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VOL. III.

JUNE, 1881.

NO. 6.

THE
BEE-KEEPERS'
INSTRUCTOR.



Webster Thomas, Editor.

CONTENTS.

Comb Foundation for Boxes.....	465	Review No. 2.....	473
Winter of 1880-81.....	466	Rocky Mountain Honey Bees and Their Care. No. 5.....	475
What I Did.....	466	On the Protection of Certain Said- to-be Bee Killing Birds.....	476
Swarming.....	467	Question Box.....	477
Bees Promise Well.....	468	Editor's Corner.....	477
Marketing Honey.....	469	Honey and Beeswax Markets, Ad- vertisements, etc.....	480
Wintering Bees.-Queen Rearing.....	471		
Lizzie Cotton Again.-Description of a Bee House.....	472		

THE Bee-Keepers' Instructor.

VOL. III.

ADELPHI, OHIO, JUNE, 1881.

No. 6.

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Our Contributors.

For the INSTRUCTOR.]

Comb Foundation for Boxes.

JAMES HEDDON.

As promised I will give you my ideas about foundation for surplus boxes:

There has been considerable said by some of our experienced producers against the use of foundation for surplus combs, for market. I was one to feel anxiety about, and caution others against, its indiscriminate use, but having used it since its first advent, and spent many hours and pounds of wax in experimenting, I do not have any fears in using it in surplus boxes in full-sized sheets, if it is properly made. I will now tell you *why* I have no fears that its use will damage the market demand for our commodity:

Since the advent of extracted honey many people have taken a fancy to chewing wax, so where a poorer article of foundation is used it will suit many. I also claim this: If foundation is so made that the base is thin, the lines will be drawn out to the same thickness as the sides of natural cells, in which case not one person in ten thousand can tell that any foundation at all was used. Now, I wish to ask every reader who has had any experience in eating honey made upon foundation, if he has ever detected any noticeable difference between natural and artificial comb, except in the septum? My experience here in my apiaries is that bees *always* draw out the side walls to the same thickness as natural comb; but although they sometimes draw out the base, or septum, they can not be depended upon to do so.

We have machines made for the special purpose of manufacturing foundation for surplus boxes, (one of which I have

lately used. I am also using a mill made for the express manufacture of heavy foundation. Of the two I prefer to make my foundation for surplus boxes on the last named mill, and this is why, and how I do it: I screw the rolls together until they so nearly touch as to make a very thin base, and then use very thin sheets (8 to 10 square feet to the lb.) and when we pass them through the mill we have a foundation with very thin base, and a line that is *not hard pressed*, as the cuts between the dies being deeper than the thin sheets can fill, it has no tendency to pack. It seems reasonable to me that bees will work much faster upon foundation thus made, and although I have never tried this foundation I have a report from an experienced bee-keeper who has, and a man whose judgement and integrity I respect very highly, and he says the difference is no small one in favor of foundation with "soft lines."

The quickest, cheapest, cleanest and safest method of fastening foundation to the tops of section boxes or brood frames is the mashing down plan. This we have always done with a putty knife, but I suppose the Parker Comb Foundation Fastener is a better tool to accomplish the same purpose.

One important point to be observed in the use of comb foundation is not to publish broad-cast the fact that you use any such article for *surplus* honey. I eat it, I chew the foundation for gum, I like it; and as long as consumers do not know that they are eating anything made by their brother man, but suppose that "bugs" did it all, and can not in any way discover the difference, and it has no ill effect upon the system, what is there wrong in its use, morally or otherwise? I like to talk to a man's reason, and to hide nothing; but to his whims and superstitions, I believe in a politic course. I have sold surplus honey made on full sheets of foundation here in my home

Notes

market for three years, and as I never exhibit the foundation I never heard but one word about it in all that time. Hundreds of customers bought it and bought again. I deal with their *experience*. If I had exhibited the foundation I might have had their fancies and vague theories to combat. We know our business better than they do, and we propose to do by them not only as well as we ask them to do by us, but as well as *we do by ourselves*. I am always open to conviction, and always mean to be; but at the present writing I have not the slightest idea of ever hiving a swarm on other than full sheets of comb foundation (securely wired) throughout the brood chamber, nor of having a surplus comb built, other than on full sheets of properly made foundation.

