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Vol. 2, No. 7.

The WESTERN BEE JOURNAL



PUBLISHED MONTHLY IN THE
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BEEKEEPERS.

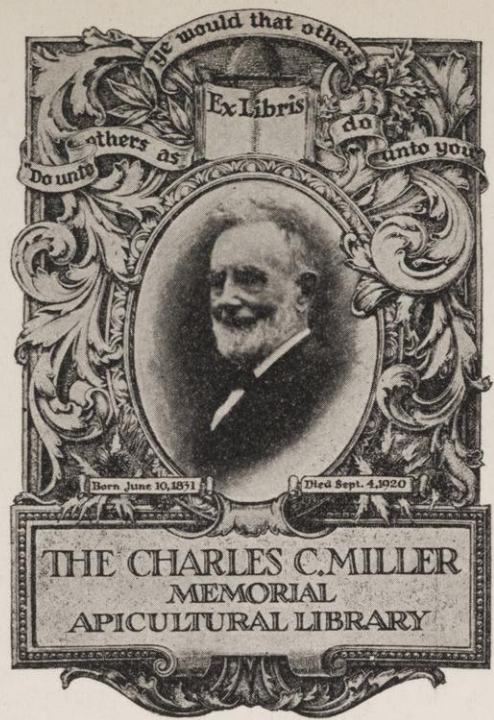
MAY

1905

P. F. ADELSBACH,
EDITOR AND PUBLISHER
KINGSBURG, CALIFORNIA

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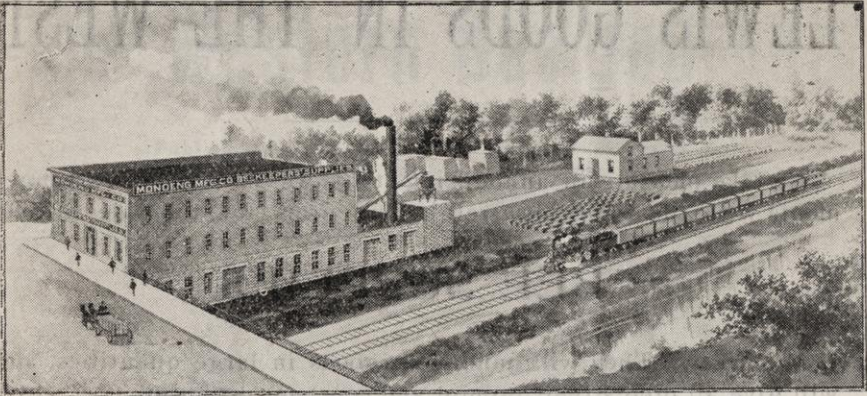
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WATERTOWN, WIS., U. S. A.

The Western Bee Journal

Published Monthly in the Interest of Bee Keepers.

VOL. 2.

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No 7.



—Courtesy American Bee Journal.

GEO. W. BROBECK.

The Late Geo. W. Brodbeck.

A. J. COOK, IN AMERICAN BEE JOURNAL.

It has been my great pleasure, and no less a privilege, to know intimately our departed friend, the late Secretary of the National Beekeepers' Association, George W. Brodbeck, for over 14 years. I have met him in the railway car, at his bee ranch in the grand mountain canyon, at the convention, and in the quiet of the home. It has rarely been my good fortune to know one who has taken a stronger hold of my respect and affections than did Mr. Brodbeck. He was certainly a man who was deeply religious, and as sincerely determined to exemplify the teachings of the Master in his life and work as any one I have ever known. His kindly sympathy was ever manifest. When any proposition was urged his first question was Is it right, and best? If there was any possibility that wrong could come to any one, then his opposition knew no bounds. If any contemplated enterprise promised benefit to those interested, especially to his bee-keeping brothers, then his enthusiasm and willingness to sacrifice in such case was almost phenomenal. There is little wonder, then, that he was a leader in whatever concerned the bee-keeping interests of our state. There was no wonder that he was choice for secretary of the National Association; there was no less wisdom shown in selecting him president of the business organization from which so much was hoped in aiding the bee-keepers to market their honey.

As suggested above, it was once my pleasure to visit the apiary of our friend in one of the most beautiful and romantic spots in the San Bernardino range of mountains. Like all our best bee-keepers, Mr. Brodbeck was exceedingly neat and methodical. I feel sure that method, or system, in all his work might almost be said to be his watchword. I think I never saw a more neatly arranged apiary, or

one in better condition in every way, in all the apiaries that I have visited in our state than was his. Indeed, one may safely say that Mr. Brodbeck may be called the Hetherington or Bingham of California. He was no less a student than a practical man, and thus he was an up-to-date bee-keeper. He not only practiced the best that prevailed in other apiaries, but like all our bee-keepers he had many time-savers, short-cuts, and ingenious inventions and methods peculiarly his own. Those of us who used to enjoy his presence in conventions will remember how earnestly he used to father any proposition that looked to the advancement of our apian practices and methods.

