the swarming impulse after queen cells are built and capped over, and it will also prevent swarming if applied before the bees have made any preparations to swarm. Therein consists its great superiority over any and all known non-swarm-

ing methods. All other systems require to be carried out before the bees think of swarming. All plans hitherto advocated have been preventative and not curative measures. All authorities agree that their methods are not remedial methods and all admit that they do not know of any such method. The simple fact that it will cause the bees to destroy the queen cells after they are built and prevent their swarming out stamps it as being as far ahead of other methods as an express train is ahead of an ox team. 9. If you desire to re-queen you have on hand a nice lot of choice queen-cells raised under the swarming impulse. No occasion to search for a non-swarming race of bees! no necessity of trying to breed out the swarming instinct, for at all times you have swarm control right under your thumb.

OBJECTIONS ANSWERED.

Again, what are some of the disadvantages of this system? Objections such as these are all of a minus quantity. 1. "Not adapted to the man who keeps his bees in the 'invisible brood chamber hives,' better known in common parlance as the straw skep, the box hive, the log gum and the proverbial nail keg. Neither the bees nor the man can see what is going on within the hives. Yet both the bees and the man seem satisfied. That kind of bee-keeper seems to keep bees for the exercise and excitement he gets out of it chasing swarms, climbing trees and hiving swarms. The heat, sweat and stings makes him think that swarming is the chief end or apiculture. Such a trifle as a honey yield is a minor consideration with him. 2. Cutting off the heads of so much sealed brood may seem a cruel useless "slaughter of the innocents." Admitting, for the sake of argument, that it is, does man hesitate to sterilize and weed out all inferior animals even tho his methods involve pain and even death. All our methods of preparing animal food inflict cruelty and death upon the animal. Again, the brood beheaded, if it had been

left undisturbed would not have hatched out in time to help gather the harvest. They would arrive upon the scene at a time to become consumers and not producers. The unsealed brood, together with the newly laid eggs in the empty cells from which the bees have removed the brood will hatch out in time to assist with the fall flow, if there should be one, and your colonies will go into winter quarters as strong as they would have been if the capped brood had not been destroyed. It seems the only way to knock the swarming impulse out of their head. Taking a few frames of brood away at a time or taking it all away at once and replacing it with empty combs or foundation will not cure the bees' impulse to swarm. Cutting out of the brood will stop all swarming. It seems to require a heroic remedy to put a quietus on the swarming habit.

Instinct teaches the bee that its very existence depends upon a prolific queen and a well regulated and ample brood nest. As long as these conditions are present the colony works on in contentment, but as soon as the brood nest becomes crowded and there is no place for the queen to deposit her eggs, instinct teaches the bee that its existence is imperiled and they become discouraged and swarm out to establish a new home. If the brood nest should sustain an injury in any way nature teaches the bee to repair it at once. These instincts seem to be inborn and a part of the very nature of the bee. It appears reasonable to me that uncapping the brood would have about the same effect upon the bee in regard to its swarming out as we would be affected if we had made preparations for a journey and some giant would come along, tear the roof off from over our heads, destroy our furniture, kill our babies and raise Cain generally. Our desire to travel would be squelched forthwith and we would stay at home the same as the bees do. We might start in at once to repair the damage done to our home or we might give up in despair. Bee nature being built along

different lines at once applies itself to the wreck and starts to repair the damage done its home. The dead are carried out, the cells are cleaned up and the queen has ample room to lay again. Everything in the economy of the hive goes on as before, the bees having no desire to swarm until the brood nest again becomes crowded, when bee nature again asserts itself and they once more begin to make preparations to swarm. But the bee's thoughts are not my thoughts, neither are my thoughts the bee's thoughts, so if I have not interpreted their actions aright you have the privilege of giving a better explanation. One guess is as good as another as long as it cannot be demonstrated to a mathematical certainty. Admitting that bees do freak-things at times, is it not a conceded fact that a colony of bees under normal conditions will not make preparations to swarm as long as the queen has ample room in the brood nest to deposit her eggs. And is it not also an established fact that when the brood nest becomes congested and the queen is restricted in her egg-laying, that then, and not until then, does the swarming instinct assert itself? Examination of a colony prior to swarming when queen cells are under way shows the outside combs full of honey and pollen, the inside combs full of sealed brood, eggs and larva, with honey in top and corners of center frames, the sealed brood predominating in the outer frames of the brood nest proper, and open brood in the center, and nearly every cell in the hive filled with honey, pollen or brood and no room for the queen to lay—an ideal condition to cause the bees to become discontented. Bees thrown into an abnormal condition will often swarm out; starvation swarms, colonies infested with worms and with their combs a mass of web, shaken swarms that have been bumped and banked and shaken out and compelled to establish themselves in a new home, thinking their condition could not be worse, in their discouragement swarm and light out for pastures