I further *believe* that the man who does otherwise knows just that much less about profitable production of honey than I do. Time, however, the great corrector of opinions, will either bear me out or correct me in my judgement.

Dowagiac, Mich., May 24, 1881.

For the INSTRUCTOR.]

Winter of 1880-81.

E. A. GASTMAN.

About the 25th of November last I had 42 colonies of bees in fairly good condition. The weather had turned suddenly cold about the 10th of the month, and I had waited for a "warm spell" before making a final disposition of them for the winter. On the 25th I put 39 colonies into a dark, dry cellar, where they remained until the 28th of Feb. The other 12 were left on summer stands, but previous to this time had been packed for winter in a manner that will be presently described.

In order to clearly understand the condition of affairs, it is necessary to give a short description of my hives, of which there were three styles: Four used the regular Langstroth frame, one being the Root simplicity; twelve were Langstroth hives, with the frames running across the hive instead of lengthways, as is usual. There were twelve frames, 10 $\frac{3}{4}$ inches deep and 10 $\frac{3}{4}$ wide, in each of these hives, which it will be noticed are essentially the "Modest" hive, as made by J. Oatman & Son, Dundee, Ill. The remaining 24 hives had 10 frames each, which were 12 $\frac{1}{2}$

inches deep and 10 $\frac{3}{4}$ wide. These frames were all "closed top" bars. All are inside measurements.

Of those wintered on the summer stands, four were Modest hives, and the remaining eight were the same kind as the twenty-four. They were prepared by taking out all of the frames but five or six, and then putting either a chaff cushion on each side, or else a common division board, and then filling the space between it and the end of the hive with chaff. A piece of carpet was put over the top of the frames, and this was covered with as much chaff as could be made to stay upon it. I forgot to say that three of the hives were placed in boxes large enough to allow a filling of chaff around the whole hive, and from these no frames were taken. *Not a colony of these 12 was lost*, and all are in good healthy condition at this writing.

Those taken to the cellar were put there just as they came from the summer stands, without any packing. Of these, five died. One of them starved, and was dead when the bees were removed to summer stands Feb. 28. The others died within two weeks after, evidently from dysentery. About four others were seriously weakened from the same cause, but I believe they will come through all right.

Decatur, Ill., April 15, 1881.

P. S. Since writing the above, four more colonies (those attacked with dysentery) have "gone the way of all the earth." Have not lost a colony yet out of those wintered on summer stands and surrounded by chaff. E. A. G.

May 9.

For the INSTRUCTOR.]

What I Did.

A. GRAFFIS.

Spring is here, and once more we hear the hum of the busy bee, to cheer us up after the long and dreary winter that is just past, although the mortality among them has been so great that they are scarce and far between. Nearly all the bees here died, owing, I suppose, to the long, cold winter, bad honey and lack of protection. They were confined from the 5th of Dec. till the 26th of Feb., twelve weeks, without a fly. They worked on fruit in the fall until it got so cold they had to quit; this uncapped honey (?) was

see A. B. of when he wrote of would use it and write

not thrown out, and consequently they went into winter quarters with bad stores. Those in box hives, where the hives were large, wintered best. The forepart of last season was a very poor one, there being no white clover of any account; the after part was better, wild flowers being plenty. What honey my bees got to winter on they got in the fall, but altho' some of them were strong they never gave me one pound of surplus honey.

I will now tell you "what I did." I hate to do so, but "open confession is good for the soul," and therefore I will confess: In the summer my bees began to swarm, and I went to raising queens so I could divide them, and did not heed the injunction to "go slow." I had 9 to begin with, and divided them until I had 27. This spring I have 3 of them living and 24 dead. One of the three is an old stand that I did not take a bee from; another I raised my queens from, and the third is one of the last swarms I made. Out of the 24 that died only 2 starved, the rest leaving honey. Some of the hives I packed with chaff, but they died just like the rest. One thing I do know, I will be rid of the moth. I use the Mitchell hive.

Now, if any other bee man did worse than I, let me know it. If the remainder of my bees do well I will write to you again in the future. I like the INSTRUCTOR very much.

Bremen, O., April 27, 1881.