One only needed to know Mr. Brodbeck but slightly to recognize at once that he was one of our most clean and pure men. It is a firm belief of mine that a clean heart is almost always indexed in the face. Mr. Brodbeck was no exception. It was a wonder, then that when his name was proposed for the secretary of the National Association all of our visiting delegates, who had enjoyed looking into his kindly eye, united with us at once in giving to our revered friend this proud honor. Such clean, true men as Mr. Brodbeck are the glory of any country. Such men always have beautiful homes, and beautiful homes are a very bulwark against everything vicious and mischievous. Mr. Brodbeck was the head of such a home; and the spirit of the man was felt as soon as one entered his household.

Mr. Brodbeck was an earnest, faithful, consistent member of the Methodist church. His brother, Dr. Brodbeck—these two brothers were very dear to each other—has been for long years superintendent of one of the largest and most successful Sunday schools in the city of Los Angeles. All those who were so fortunate as to be present at the Los Angeles meeting of the National Association, will remember the delightful music which charmed us all on that occasion. This music was rendered by the orchestra

of Dr. Brodbeck's school, and, as I remember, was a free gift.

Our friend was one of those rare spirits who carry every principle of their religion into their daily life. It may be said of him almost as truly as of any one I ever knew, as was said of the Master, "He went about doing good. In his life there was no guile."

That Mr. Brodbeck had the confidence of our hard-headed business men is apparent from the fact that he was elected president of the California National Honey-Producers' Exchange. This organization undertook a great work, along untried lines, which promised great things, but which demanded great tact and the best judgment to carry it through to the desired success. I am sure that no one ever regretted this choice, and I am sure that this organization has met a serious loss in the death of its very able president.

Mr. Brodbeck was a native of Lawrenceburg, Ind., a little west of Cincinnati, where he lived until he was married. His early home was very precious to him, and he endeared himself thoroughly to all its members. His married life was an extremely happy one, as he was a very affectionate and devoted husband. This couple were not blessed with any children, which misfortune, I am sure, they both deeply regretted. They had, however, a very merry family, for they both were great lovers of dogs, and they had numerous dog pets, which seemed almost like members of the household. I well remember when I visited Mr. Brodbeck's apiary what a kind greeting I received from the canine part of the community. Mr. Brodbeck's affection for the dogs was most clearly apparent, and this feeling was fully shared by his good wife, who survives her husband, and is now living in Los Angeles. The first years of their wedded life were spent in Edinburg and Indianapolis, Ind., where he first became interested in bees.

In 1887 Mr. Brodbeck first came to Los Angeles, where he resided until

the time of his death. In the autumn of 1903 there were extensive forest fires in the canyon where his apiaries were situated. Undue exertion and exposure in trying to check these fires brought on an attack of pneumonia in January of the following year, from the effects of which he never recovered. His death occurred Feb. 6, 1905. He said repeatedly that his mind was not set on the things of this world, but that if it were God's will he wished he might recover that he might do more good. An intimate friend remarks of him, that "the greatest desire of his life was to help any one who might come in his way, never expecting or wishing any reward for his labors."

I am sure I voice the sentiments of the entire bee-keeping brotherhood of California, when I say that I feel that in the death of Brother Brodbeck I have sustained an irreparable loss, and feel that another attraction is added to the great Home towards which we are all hastening

Bees and Their Ways.

It is a rule for bees to build their brood combs of a uniform thickness and a certain distance apart. It was found by measurement that bees, when left to themselves, space their combs one and one-half inches from center to center. Then it was that men, noticing this rule began to try to devise some means to bring the manipulation of the combs within easier reach. At last Langstroth brought out, or at least perfected, the movable frame, by means of which the combs of a colony could be easily removed from the hive for examination; could be transposed, or exchanged with the combs from another hive. If it had not been customary for the bees to build their combs straight and uniform men would not have thought of having the combs built in frames.

A normal colony of bees casting a

prime swarm uniformly takes its reigning queen with said swarm, and the swarm will alight and hang in a cluster before leaving for their final home.

Taking advantage of this habit, the practiced beekeeper does not go to the trouble to beat tin pans and throw dirt in the air in order to stop such a swarm. He knows they will first cluster on some tree or bush and while thus clustered he will have time to prepare a hive for their reception. If they take flight from the cluster he knows they will leave for parts unknown and it is then that he will resort to any and all means to stop them. My method of stopping run-away swarms is to avoid ever having any.

A normal swarm of bees will uniformly return to the hive from which they came if by any chance the queen is not with them; taking advantage of this fact we clip off one wing from the queens before swarming season begins, then when the swarms issue the queens, not being able to fly, are found and caged at the entrance, and held till the swarm begins to return, when they are released and allowed to run in. In the interval that the bees are in the air before discovering the absence of the queen the hive can be taken away and a new one put in its place. To this new hive the bees will return, because it is the law with them to return to the old location. Now you begin to see how a knowledge of these things aids us in the practical work of the apiary. If bees begin to build a comb straight they will finish it that way. We therefore place strips of foundation in the frames or section boxes, it having been demonstrated that the bees will uniformly start their comb on these thin strips of pressed wax.