new. The condition of the brood nest cuts no figure with them, but be it remembered that they have been thrown into an abnormal condition, and the vagaries of been nature under abnormal conditions is past comprehension. Given all other conditions that lead to swarming minus a crowded brood nest and there is no swarming. Natural swarming, shook swarming, caging the queen all have as their underlying principle and do directly or indirectly relieve the congested condition of the brood nest. The Aspinwall non-swarming hive has as its leading feature the prevention of swarming by breaking up the solid brood nest. That is the one feature common to all methods of swarm control. It resolves itself into what is the simplest, surest and safest method of accomplishing this end. As an easy, sure method, the uncapping brood plan stands in a class by itself.

A PERSONAL EXPERIENCE.

Some of my bee-keeping friends have requested that I give the steps that led up to the discovery of the treatment herein outlined. Being somewhat in doubt as to its being of sufficient interest to the reader, and also thinking that it might take up more space than the scope of this little booklet would warrant, my first impulse was to decline, but finally decided to give the details as briefly as possible. In order to do so will have to refer a little to "ancient history." I engaged in bee-keeping on a small scale away back in the "seventies." Found the pursuit extremely fascinating and soon had a bad case of "bee fever" on my hands. My enthusiasm did not develop into a mania for inventing a hive as is usually the case with beginners. In 1878 one colony was worked for comb honey and the proceeds of that one hive netted thirty dollars. Kept them from swarming by pinching off the queen cells—a procedure which worked satisfactorily in that particular case. That was the beginning of a non-swarming

mania that has possessed me ever since. Wished then as I have thousands of times since that there was some safe, sure and easy method to prevent swarming entirely. A combination of circumstances made it necessary that I dispose of my bees and active professional life and the want of a suitable location prevented me from again taking up the work for a quarter of a century. Since my first experience as a bee-keeper until the present I have seldom talked with a bee-keeper without winding up by asking him how he controlled swarming and any article published on the subject always received careful reading. The very inception or rather the beginning of the train of thought that led up to the present treatment was due to an article that appeared in the American Bee Journal for March 1st, 1906, on page 185 and signed, "C. Davenport, Southern Minnesota." The writer stated that he had discovered a treatment that would absolutely prevent all swarming; that he gave a treatment that could be done in five minutes or less and in from one to fifteen days a second treatment requiring less than two minutes. He said that there was no hunting queens, no pinching of queen cells and no bumping of hives around; that he had given the treatment to hundreds of colonies and that none of them had swarmed, but he failed to give the treatment. In the same journal for July 12th, 1906, on page 602 he refuses to make his treatment known and gives his reasons that it would make bee-keeping too easy and honey too cheap. Never having read an article on swarming that impressed me as that did, and the matter kept "simmering" in my mind for days and weeks. Sought to discover the treatment he gave his bees by a process of exclusion, as medical men frequently do when they have a complication of symptoms and are not just sure what ails the patient. Reasoned that the treatment he gave his colonies must be one of two kinds—either medical or surgical. Medical treatment was soon excluded as being out of the ques-