Looking at the matter from one standpoint, Friend Graffis, your loss does seem to have been rather heavy; and yet, comparing it with the losses sustained by hundreds of other bee-keepers the past winter, you may congratulate yourself upon having even 3 stands left. Your experience seems to have a very "big" moral in it for those bee-keepers who are always so anxious to increase their bees that they divide them in the spring just about the time they are strong enough to gather honey in abundance, and as a consequence get no honey, and generally wind up the business without any bees. If there is one piece of advice more than another that we wish could be printed in letters of gold, and kept constantly

before the eyes of every bee-keeper, it is contained in these few words: "KEEP ONLY STRONG COLONIES." This may be said to be the whole foundation of successful bee-keeping, for without strong colonies neither honey, increase or anything else, except disappointment, may be expected.

Are we to understand from your remarks, Friend Graffis, that you expect the hive you use to keep out the moths? If so, we think you will be greatly disappointed, for no hive ever yet invented will keep out moths, unless it keeps out the bees also, patent moth-trap men to the contrary notwithstanding. The only effectual moth-trap that we have ever heard of is a good strong colony of Italian bees, and with such "traps" you need have no fear of the moths. They are self-acting too, and you don't have to go around and manipulate 'em every few days.

Bee-Keepers' Guide.]

Swarming.

G. W. NEIHARDT.

"Never set a hen until she is ready," is as applicable to swarming bees as it is to setting hens. Never divide your bees till they are ready, nor delay swarming them when they are ready, as much valuable time is lost by waiting, in which neither honey is stored nor brood increased. When all the cells in a hive are occupied by either honey or brood and the swarm is well stocked with worker bees, and honey is being gathered rapidly, I consider it safe to divide them. To do this I place the empty hive on the old stand, shake from the combs of the old colony a swarm of bees with the queen, in front of the empty one, which they will enter as readily as in hiving a natural swarm. I now place the old colony with all its contents, comb, brood and honey, with a share of the bees, on a new stand. In ten days this stock may again be divided, by putting half of the contents into a new hive and setting the hives some distance apart, the one to the right and the other to the left of the old stand.

Each of these hives must have one or more queen cells. So far the increase is safe and preferable to second swarms put into empty hives. Should good honey weather continue, or feeding be relied on in case of failure in the natural supply, the latter may be again divided in two days, in like manner as before, provided each part gets a queen cell or queen. These latter are now nucleus swarms and should be treated as such. Nucleus swarms are nearly always a success with practical apiarists. They make them early and aid them judiciously. Bee-keepers who do not give some extra care to such stocks had better rest satisfied with one or two divisions of a colony, for the season. In artificial increase of colonies, queens or queen cells should be utilized to advantage, as much time is lost in awaiting the raising of a queen, in which there is a constant loss in bees with no adequate return for the time lost. The normal condition of a stock of bees is one with a fertile queen, and the sooner every stock is put into its normal state the more prosperous and profitable it will be. The late spring and subsequent drouth has kept bees back very much. No swarms here yet, and not much honey being gathered. It looks very doubtful at present whether we shall be able to increase our bees, so as to fill up our empty hives in which bees died last winter.

Orland, Ind.

For the INSTRUCTOR.]

Bees Promise Well.

J. KLINGER.

Now that the winter is over, and the bees are busy at work on the elm, maple, etc., we are more encouraged to look after them, although the number of empty, desolate hives does seem rather formidable. But the colonies left seem to go to work with a will. For sometime they visited my green-house as soon as they began to fly, but when the elm and maple pushed out their buds they left the green-house.

Although they are busy on the elm and maple, they are not slow to find their way into hives where there is any honey left, even if there are plenty of dead bees, as they are not so sensitive about a bad odor, when they can get honey, as many of us might suppose who are acquainted with their otherwise

cleanly habits. I still have some hives with the honey left in the combs, and this evening seeing bees coming in and going out quite late, I watched them, and found that they visited one of these hives that by some means had the cover raised a little at one corner, which allowed them to enter. I had more comb honey left than I could put in the hives that had bees, and concluded that as they were all so full, I could divide them at an early day and have plenty of honey for the new colonies. So I closed the hives that have honey in them. I think that all over the country bee-keepers are similarly situated, and bees will breed rapidly; and then, as there has been snow on the ground for so long a time this winter, the white clover has been well protected and will bloom early, considering the otherwise backward spring.