Every beekeeper knows that bees will pounce on any exposed sweets during a dearth of honey when bees cannot find nectar in the flowers, and that they will become very much excited and will be likely to enter other

hives than their own for the purpose of robbing, and will sometimes become angry and sting stock or passers-by. He will therefore carefully avoid exposing any bits of honey or other sweets at such times, and women preparing preserves should do so behind closed or screened doors. If not she may be bothered by having a lot of bees buzzing inside of her kitchen. At a time when there is honey in the flowers bees do not notice any such exposed sweets.

As a rule bees cast a prime swarm as soon as the first queen cell is sealed, unless prevented by bad weather, therefore the first young queen may be expected to emerge on the eighth day from first swarm. When the young queen hatches we may look for a second or after swarm. Knowing this law we will look in the hive on the seventh day and destroy all but one queen cell. There will be no swarm, in accordance with another well-known law that the bees will not leave the hive queenless and no provision for a new queen to be reared. It will be seen that beekeeping consists in conforming your methods to the habits of the bees in such a way as to have them do your will, not by willing that they shall do anything contrary to their established customs.—Harry Lathrop, in Wisconsin Agriculturist.

The Rietsche Press.

ADRIAN GETAZ, KNOXVILLE, TENN.

The statement has been made that there are in use in Germany 17,000 Rietsche comb foundation presses. A more recent writing puts it at 20,000. Some are made entirely of metal similar to that used in making rollers, others of cement held by an iron frame. I don't know how many are used in France; there are now two factories there making them. Rubber compounds, hardened plaster, etc., are also used to some extent.

Advantages of the Press.

Why is it that so many European bee-keepers use Rietsche presses and make their own foundations? Several reasons are given.

One is that the foundation sold by the large establishments is sometime adulterated. The extent of this adulteration has been greatly exaggerated. To say that no pure wax foundation is made in Germany is as ridiculous as the assertion made there that no American honey is pure.

Another reason is the fear of introducing foul brood. Every now and then, somebody reports that foul brood has appeared in his apiary and no cause could be assigned to it, except that the germs of it were brought in the foundation bought and used. A few similar cases have been reported in this country. For my part I do not see how any kind of germs could survive the foundation making progress, still I do not know positively, and cannot find fault with any one who wants to be on the safe side anyway.

A third reason, and probably the most potent of all, is the cheapness. The cost of making foundation with the Rietsche press is insignificant. The process is simple and rapid. Almost every beekeeper could make his foundation during a few winter evenings when nothing else could be done. In Europe, like here, the cost of the foundation is entirely out of proportion with the price of the wax.

The Press.

I make it of a mixture of cement and other substances constituting one of the artificial stone compositions recently introduced in the building business. I make it sufficiently thick to dispense with the iron frame. Plaster is too weak, pure cement objectionable in several respects, metal too costly.

The press is made of two pieces of artificial stone hinged together as shown in the accompanying figure, which represents it open. The two pieces shut together as a book or the lid on a box.

Making Foundation.

The first thing to do when the press is to be used is to soak it in water for several hours. (It is necessary that the pores of the stone should be full of water, otherwise it would be difficult to prevent the wax from sticking to it. The wax to be employed should be melted in any kind of apparatus that happens to be handy. Of course care should be taken not to burn it. It should not be too hot, either, just a little above the melting point. We now place our press on a table, or something convenient. The side with the hinges is to be somewhat higher than the other by putting a block under as shown in the figure. This is to facilitate the spreading of the wax and make the foundations thin enough. The greater the slant the thinner the foundation. A heavy brood foundation can be made by leaving the press horizontal. I am quite proud of the fact that I am the one who discovered that foundation could be made as thin as desired by putting the press in an inclined position.

The press is opened. Some lubricant is applied to both faces if necessary. When the press is new it may be necessary to lubricate at every sheet of foundation, but later, when the pores are more or less filled, only at every third or fourth.

Enough melted wax to make a sheet, or rather a little more than needed, is now poured on the press (the lower leaf) to make a sheet of foundation. The press is then closed immediately and quickly, before the wax begins to solidify. This spreads it all over, and whatever excess of wax may be in the press is forced out at the edges. In a few seconds the wax solidifies and the press can be opened to take out the sheet. All that takes quite a long description, but only a few seconds to perform.

If too much lubricant is applied, the imprints of the press are filled completely and the wax cannot get in

them. The result is a poorly imprinted sheet. I found out, however, that such a sheet is as good as any, so far as practical results are concerned. The bees fix up such small irregularities just as well as perfect cells.

For lubricant a mixture of honey and water can be used. The European writers say half and half. I use only one-fourth or one-third honey. I guess any kind of cheap corn syrup would do as well. Thick soapsuds and a very thin paste of cooked starch are also recommended.