tion. Then it must of necessity be of a surgical nature. Surgical treatment of the hive was impossible so the hive was eliminated. There then remained the queen, workers, drones, brood and possibly queen cells to be operated upon. But he had stated that he did not even look for the queen or queen cells, so they were excluded from being a factor in the problem to be solved. There now remained the worker, the drones and the brood to be treated. It being a self-evident proposition that he could not catch all the drones or workers and operate upon them in five minutes, they too were excluded, leaving only the brood for a surgical operation of five minutes or less. To decide what surgical operation he performed on the brood was the hardest part of the whole proposition. Thought of cutting the brood out of the frames, but thought of the drone comb they would build if compelled to build a brood nest anew, and not knowing how to dispose of the brood after cutting it out, that idea was abandoned as poor surgery. Then I thought of mutilating the brood in some manner and also of uncapping it. The uncapping scheme looked the most plausible as I had somewhere read that in hives where there was an excess of drone brood the bees would immediately remove it from the cells if it was uncapped. Why would they not serve worker brood the same way? This treatment looked the most plausible of any that suggested itself to I determined to try it out. The idea that the effect of the operation would be to relieve a crowded brood nest had not as yet dawned upon my mind. In due course of time I found a colony building queen cells preparatory to swarming out. I determined to uncap all the sealed brood if it ruined the colony. In two days after uncapping the brood I made an examination of the hive and found the capped queen cells torn down and the young queens removed and the bees made no further preparations to swarm that season. Candor compels me to say that they did not do anything else to

boast of. Too much dwindling and not enough recruits to enforce the workers. They built up in good shape and were strong in numbers for the fall flow. Did not try any further experiments on any of the colonies during 1906. When 1907 season was on I operated upon two colonies leaving some of the sealed brood to reinforce the workers. Again in 1908 tried the treatment upon a few colonies successfully, concluding before the season was over that two solid frames of brood in each hive was sufficient to make good the losses of the field bees. Not having enough bees at any time to give the treatment a thorough test, it was deferred until the past season (1909) to try it out. Will digress enough to state that my confidence in this treatment was further strengthened by an article written by F. Cloverdale of Maquoketa, Iowa, which appeared in the June number of the "Bee-keeper's Review." 1907. It was entitled "Controlling Increase By Cutting Out the Brood." He stated that:

"Any plan that rids the hive of all brood, kills all swarming just as effectually as if natural swarming had taken place. His plan consists in cutting out and removing all the brood, leaving the honey parts in the frames. Setting the brood in a box with a screen cone on one side and moved up close to the entrance of the old hive, the young bees hatched out constantly and reinforced the old hive. The cut out combs had to be spaced in the box so as not to touch each other and enough bees run in to clean up the drippings and furnish heat for the brood. And this plan required further that enough honey be cut out with the brood to last until all the bees were hatched—the empty brood combs in the hatching box being finally melted up into wax."

The queer part of it is that Mr. Cloverdale stumbled right over one of the most important discoveries of the last half century but failed to recognize its pos-

sibilities. Further along in his article he makes this statement:

"To manipulate colonies so as not to swarm at all when run for comb honey is a thing yet to be discovered."

It read to me like another case of history repeating itself. While it is true that Langstroth was not really the inventor of the movable frame hive, he was the inventor of the first practical movable frame hive, a hive that was of real use to the world. To Huber, the Swiss, belongs the credit of inventing the first movable frame, but his invention was impracticable and not adapted to bee-keeping on a commercial scale.

Returning again to the season of 1909, having settled upon a routine of treatment to be carried out, will state that I began the season with fifty-four colonies in ten-frame dove-tailed hives with Hoffman frames. Ten colonies were Italians and the rest were hybrids—the apiary being located upon the back part of two village lots. Owing to a cold late spring they built up slowly in the early part of the season. The weather being more favorable from May 15th to June 15th, they built up rapidly and were in good condition for the honey flow from white clover that began about that time and was at its best from June 20th to July 5th, when a severe drouth began to make itself felt. Seventeen colonies were worked for comb honey and the remaining thirty-seven for extracted. From June 26th to July 12th the swarming season was on in earnest, the most of them preparing to swarm out within ten days after June 26th. Of the seventeen colonies worked for comb honey, twelve of them built queen cells and were given the treatment, one of them being operated upon after it had started to swarm out, an account of which will be given later. Getting behind with my work two colonies were given the treatment before making swarm preparations as they were very populous and the treatment was given as a preventiva-