With the loss of 13 colonies out of 17, I am still of the opinion that bees in good condition when packed away for winter on their summer stands, do not freeze. If, however, they are too damp, or there are too few bees, they may freeze. I agree with Mr. Doolittle in this respect. Rev. Henry's straw shed was no doubt a good thing, because it kept his bees dry, and when dry they will not freeze. The dampness, I think, was in part the cause of my losing my bees, although several of my colonies starved. I set the hives within an inch of the ground, and for a long and tedious winter the bees had no opportunity to fly and void their feces, and were therefore compelled to daub the combs. The dampness exerted a baneful influence, no doubt, and hence the disastrous results. Upper Sandusky, O., April 26, '81.

Your loss, Friend Klinger, has been pretty heavy, but from the way you are commencing, we shall expect you and your bees, working jointly, to fully repair damages the coming season. In regard to bees freezing to death, they certainly will not freeze until after they are dead, for when they are killed by the cold it is long before the temperature of the cluster falls to the freezing point. We are fully satisfied that a large colony or cluster of bees will endure a great deal of cold before perishing; but that they do perish, and that thousands

of colonies did so perish during the past severe winter, we have not the shadow of a doubt.

Read before the N. E. Convention.]

Marketing Honey.

GEORGE W. HOUSE.

In writing upon this subject, I fully realize the difficulties of the task before me, and also the differences of opinion that exist on this interesting subject, and one that is of such vast importance to the honey producer of to-day.

We are yet in the infancy of this enterprise, and time will doubtless reveal many changes and improvements where now we think we have attained perfection. Of course practical bee-keepers will employ all their energies to keep up with the times, and give their patrons the benefit of new developments as soon as they are proved to be improvements. We should ascertain what the market demands, and then diligently apply ourselves to the work, in order to reap the reward.

We talk of supply and demand; of overstocking the markets and overstocking the land. But in solving the problem of "marketing," man's inventive genius is called upon to provide the necessary elements, whereby the desired results may be attained, without increased expense to the consumers, or decreased profits to the producer. This is a practical age, and requires practical inventions, to be used in the race for the "mighty dollar."

There need be no fear of overstocking the market. Honey is being used by many manufacturers in the liquid form, and its demand is increasing throughout the land. Honey in the comb is finding its way to the tables of thousands of families throughout all Europe, where until recently it was never seen. Thus the question of overstocking the market is nearly settled.

All honor to the Messrs. Thurber, and their representatives in Europe, for their untiring energies in this grand undertaking. There are but few of us that realize the benefits of the exertions put forth by this great firm in finding a market for our products. Their undertaking has been crowned with success, and to them we owe our sincere thanks, if nothing more.

The markets of the world are open to our products, and it is now our duty to see that these markets are not ruined through any fault or neglect on the part of the American producer. We should see that American honey maintains the enviable reputation it has justly gained. We must have united action looking toward the prevention of adulteration, and we must also have *co-operation* in marketing it, to produce the most satisfactory results. We have seen what wonderful results have been accomplished by associate action, and by a combination of interests. The great enterprises of to-day, that are astonishing in their magnitude, are the results of associated effort, and this is destined to revolutionize the business operations of the world. We have seen what wonderful results have been accomplished by the associated system of dairymen. What unity of action has done for dairying and other branches of industry, it may also accomplish for apiculture. Association and unity of action are the great mainsprings of power and progress in the world. I am pleased to know that the bee-keepers of this country are awakening to this principle in marketing their products.

While in New York city last October, I devoted one whole day to investigating the honey market, and I must say that I was completely disgusted with the workings thereof. Not being personally acquainted with more than two of the firms handling honey, I had a splendid opportunity to investigate the facilities and the workings of many houses, by withholding my name and pleading ignorance. The honey of some of our *leading apiarists* was found in several different commission houses, and one apiarist in particular, who has probably written and said more upon this subject of "marketing honey," than any other one person, consigned his honey to more than one commission house, and the honey was not put up in a very marketable condition at that; the edges of the boxes were covered with propolis, and evidently no attempt had been made to remove it. One commission house sold this man's white honey for 12 cents, while another house was holding the same man's honey at 18 cts.

One of the four honey houses in New York informed me that they received two-thirds of all the honey sent to that market. The proprietor of another house told me that he handled the most of the honey sent on commission to that city.

Of course I saw their stock of honey, and truthfully say that both houses combined do not sell one-fourth the amount of honey sold by either of the other two houses. These men misrepresented their business, and if they misrepresented to me, why wouldn't they do the same to all other producers.