Another precaution, that I was a long time discovering, is the necessity of doing the work in a warm room, in fact, in a quite warm room, for the best results. In cooling the wax shrinks considerably. If left to cool too much on the press, where the sheet is held in place, innumerable almost microscopic cracks occur over the whole sheet and render it exceedingly brittle. If the sheet is taken up while soft, and can then shrink freely, the shrinkage takes place as a whole without causing any crack.

The Foundation

the foundation made on the Rietsche press has not the transparency of the Weed foundation. It is the enormous pressure to which the Weed foundation is submitted to that renders it transparent. There is also a slight difference in the regularity of shape of the cells between the two kinds. This, however, does not make any practical difference between them. If there is any difference in quality, it is in favor of the Rietsche press. Notwithstanding its name, the Rietsche is not a press but a molding machine. While the wax solidifies, it is under only the slight pressure of the weight of the upper leaf of the press. The result is that the Rietsche foundation is comparatively soft, in fact no harder than natural comb. While the bees seldom reduce the thickness of the bottom of the cells of any hard foundation, no matter

how thick it may be, they almost invariably thin down the bottom of the Rietsche foundation if it is too thick to suit their notion.

No matter how thin the Weed and hard foundation are, they are comparatively hard and tough. On the other hand a section of honey made with the aid of a piece of Rietsche foundation is as soft and tender (I mean the septum or midrib) as in a piece of natural comb.

The European writers claim that the Weed and other hard rolled foundations buckle more than the Rietsche foundation. They explain it from the fact that the hard foundations are compacted and pressed down to an abnormal extent and when submitted to the heat of the hives, they expand back to their normal size, and thus cause the buckling. They advise those who use them to warm them until quiet soft before putting them in the frames of the sections.

Shipping Cages.

BY "SWARTHMORE"

The "Benton" is unquestionably the best shipping cage ever invented for posting queens far or near. By improved machinery these cages are now made very nicely at small cost.

For local shipment the three-hole cage of one-half inch thickness is good enough and for introducing there could be nothing better. Bees that have been from one to three days queenless are almost certain to accept queens issuing from any cage on the candy-plug plan. The more experienced apiarists have quicker methods for introducing mailed queens but for the rank and file of bee-keepers simplicity should be the aim. If bees are confined in a screen-covered box, entirely without queen or brood twelve hours, they will then be in prime condition to accept a queen in most any way one may see fit to introduce her.

For long distances a three-hole deep cage has been used with success, but the six-hole shallow cage is preferable, because of the larger amount of food it will carry. Very wide spaces are undesirable in queen mailing cages on account of the insecure foothold afforded to the bees when jostled about in the post. It is the opinion of many that one-inch holes joined in series of three or six, as originally designed by Prof. Frank Benton, make sufficient space for all ordinary shipments.

In shipping to some of the tropical countries, ants hector the imprisoned bees in their efforts to get the candy. Oftentimes the bees are overpowered by these pests. They will enter the cages, appropriate the candy and completely devour the queen and her train, leaving nothing but the dried-up shells of the unfortunate bees. The most atrocious of these ants are the large red ones; therefore to prevent them from entering the cages as far as possible provide quite narrow air slots and use the brand of perforated tin containing very small holes.

A number of cages tied firmly together will deliver bees in much better condition than when posted singly, due, I believe, to the larger bulk, which is never handled so roughly and which cannot be crammed into close, airless quarters. If several cages are first squeezed tightly together in a vise and then bound with small twine they will seldom separate in the mails.

Many failures in shipping queens by mail result from improperly mixed candy. It is always best to mix a large mass of the food at one time. Use the finest grade of pure sugar and select thoroughly ripened honey for moistening. Stir well and knead like dough, until the mass will hold its form when dropped upon the moulding board. Keep the candy in a tightly-closing pail or jar and hang away from ants. Do not provision cages more than a few hours in advance of shipment. Draw from the

supply of candy enough for immediate use and if at all moist knead in more dry sugar before placing the food in the cages. The candy is quite susceptible to moisture, therefore mould in dry sugar until quite hard, especially during damp weather. Candy mixed with warm honey is quite liable to harden or cust in such a manner, thus the bees cannot work it into liquid. Good candy can be made with warm honey, however, but it must be mixed with skill.

Crop Prospects In California For the Season of 1905.

The following is a special letter to the California Fruit Grower, of San Francisco, from one of its special writers in southern California.

The prospects for the new honey crop in southern California at this date are very good. Those engaged in the business are making all preparation for a large yield, and it would seem at this time as though there would be a good quantity made, as conditions have been very favorable.

There is one very important factor to take into consideration, however, and that is the run-down condition of the bees. Last season was a very hard one on them, owing to the light rainfall and the absence of natural feed. Hundreds of colonies perished—starved to death, and many that are left are very weak; so that it is going to take some time for them to build up and get in good working order. This fact will undoubtedly have an important bearing on the crop. Provident beekeepers took care of their bees by feeding them syrup made of sugar, and a large quantity—tons and tons in the aggregate—was used for this purpose; but there were many among the shiftless and those unable to buy sugar who let their bees go and they consequently died.