tive. Only one comb honey colony made swarming preparations after the treatment was given. That colony had a poor lot of brood combs, quite a large percentage of drone comb, and some of the remaining combs badly clogged with old pollen which the bees were trying to chew up and carry out. They seemed to be hampered for room to establish a normal sized brood nest. It was given the second treatment nine days after the first one. None of the fourteen colonies treated made any further preparations to swarm but worked on with untiring energy giving a good account of themselves as honey gatherers. Three of the comb honey hives made no attempt at swarming. They were weak colonies that were late in building up and were of the number I had intended to run for extracted honey but had been forced to give them supers with sections owing to a delayed order for supplies. They built up to the swarming point and made each about a super full of honey and would have needed a treatment soon only the drouth set in and cut short the flow of honey to such an extent that there were no more swarm preparations by any of the colonies in the apiary. In applying the treatment to the comb honey colonies my aim was to let them build cells and get as near to the swarming out point as possible without actually swarming. The same methods was applied to extracting colonies but more of that later. Opening the hives and examining frames for queen cells made work and plenty of it, too, and if the method had to be carried out along such lines it would have but little to commend it. I did not wish to leave a single loop hole for some doubting Thomas to jump up and say that perhaps my bees wouldn't have swarmed if I had left them alone, so in testing the plan for publication I proposed to know just how many were preparing to swarm and their condition at all times, and also to know the effect of the treatment given. If it was or was not a cure for swarming I wanted to know the

facts. In order to show the severe test it was put to I will now give a brief outline of colony No. 36, with a pure Italian queen one year old. Records show that it was examined June 23 and no queen cells found, strong in bees and brood and working in the comb honey super. Owing to press of work I could not examine them again June 30th. July 1st I noticed that they were clustering out and not working as they should. The next day, July 2nd, as I was working near them with a smoker in working order, I was dismayed to see the bees suddenly rush pell mell out of the hive just as I was on the point of examining them. Tried smoking them to stop their rush but they kept coming right out thru the smoke. Finally as a last resort I grabbel up a small piece of board lying near and closed the entrance with it, all but about two inches at one end. Into this small entrance I blew clouds of smoke until I had them partly quieted and then I stopped it up with grass. Went next to the bee house and procured a piece of perforated zinc. After adjusting it I stepped back to await results. The bees swarmed out at once and after circling around for several minutes without clustering, they finally began going back into the hive. I knew then that I had succeeded in imprisoning the queen, but was afraid to open the hive for fear they would swarm out. So decided to wait until the next morning to look them over. This happened about 8:00 a. m., and about 11:00 a. m. they came out again, circled around and once more returned to the hive. At about 3 p. m. the performance was again repeated. Early on the morning of July 3rd I opened the hive and counted fourteen queen cells in various stages of development, three of them being capped over. Slashed off all the heads of the capped brood found in six frames, leaving two frames of nearly solid capped brood. Took especial care not to disturb any of the queen cells, and then closed up the hive wondering what they would do.

Was in the apiary all of that day but they did not once offer to swarm out, but worked for dear life dragging out dead brood. Opened the hive again July 4th and found the capped queen cells torn open and the young queens removed. That colony made no further attempt to swarm and gave me nearly one hundred pounds of nice comb honey despite the drouth that came on soon after. Certainly no severer test of any non-swarming system could be made.

I will also give a condensed statement as to how the extracting colonies were managed. Having six queen excluders, they were placed over six of the largest colonies at the time they were given their first super. They all made preparations to swarm. They were given the treatment and no further attempts at swarming were made. Procured a dozen more excluders later and used them where the queen was found below, selecting populous colonies when possible. Not all of them built cells, due to the lateness of their use, perhaps. Besides the six colonies mentioned above there were nine other colonies devoted to extracting that built queen cells and were given the treatment, and only one made preparations to swarm again and had to be given a second treatment. Only two out of twenty-nine colonies thus far operated upon required the second treatment. I will now account for the other twenty-two extracting colonies, for the reader may have gotten the impression by this time that I had no swarming, which would be erroneous. Will digress long enough to state that thirty extracting supers ordered thru a local dealer failed to materialize until a month too late for the rush and the extracting colonies were crowded for room, which accounts in a measure for the large percentage of swarm preparation. Office duties, wiring of frames and putting in of foundation consumed so much time that the colonies could not all be examined every seven days as had been originally intended and as a result three colonies that had not re-