Then there are other commission men who receive now and then a small consignment of honey, and in almost every instance you will find that honey setting outside the door begging for a sale. After seeing all this and a great deal more, I can say without fear of successful contradiction, that at present there are but two firms in New York that have the facilities of handling our products, H. K. & F. B. Thurber & Co., and D. W. Quinby. Undoubtedly there is not another firm in this country that can place our honey on the markets of Europe to so good an advantage as can the Messrs. Thurber, while Mr. Quinby, who has been in the business for many years, and has many customers, can place honey to good advantage and satisfactorily to the consigner. Both these firms are making a specialty of our products, and they are the only ones. Go to New York with your honey; see where it is destined; look over the field before you; and I will venture to say, you will corroborate all I have said.

Such being the case what are we to do? We must have unity of action. Let us concentrate what honey we put on that market by sending to these two houses. By so doing our honey will command a higher price, sell faster, and thereby insure us quicker and more satisfactory returns. What will apply to the New York market will hold good for any of our markets. We must concentrate our honey, and the quicker we do this, the sooner we shall be able to sell our products for cash.

I will venture here to present another subject of great importance, and one that needs the co-operative effort of every apiarist: "Statistics of the aggregate production of both comb and extracted honey." With united action this can be accomplished. I would suggest that this Association petition our National Society, praying that the president thereof shall appoint reliable and willing vice presidents in each and every State in the Union, whose duty shall be to demand of each and every secretary of the different associations within his State to collect

the correct statistics of the yield within his territory; to report to the vice president, who in turn shall report to the secretary of the National Society, and he be required to cause the same to be published in each of the bee journals no later than the first of September. Every beekeeper in making up his report should be very careful not to overestimate his yield. In the past this has worked injury to our markets, many bee-keepers making a fictitious and exaggerated report for fear that some neighboring apiarist may lead them in the amount of honey produced. This is all wrong, and I trust we shall soon see the end. Remember that honey buyers keep their eyes upon all reports regarding the amount of honey produced in the country. That from these reports they fix the price to be paid, and when we go to sell our honey we are compelled to face the reports. When we are able to furnish correct statistics then we shall see the benefit.

Our larger markets are mostly supplied by the larger producers or specialists, while our local or smaller markets are left to the amateur or novice. To control these lesser lights will be hard work, but as long as they keep out of the larger markets they will do no great injury. They will be helping to increase the consumption. As soon as we get to a basis of buying and selling, speculators will control these small lots. Our markets are also much injured by placing our products upon them in an unmarketable shape. Honey in the comb should be placed upon the market so as to call the attention, and tempt the consumer to purchase. To this end we should put up our comb honey in single comb sections, the combs being straight and evenly built and completely capped over. In regard to size of boxes the demand seems to be settling down to about three sizes, viz: 4x4, 5x5 and 5x6 inches. In glassing we should have the glass nicely cleaned and put on in good shape, being careful to first remove all propolis or wax adhering thereto. In grading and crating the apiarist should give his personal attention, that he may be positive as to details should any question arise involving this part of the work. In grading it is well to make two grades white and two grades dark honey, putting all straight and perfect combs in the first grade, while those that are stained and unevenly-built combs and not quite capped over should be put in grade No. 2. In dark honey we fre-

quently have combs that are from $\frac{3}{4}$ up white, being finished with dark honey. This should be graded as dark No 1, and all remaining combs should be classed as buckwheat. In crating, use only neat white crates holding 12 boxes, or if the boxes are small use crates weighing from 20 to 25 pounds net. The honey must not be veneered, and the crates should weigh even pounds, *i. e.*, no halves or quarter pounds. We cannot be too particular in having our boxes and crates neatly made and placed on the market free from all dirt or stain or leakage.

In shipping great care must be exercised. The crates should be placed in the car with the combs running with the car, not over six crates high, setting close together and securely fastened at the side and end.

Extracted honey is now classed as a staple article, therefore it is best to ship in bulk or barrels. But if designed for the retail trade it should be put up in small packages, such as small tin pails, or pint or quart glass fruit jars—something that can be used after the honey is consumed.

Fayetteville, N. Y.

For the INSTRUCTOR.]

Wintering Bees.—Queen Rearing.

DANIEL KEPLER.