It may be observed that last year marks an epoch in the honey industry

in southern California, in the fact that the crop was an absolute failure. There have been a number of years never before since beekeeping was established here on a large scale was there a complete failure.

The usual quantity of about 9,000 when the output was very small, but cases of comb honey was made in Inyo county, a large portion of which came to Los Angeles, and about 7,500 cases of extracted honey were made in the San Joaquin valley, so this, together with about 15,000 cases of extracted and 10,000 cases of comb honey in southern California carried over from the crop of 1903, gave the dealers and shippers some honey business to handle.

In a good season southern California will produce approximately 250 carloads; San Joaquin valley, 65 cars; Inyo county, eight cars; all of fifteen tons each. A carload of extracted honey is 250 cases, and a carload of comb honey is 1200 cases, both about 30,000 pounds net weight of honey.

Reports have already gone forward to eastern markets and to Europe that the California crop this year will be very large, and that low prices will rule. This information is premature. The prospects are good, but there is no such uncertain crop to count on as the honey crop. It can never be depended on until it is actually gathered and in hand. Cool, foggy weather; very hot weather; heavy winds and other conditions affect it. In fact, the yield is governed entirely by climatic conditions which prevail during the producing seasons. It is to be hoped that the crop will be large this season and that producers will make some money, as last year was a very hard one on them.

On another page appears the advertisement of Anthony Baiggi, a queen breeder of Switzerland. This is a fair showing for the WESTERN BEE JOURNAL—as to the extent of its circulation and as an advertising medium.

The Ripening of Honey.

ADRIAN GETAZ, KNOXVILLE, TENN.

In the Bee-Keeping World department of this paper, is an item translated from the Revue Eclectique concerning the experiments of Mr. Huillon on the ripening of honey in the hive; or, rather on the evaporation of the surplus water, for it must be remembered that the ripening of the honey means more than mere evaporation.

To say that I was astounded at the results obtained or, if you prefer, the assertions made, would not be a great exaggeration by any means. I did not realize the full import of them until the second reading. Then I hesitated. But I had already commenced the translation, and the articles really worth translating are very few in number and far apart in time; so I finally decided to let it go in.

Since then I have lost some sleep, studying the matter, and have arrived at some conclusions. But let us first recall Mr. Huillon's experiments. He gave three colonies new sets of empty combs early in the morning, taking away all those that contained honey. The combs of colony No. 1 were taken up as soon as the day's work was closed. Those of colony No. 2 were not taken out until early the next morning. Colony No. 3 was shut in the cellar three days and then the combs taken out. The honey was extracted from all, and the density ascertained. The honey, or nectar, of colony No. 1 was found of a density of 1.394. That from colony No. 2 1.413, and that from colony No. 3 1.432. This last is somewhat heavier than the fully ripened honey is generally, which is 1.424. Admitting that this last contains 20 per cent of water and 80 per cent of sugars (sucrose, dextrose and levulose), and calculating the percentage of the others from their densities, we find that the nectar or honey at the end of the very day it has been gath-

ered contains already 74 per cent of sugars and only 26 per cent of water. By next morning the percentage is reduced to 22 per cent of water, and a day or two later it is ripe honey so far as evaporation is concerned.

Evaporation.

This 26 per cent of water at the end of the first day is what stunned me. The nectar as found in the flowers contains only 20 per cent of sugars and 80 per cent of water. To bring it down to 26 per cent of water, it is necessary that over nine-tenths of the water originally contained in the nectar should be evaporated.

That's not all. Evidently these figures represent the average for the whole day's gathering. As the last gathered could not have the time to evaporate, the rest must be sufficiently advanced to make it up. In fact, most of it should be completely evaporated within a few hours after being brought in. That is simply impossible. Even with the help of the best boiling apparatus and a brisk fire, such a reduction could not be made.

We are then confronted, not by a theory, but by an impossible condition. Either Mr. Hullion committed an egregious blunder, or the true explanation lies in another direction. It is not likely that Mr. Hullion made a mistake. All that he had to do was to measure one liter of the honey and weigh it. The weight in grams would give the density at once, as one liter of water weighs one thousand grams.

Some corrections might be introduced. The honey having a density of 1.424 might not be exactly 20 per cent of water. The nectar gathered might have contained less than 80 per cent of water. The temperature should have been taken in consideration. The inverted sugars may not affect the density exactly like the uninverted. But after making a generous allowance for all possible corrections, the general results are not appreciably changed.

On the Wing.

There is but one explanation that I

can see. That is the excess of water is expelled from the nectar while in the honey sacs of the bees during the time they gather it and come back home with it.