ceived treatment threw off swarms and were managed as follows. The first swarm that issued was hived on frames containing starters and placed upon the old stand. The old hive with super on was moved to one side as I intended to give the new swarm the old super as soon as they had drawn out sufficient comb to establish a brood nest. The weather being excessively hot and the bees being unable to break their cluster, became dissatisfied and deserted their hive the next day and settled on a low branch of an apple tree. Before they could be hived a swarm issued from another hive and settled with it on the same branch. Hived both swarms in the hive with starters, capturing one queen as they were running in, and set the hive back on its original stand. Opened the old hive from which the first swarm issued and uncapped all brood but two frames and was very careful not to disturb any capped queen cells. After operation, placed old hive over new double swarm with a queen excluder between, putting the super on top, making a three story hive. Result, queen cells destroyed and no further attempt at swarming out. The hive from which the second swarm issued had all queen cells destroyed but one on the seventh day and no swarm issued from that hive.

The next day another swarm issued from a colony that had not been treated. Hived it on frames with full sheets of foundation setting the old hive to one side and placing new hive on old stand. At once gave old colony treatment and placed it on new hive with excluder between and extracting super on top—the same procedure as before. It destroyed the queen cells and made no further attempt at swarming. The plan was a success in the two cases mentioned and is worthy a trial when no increase is desired. The method outlined prevented all increase in the number of colonies. There were fifty-four colonies spring count and fifty-four when the swarming season was over. The remaining nineteen colonies which were run

to extracting made no attempt at swarming, but three of the stronger colonies were given the treatment, as a preventative as they were becoming populous and I was getting somewhat tired of making such frequent examinations. The three made no preparations to swarm. The sixteen remaining colonies that did not arrive at the swarming point were colonies that were weak in the spring and were slow in building up and by giving them super room the swarming impulse was retarded. A summary of the season's work would be as follows:

Of the seventeen colonies run for comb honey:

11 were given the treatment after queen cells were built.

2 were given the treatment as a preventative of swarming.

1 was given the treatment after swarming out had commenced.

3 made no preparations to swarm.

Of the thirty-seven colonies run for extracted honey:

15 were given the treatment after queen cells were built.

3 were given the treatment as a preventative measure.

2 were given the treatment after swarming and before uniting.

1 had all queen cells but one pinched off on seventh day.

16 made no preparations to swarm.

One comb honey colony and one extracting colony made preparations to swarm the second time and were given the second treatment.

In no single instance did a colony swarm out that had received the treatment. Neither did any of the few colonies that were treated during 1906, 1907, 1908 swarm.

Whether the method of swarm control here de-

scribed is really the C. Davenport secret or not will never be known unless perchance some of his neighbors have knowledge of it for in the article of March 1st, 1906, referred to, he speaks of operating upon his neighbors' bees free of cost in order to test the treatment. If it is not his treatment, it at least fulfills every indication claimed for his method. The Bee Journals for July, 1908, announced that C. Davenport, whose real name was C. Davenport Monette, met an untimely death one night in June when his house burned down and that he was a resident of Chatfield, Minn. For the information of the reader will say that Chatfield is a town fifteen miles north of here.

Now, as to whether uncapping a less amount of the sealed brood would prevent all swarming or not, is a problem that I have not as yet tested out. Perhaps if one-third or even one-half of the sealed brood was allowed to remain, the over-crowded condition of the brood nest might be relieved sufficiently to cause the bees to abandon swarm preparations. My experiments ranged between leaving two frames of sealed brood and uncapping all there was in the hive. If a less amount of uncapping would "knock swarming in the head" it would be an advantage to the timid bee-keeper who might have some compunction of conscience about destroying so much sealed brood. Personally I do not consider the matter of material importance as the plan outlined gives all the workers needed for the clover and basswood flow in our northern climate, and the open brood left undisturbed, together with the newly laid eggs that have been deposited in the cells from which the uncapped brood has been removed, gives an army of workers for the late fall flow, without having a hive full of consumers right after the first honey flow is over. The plan can be adapted to southern conditions where the swarming season begins a month or so earlier than the main honey flow. Can see no reason why the plan cannot be adapted to any lo-

cality where bees are kept. It is bound to revolutionize bee-keeping all over the world or I am woefully mistaken in my judgment.