I placed 98 weak colonies in the cellar November 5th, about one-half on natural stores, the balance on syrup made from granulated sugar. I took them out of the cellar, and placed them on the summer stands, March 25th. They were then in fair condition, but somewhat weakened by long confinement. They had partial flights for five days the forepart of April; and have, since being removed from the cellar, withstood nearly zero weather (the thermometer being part of the time only 8 degrees above zero), and a ten day's gale of wind and snow. When removed from cellar a few were distended with dysentery, and had considerable patches of brood in all stages of development. We have had over two weeks of such bad weather since taking them from the cellar that they could not fly, that I was unable to examine or feed them with safety. Not having made a thorough examination on taking them out, I found on recently examining them that several colonies were in a starv-

ing condition, and three were queenless; so that my 98 colonies are now reduced to 93. I lost one colony in February by trying the experiment of feeding honey that bees died on two winters ago.

The unusually long and severe winter, commencing early and continuing late, following as it did a summer that was so unfavorable for the secreting of honey, could not be otherwise than disastrous to bee-keepers. Black bees were actually starving and falling to the bottom of the hives in the months of June and July last, in my neighborhood.

For queen rearing I have boxes 1 foot wide, 10 inches deep, and long enough to take in my Langstroth frames. I place a division board through the center, and form two nuclei in one box the size of the lower story of a Langstroth hive. I leave an entrance space for one nucleus at one end of the hive, and at the other end for the other nucleus. I spring my bees in such hives if weak enough to go in them. In this way I combine the heat of the two small colonies in one box with only a half-inch, or thinner, division board between them. I place my bees on the S. E. side of a wind break (my house) and can thus winter and spring very small colonies on one-half the amount of stores it usually takes for large ones. I would not, however, bother with such colonies, except where I have fine young queens that I wish to winter over.

I would like to ask any reader of the INSTRUCTOR if foul brood, or the germs of it, can be transmitted in foundation. I want to use a large quantity the coming season, and fear trouble if it can be transmitted in foundation made from infected combs.

I can testify to the great value of sweet clover (*Melilotus Alba*) as a honey plant. Will write further concerning it if desired by many of your readers. After four years experience I can say that the Simpson honey plant will bear no comparison with it.

From the numbers of the INSTRUCTOR received I see that neither the editor, his wife or his son, are interested in the manufacture or sale of bee-keepers' supplies. I can therefore give it my support.

Napoleon, O., April 17, 1881.

We think, Friend Kepler, that you have been remarkably successful in wintering your bees, taking into consideration the great losses sustained all over the country, espec

ially as your bees were placed in winter quarters in a weak condition. We wish it was in our power to give you the information you seek for in reference to comb foundation made from infected combs, but so far as we know, nothing of a definite character is known on this point. And while we think it more than likely that the heat necessary to prepare the wax, and convert it into foundation, would be apt to destroy the germs of foul brood, we would not use foundation made from combs that we knew to be so infected. The disease of foul brood is so to be dreaded that no one should run any risk with it, where it is possible to avoid it. You seem, Friend Kepler, to have taken your bees from the cellar much earlier than most bee men recommend, and according to the generally received opinion you ran a very great risk. For this reason we would be pleased to have another short report from you as to whether your bees dwindled badly or not after placing them on their summer stands. We also hope you will favor us with an article on Sweet Clover, as we know that our readers will prize any practical information you may be able to give them, relative to this, said to be, valuable honey plant.

For the INSTRUCTOR.]

Lizzie Cotton Again.—Description of a Bee House.

C. R. RICHARDSON.

One year ago the past winter I read Lizzie Cotton's advertisement in one of our local papers, and being green I tho't I saw a big thing in her hive, and after some correspondence I sent her \$4.00 for the *clap-trap* concern. [In the meantime I had bought four colonies of bees in box hives.] When the specifications for building the hives came to hand, I was unable to find any one who could understand the plan so as to be able to construct the hive, and for this reason my bees are in

the box hives yet, with the exception of one swarm that died about three weeks after I bought them. I suppose the moths had something to do with it, as on dissecting the hive I found a bunch of them as big as my fist, in the center of it. Perhaps I might as well say right here that I never had anything to do with bees until I bought mine something over a year ago.