That's not a new theory. The idea was advanced years ago by several writers. They thought that the bees might possess some apparatus similar to the kidneys by which the excess of water might, we may say, be filtered through and expelled. To this it was replied that the bees do not possess anything like kidneys or any other organ capable of doing such work.

The last assertion is correct, but the thought occurred to me that the evaporation or filtration, whatever it may be, might be accomplished by other means. Most of us during hot weather have more than once imbibed a pint or two of water only to see it come out at the skin almost at once in the shape of sweat and be about as thirsty as before in less than an hour or two. What is not generally known is the fact that such a process is constantly going on, more or less, even in the coldest weather. The water usually vaporizes as soon as it reaches the outer side of the skin and is only seen as water when in quite large quantity. Furthermore the same process occurs through the lungs and the vapor they emit is very visible in cold weather.

The bees cannot sweat; their skin (if skin it can be called) is built on another principle, but their lungs are extensively developed, ramify and reach everywhere throughout the body. And it might be that the excess of water contained in the nectar could be largely evaporated through them during the time it is gathered and brought home.

To that it may be objected that the nectar freshly gathered is very liquid and falls out of the combs easily. That's true; but the objection has not a very great weight. You can dissolve a pretty fair quantity of salt in water and that water will be as liquid as before. You can dissolve a considerable

quantity of sugar in cold water; the mixture will be about as liquid as the nectar. But heat or cook that mixture and it will thicken considerably and become syrup or even candy. The thickening is due to the inversion of the sugar, especially to the levulose which is of a more gummy nature than the others. (See the best books on organic chemistry for full information on that subject.)

Night Work.

The next question is: If most of the evaporation is done during the very day when nectar is gathered, why do the bees work so much during the following night?

Perhaps some of the readers of this article may wonder what I mean by "working it during the following night." I could not give a better answer than by quoting what Doolittle says on the subject.

"When bees are gathering nectar from the field, they give the same, on entering the hive, to the young, or nurse bees, as I have said before. If no more is gathered than these young bees can hold in their sacs, none is put in the cells. If more is gathered than their sacs will hold, the surplus nectar is put into the cells by these nurse bees until evening, and then evaporated down, although this evaporation is going on to some extent during the day. At night all hands join; from the outside laborer, with well worn-out wings, down to bees but a day or two old, when the nectar is taken into the honey sacs, thrown out on the partly doubled tongue, drawn back in again, thrown out and drawn in again, and so on, until by this stirring up process and the heat of the hive, these small particles of honey are brought to the right consistency, when it is deposited in the cells to be sealed in due time."

Now, why all that, if, according to Mr. Hullion's experiment, only a small per cent of water remains to be evaporated?

To this it may be replied that this work is not altogether a question of

evaporation. The bees also add to the reduced nectar secretions from different glands and mix them thoroughly together during the process above described. Some chemical changes undoubtedly take place, or at least begin during that time.

Final Ripening.

If all the above is true, the evaporation of the surplus water and the mixing of the different elements should be complete in less than two days (unless it be in the very heavy yields). But we know that the honey is not ripe yet. Some chemical reactions have yet to take place slowly before the honey is really ripe or fully ripe. The most important one is the full transformation of the cane sugar in dextrose and levulose. Others affect the taste of the honey. Many kinds of honey have at first some disagreeable taste that gradually disappears through the ripening process.

Artificial Ripening.

If two or three days is all that is needed to put the honey in such shape that the remainder of the ripening process can go on, so to speak, of itself, why not extract it then and let the ripening go on outside of the hive?

Well, I don't know. There may be some other conditions to fulfill beside those mentioned above, some perhaps entirely unknown.

Artificial ripening has been attempted already with more or less success, rather less than more, as far as I know. I presume that to be entirely successful it would be necessary to keep the honey at a uniform temperature the same as exists in the hive. A higher temperature would destroy the essential oils which give the honey its good taste and peculiar flavor. And it would take but a few degrees for that.—American Bee Keeper.

Every beekeeper in the West should be a subscriber for this journal. Sent a year for \$1.00. This publication is growing larger and better every month.

Prevention of Swarming.

ADRIAN GETAZ, KNOXVILLE, TENN.

Prevention of swarming is in most localities, or rather would be, an immense accomplishment. Almost anywhere a colony that does not swarm will, if strong enough, gather far more surplus than one which does. There are some places where the honey flow is such that a colony and its swarm will give more surplus than the colony alone if it had not swarmed. But they are scarce. And even then a judicious dividing of the colonies that could stand it, would give better results than an indiscriminate natural swarming.

Purposes of Swarming Prevention

It is unnecessary to say that the purposes are to obtain a larger surplus by keeping the largest number of bees together and avoiding the expense (to the bees) of building and filling another brood nest. I mention this because now and then somebody claims to be able to prevent swarming by some process or other which requires the withdrawing of brood and more or less bees. That it can be done I have not the least doubt; my own experience taught me that much, years ago. But that is not the object sought, because such process weakens the colonies, and what is desired is to have them as strong as possible.