It is perhaps hardly necessary to caution the reader not to use this method if his apiary is infected with foul brood, owing to the danger of carry the disease from infected to healthy colonies.

And now, brother and sister bee-keepers, allow me to state in conclusion that I have outlined a simple plan of swarm control that the bee-keeping world knows nothing about so far as I am aware. And I offer it to you for your approval or condemnation. At a rough guess I expect nine out of ten of you to read the statements herein made with a good deal of suspicion, furthermore I expect all of you to accept them with a "grain of salt." All I ask of you is that you give the plan a fair trial for I know that you will be surprised at the results. The treatment being so simple and easy and the results so surprising it was a difficult matter for me to believe it myself even after having proof right before my eyes. After you have given it a trial I feel sure that you will not consider my statements extravagant and when the full extent of its possibilities are realized the bee-keeping world will render their verdict in accordance with the claims I have made for the treatment.

APPENDIX

All copies of the previous edition on swarm prevention having been sold out, it becomes necessary to get out a new edition.

Do not consider it advisable to rewrite the pamphlet as the new matter I wish to offer can best be embodied in a brief appendix.

The major portion of the criticisms that have reached me, have been quite favorable, but a few leading bee-keepers of the country have decided convictions against uncapping worker brood, claiming they could never get their colonies too strong—that they needed every worker they could get to help gather the harvest. Certainly good logic, provided they secured their army of workers before the honey flow was on, and provided further that the pesky bees do not take a notion to swarm right in the midst of the harvest. A couple of correspondents from the Southern states do not think the plan adapted to their particular localities where the honey flow is intermittent, consisting of short flows extending over a long period of time. They claim that shook swarming can not be practiced successfully, that their only resource is to cage the queen for eight or ten days. To those who object to uncapping worker brood and to those who live in localities with a succession of short honey flows a non-swarming plan will be given that has every indication of meeting their requirements. It dovetails in very nicely with the method given in my booklet and has all the indications of meeting the requirements of the class of bee-keepers referred to. The plan was new to me and I am not aware that it has ever been published. At the annual meeting of the Fillmore County Bee Association, held in Preston, Minn., Dec. 8 and 9, 1909, a

young man by the name of Paul Bigalk of Cresco, Iowa, outlined his method of preventing swarming. Wrote him asking him to describe his method and requested the privilege of publishing it, which was granted. His reply being substantially as follows:

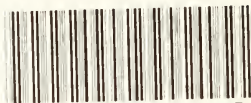
"Have over fifty colonies of Italian bees in ten frame standard dovetailed hives. For three years I have practiced uncapping all drone brood and at the same time pinching off all queen cells to prevent swarming. One treatment is enough to prevent swarming for the entire season if well done and done at the right time. I prefer to do this when there is a good honey flow on and the bees ready to swarm. Be sure that the bees have plenty of room to work. If there is no drone comb, then worker comb must be taken instead. This treatment has been a success with me. As I remember I have only had two or three swarms since using it. Have used this method on about thirty-five colonies each year."

In colonies having a large amount of drone comb Mr. Bigalk's plan has much to commend it, as it serves the double purpose of controlling the swarming impulse as well as getting rid of a lot of useless drones. Personally I have had no experience in uncapping drone brood to prevent swarming as I uncap both drone and worker fast as I come to it. Have but very little drone comb in the brood nest. Exchange for full sheets of foundation and use the drone comb in the extracting super. A young man near here with seventy-five colonies restricted swarming to twelve swarms last season my simply uncapping all the drone brood found in the hives. Being the first season that he had tried the scheme and matters being as yet in the experimental stage, he declined to have his name mentioned in connection with the plan. It certainly had quite an effect in controlling the swarming fever, for with our hot days and rapid honey flow during the clover season the bees seem to have a regular mania for

swarming in this locality. Judging from present indications there will be a thorough trial given the plan this coming season and with the additional methods given it should be entirely feasible to evolve a perfect system of swarm control that would be adapted to every locality, every condition and every climate.



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