But few bees are kept about here, and these few are found in the old box hives. After Mrs. Cotton had sold me I became still more interested, and fully satisfied that there was a better method to handle bees, so I sent for Cook's Manual, the *A. B. Journal*, the *INSTRUCTOR* and *Magazine*. By reading and studying these works I think I have learned something. I have ordered hives from James Heddon with the frames to be filled with wired foundation, ready for business, as soon as it is seasonable. My increase last year was four swarms, one good one and three rather small ones. I sold one last fall, and one that came out rather late died, so it leaves me five that are all right, three of which I call good ones, to start out with this spring. I got but very little honey, and it was all from one colony that did not swarm. This colony when put into winter quarters was very rich in stores, not having, we believe, less than 50 lbs. of honey. I built me a bee house in the fall 12 feet long by 3 feet wide inside, and put my hives in the center of it and packed all around with dry planer shavings, with a tube at the entrance of each hive for the bees to pass in and out, and I think they have wintered nicely.

I have made some inquiry as to how bees have wintered in this neighborhood, and have heard of but slight losses, even where they were left on their summer stands. From what I read I think bees wintered better in a hive with a brood chamber that is nearly square, than in an L. hive. Do you think it is so? What do you think of the Doolittle Hive?

Hollis, N. H., May 1, 1881.

We think you have done exceedingly well for a beginner, Friend Richardson, if Lizzie did get the advantage of you, like she (or he) has done with a great many others. Your bee house, to us, is rather a novel arrangement, and yet we do not see why it ought not to answer an excellent purpose for cold lati-

tudes. Would like to hear further as to the condition you find your bees in when you come to transfer them. As to the advantages of the square frame over the L. we are not prepared to say. We prefer a frame about a foot square, but believe the L. frame gives pretty general satisfaction where used, especially in the warmer latitudes. We are not personally acquainted with the Doolittle Hive, but have no doubt but what it is good, as Mr. Doolittle is a man of large experience. Many hives are good, and you should confine yourself to one style of frame, so that they will be interchangeable.

For the INSTRUCTOR.]

Review No. 2.

GEORGE W. HOUSE.

As the April number of the INSTRUCTOR nearly meets our views, and owing to sickness and death in the family at the time that number was issued, we will pass one month.

Upon opening the May number of the INSTRUCTOR the first to call our attention is an article from friend Moon. In speaking of the origin of dysentery he says: "Some tell us that it is the cold weather, while others say that the great destroyer is bad food. The latter was our first opinion, and is our opinion still." Is bad food the cause of dysentery? I say no. But you may ask, if bad food is not the cause what are the causes? I will say, I do not know positively, but it is my opinion that it is caused by confinement. Dysentery can be produced at any season of the year by confinement a sufficient length of time. In winter I assign a cold, damp atmosphere as the cause, as it causes confinement of the most severe kind. Why some colonies are attacked with dysentery and others not, I think is owing to the various conditions found in the different hives. If it is bad food that is the cause, why do some colonies have dysentery, while others in the same apiary show no signs of it? I think most bee-keepers will agree with me on one point: That dysentery is generally confined to those colonies that are not strong enough in

numbers to keep up the desired warmth, so as to enable a portion of the cluster to move about and carry in the honey.

Again Mr. M. says: "If the cold weather is the cause of it, why did not bee-keepers all over the country suffer the same losses thirty or forty years ago—or even twenty-five years ago?" Allow me to ask another question: If bad food is the cause, why did not bees suffer from dysentery twenty-five years ago? All the various kinds of fruits and honey plants were as numerous in this State then as now, and furthermore, the juices of fruits were gathered by the bees as freely then as now.

Friend M. says, "We need have no fear of losing our bees by cold." It is a fact that a large percentage of the losses in this locality were from starvation, and that, too, with plenty of honey in the hives. The cause for this was the long-protracted cold weather, as the bees could not move from one comb to another for their supplies. Hence we need have *much* fear of losing our bees by cold. We cannot agree with our editor when he says a large proportion of the mortality the past winter can be traced directly to the cause of bees gathering the juices of decayed fruits, etc. If some one can trace the mortality to such causes let them come forward and explain how they trace it. Give us solid truth, backed by practical experience, and not so much *wind*.

The foregoing will also apply to the article of Mr. J. W. Grimes, on page 451.

On page 454 Mr. S. M. Oldham says: "Sometimes it seems impossible to prevent bees from swarming, and in such cases, when they swarm they should be given a fertile queen," etc. We were ignorant enough to believe that every bee-keeper knew that the old queen goes out with the first swarm, therefore no reason for supplying the young swarm with a fertile queen, etc. It is the old hive that wants the queen.