Another consideration is that the object is rather prevention of increase rather than prevention of the actual issuing of the swarms. And also, what is called the swarming fever or desire of swarming must be subdued, as while it lasts but little work is done.

Causes of Swarming.

Before treating a patient the doctor must know what ails him, and before treating our swarming bees, we must know the causes of their swarming, or if not the actual causes themselves, at least the conditions under which it occurs, and remove these conditions.

One important cause is over heating

and lack of ventilation. Both usually go together. In reading the California articles of Gleanings, I have often seen the pictures of whole apiaries exposed to the hot sun, single-walled hives at that, resting on the bare, dry, still hotter ground. The wonder to me is that these bees do not abscond altogether by the wholesale, whether they had any queen cells built or not. And the gathering of honey must suffer. It must be impossible for the bees to work in hives exposed to such temperature except early in the morning and perhaps late in the afternoon. The remedy to such a state of affairs is obvious.

Not Enough Eggs Laid.

The other causes are:

1st—Not room enough for the queen to lay in.

2d—A failure in the laying powers of the queen.

The first of these two causes is usually expressed by saying "not room enough for the queen to lay in or for the bees to put in the honey." That's right and yet it is the same thing for when there is not room enough for the honey the bees deposit it or as much of it as they can in the broodnest and thus encroach on the laying space.

By room we must understand empty comb already built. An empty space cannot be available to lay or deposit the honey until combs are built therein.

The lack of empty combs and the failure of the queen constitute really the same cause of swarming, viz: not enough eggs laid.

Before going any further I wish to say that in my locality the prevention of swarming, or rather increase, is of the utmost importance and that during five or six years, I experimented with all the known and unknown processes and methods imaginable.

As long as the nurse bees have all the brood to feed that they can attend to, they will not build queen cells, but as soon as there is only an insufficient amount of brood to con-

sume all the food they can prepare, queen cells are started and queens raised. And usually swarming follows.

It is hardly necessary to say that all this presuppose a large number of nurse or young bees and a honey flow. Without a flow no food or but little could be prepared.

This being the case, two means of preventing a discrepancy between the number of young bees and the amount of brood to feed or the quantity of eggs laid, present themselves.

1st. Abstracting a portion of the nurse or young bees.

2d. Giving more space to the queen to lay and replacing her if she happens to be too old or otherwise failing in her egg laying.

The second condition is easily fulfilled when working for extracted honey. All that is needed is to furnish plenty of empty combs both in the brood nest and in the supers. The Dadant, by doing this, and also seeing that their hives are properly shaded and ventilated, have only four or five swarms out of a hundred colonies. And these are nearly all caused by failing queens being superseded. It follows that if the queens were replaced by the apiarist before they get too old, the number of swarms would be insignificant.

Working for Comb Honey.

But when we come to work for comb honey we are confronted by entirely different conditions. We cannot give empty combs in the supers, the best we can do is to furnish full sheets of foundation in the sections.

Then when the honey flow comes there is no room to put it. It takes two or three days for the secretion of wax to start, and several more days elapse until there is enough comb built to hold anything like an amount of honey.

During that time the bees cram all the honey they can in the brood nest, crowd the queen out, start queen cells and finally swarm.

Here you are.

Much can be done in the way of

palliatives. Seeing that the proper protection of supers and brood nest against too much or not enough heat are provided, putting the supers on in time, and above all, having young queens, go a long way toward preventing swarming, but do not suppress it entirely. A good deal depends on the locality. The worse places are those where the first honey flow (if there is more than one) opens suddenly and is very heavy.

Requeening.

Lately a great deal has been said about brushed swarms. It is claimed that by turning gradually the old hive and properly manipulating, the whole force of bees can be thrown in the swarm on the old stand. That may be, but even then, there is a new brood nest to be built, and the work honey, and time spent thus would be more profitable in the supers.

In my locality at least there is nothing better than caging the queens or requeening. I have so far used the last process in preference, but I may change definitely to the other after all. With one or several large apiaries and a locality where a considerable proportion of the colonies are likely to swarm, I would cage the queens throughout a little before the swarming time. The cage should be placed in the cluster of bees. The queens are then well cared for. Furthermore, the bees are likely to work better than when entirely deprived of the queen. In due time, the queen cells are cut out, and the queens are released a few days later. The condition of success is to not release the queens until the colony has been at least four days without unsealed brood.

Exactly how it works, I could not tell positively. I think it is this way. During these four days or more without unsealed brood, the young bees having no brood to feed, take to the field, and become actually field bees notwithstanding their age or rather "youthfulness," if we can coin such a word. Later on, when the queen be-

gins to lay again, the excess of nurse bees has thus ceased to exist and is not likely to occur until the swarming season, or even the honey flow, is over, and swarming out of question. It is immaterial if the same or another queen is given; it does not make a particle of difference. Dr. Miller here and Gravenhorst in Germany say that it does. That bees allowed to requeen will not swarm again, but if a strange queen is given them they will. I presume that they gave the strange queens too soon, not knowing the condition mentioned above. I would like Dr. Miller to try again giving due attention to that condition.

The requeening is done about the same way. The old queen is removed and the bees are allowed to requeen. It is best to do it only when good queen cells are already present, or when the swarm has already issued and is returned to the parent hive. The cells started only after the queen is removed are liable to give inferior queen. Furthermore, the colony is a too long time without a laying queen and thereby too much weakened.

My two apiaries are not very large. Furthermore, the locality is not favorable to much swarming. Taking the average of several years, only one colony out of ten swarms. So, I put queen trays on all, and requeen only those which actually swarm. It is far less work than treating all. And those that do not swarm do much better than if they had been disturbed.

Foul Brood In Fresno Co. Cal.

Jesse J. Bowen, Bee Inspector of Fresno county, California, makes the following report upon the condition of bees to the board of supervisors:

"I find the bees badly diseased, and if not checked will ruin the bee industry in the county. I have condemned 124 hives this month and the owners themselves condemned them, and were ready to burn them. In an apiary at Selma one hive is left out of thirty-five, to tell the tale. In another there are three hives left and if they

catch the disease they must go. Just think of fifty-four hives, all full of bees and honey, stacked up three feet wide, six high and six long, and you have the lot that were destroyed last night, a lot that the owners said cost them \$250. Year before last he sold over thirty tons of honey.

"If you gentlemen will give me your support and stand by me I will destroy every vestige of foul brood that I find as long as I am bee inspector."

This is not a very bright matter, to judge from the report, but we trust that the work of cleaning up what we believe is foul-brood until, as the inspector says, the last vestige of it is cleaned up forever.

Next National Convention.

For years Texas has been asking that the National Bee-Keepers' Association hold its convention within her borders, but there has always seemed to be some reason why the meeting should be elsewhere. There is now no reason why it should not be held in Texas this year, if it is ever to be held there. Texas is the largest state in the Union, and stands at least second, if not first, in honey production, while she has a good list of members in the National Association. Considering all of these facts, the executive committee has decided upon San Antonio as the place for holding the next convention. The exact date has not yet been decided upon, but it will probably be in the latter part of October, after the busy season is over with the bees, and the weather is comfortable, even in the South, and when cheap excursion rates can be secured.

W. Z. HUTCHINSON, Secretary.

A copy of the 4th annual report of the Illinois Beekeepers' Ass'n. has just reached our desk. The book contains 192 pages, a copy of which may be had by sending 15 cents to the secretary, J. A. Stone, R. F. D. 4, Springfield, Ill. It is easily worth ten times that amount to any one interested in apiculture.

Western Bee Journal.

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EDITORIAL.

California will go on record this year as having harvested one of the heaviest crops of honey yet produced. That is a strong statement, and we know that some beekeepers will say that in publishing this item we are doing them an injury. If those who produce honey will only watch matters they will find that the buyers know as well, or even better, than the beekeepers just how much of a crop of honey there will be, where the bulk will be produced, and will know far in advance what every beekeeper will have for sale. These buyers

make it their business to keep posted, and if there is a beekeeper who thinks he can keep this information from the buyers, we have to say that it is time for him to wake up. Where the beekeeper keeps tab only on his own locality (which is all he can expect to do in that regard), the honey buyer keeps tab on the whole country. We might as well state the facts and be honest in the matter. The buyer can fool the producer, but the producer cannot fool the buyer.

The new officers elected for the National Association are as follows, according to a report sent out by W. F. Marks, Chairman of the Board of Directors:

President, J. H. Harris.

Vice-President, C. P. Dadant.

Secretary, W. Z. Hutchinson.

General Manager, N. E. France.

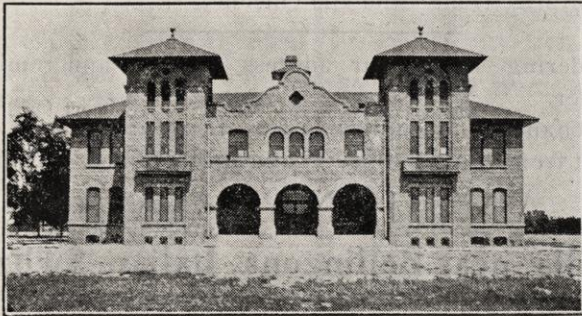
E. Whitcomb was re-elected a director and succeeds himself; R. L. Taylor succeeds W. Z. Hutchinson as director; Udo Topperwien succeeds himself.

While the above is not the ticket advocated by the WESTERN BEE JOURNAL before the election, we are pleased to state that wise selections were certainly made. No better set of officers could have been chosen.

We want more beekeepers in the west to get in the habit of writing for the bee journals. It will be noticed, in looking over the various bee papers that nearly every writer on topics pertaining to apiculture is a resident in the eastern states. The men conducting the largest apiaries in the world are in nearly every instance located in the west.

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