On page 455 Mr. H. L. Jeffrey takes up the gauntlet in regard to "those queens." Well, let us see. Criticisms based on substantial facts, made in a spirit of kindness and a desire to benefit the world, are opportune and of great value. But when made merely for the purpose of "showing off" or of filling up space in an article, they tend to mislead, and are an injury to the author, the person criticised, and the public generally. Page 455 Mr. J. says: "I notice that Mr. G. W. House, in his criticisms last month, 'kind o' gins' Mr. H. Alley a free advertise-

ment, and holds him up as an example for the rest of us bee men to square our conduct by." If you wish to call it free advertising, so be it; nevertheless, it is nothing more than he is entitled to, and if we would give "honor to whom honor is due," Mr. Alley should be given a free advertisement (if you call it such) in every journal and every work on apiculture published. He is not a personal friend of mine, but, on the contrary, has said many things against me; still, I will not allow my judgement to be warped by prejudice. I referred to Mr. Alley, because our largest and most practical apiarists all over the country acknowledge that he is authority on queen breeding, and it is acknowledged that he is the best queen breeder in the world. It was he who 12 years ago knocked the prices of queens from \$8.00 down to \$2.50. For so doing he was fought by all the other queen breeders of less calibre, and all sorts of accusations were made against him. Why? Because he had devoted his entire time for many years to the queen-breeding business, and was enabled to furnish his customers with queens at one-fourth the price asked by less reliable breeders. I have seen many queens from his yards, and I can safely say that at the present time *no* man sends out a better lot of queens, even if they do get a higher price. I think Mr. J. is the man who is getting all the free advertising he can, consistently. On page 418, in speaking about those 11 queens, he says: "He got some very fine hybrids, but as the yellow ones predominated they must be all pure and all right, because they came from Jeffrey's stock, and he only keeps the best."

In speaking about the same queens Mr. Jeffrey says on page 456: "Knowing that I could rear another lot of queens in less time than to test those on hand," etc., and a little further along, "If a queen with a fair test wont fill three L. frames for me in from 7 to 10 days, or from 5 to 10 frames while testing," etc. It is evident from the above assertions that as soon as the progeny of the queens are found to be pure Italians he pronounces them tested. Such queens in one sense may be called tested, that is, as far as blood is concerned, but I would not buy them and pay \$3.00 each, for really they are not tested, and secondly, the same queens can be purchased at \$1.00 each. What I term a tested queen is one that has all the desirable qualities, such

as wintering, prolificness, honey gathering, non-swarming propensities, and the last consideration, gentleness. To test all these qualities will require at least one year, and such queens from a reliable breeder are worth all that is asked for them, providing we receive what we buy.

Page 456 Mr. J. says: "Let us suppose that Mr. House has 50 queens to sell. 10 of them keep 9 L. frames packed with brood, 15 keep 7 frames full, and the other 25 vary from 3 to 5 frames. Would he send out those 10 best at \$1.50, and the rest at the same price? Would it be fair to do so?" Let me answer the last questions first. If the 10 best queens were such as Mr. J. describes (and having the other good qualities), I should not sell them at all, only in a full colony of bees, as they would be worth more to me than they could be sold for, and secondly, I do not raise queens to sell, as I have several hundred to raise every season for my own use. Facts are stubborn things. But nevertheless Mr. J. must look at them as they *really* are. In his supposition he goes to extremes. *My* experience has shown that full 75 per cent, of the queens are good in most qualities. However, we will take his figures for the present. Then, out of the 50 queens we have 10 extra selected ones, 15 good queens, and 25 from poor to medium. Now, let us compare accounts. Suppose the reader wishes to purchase the 50 queens. If he buys the above lot it will cost as follows:

10 extra selected queens @ \$5.00.....	\$50.00
15 tested queens (so called) @ \$3.00.....	45.00
25 queens @ \$1.00.....	25.00

Thus making the 50 queens cost...\$120.00

On the other hand the reader can buy the same 50 queens from a reliable breeder, untested, but *warranted pure*, and shipped as soon as they begin laying, for \$50.00, thus making a difference of \$70.00 in favor of the latter, or dollar queens. Besides, the breeder has no chance to select the *best*, because he has not tested them. The reader can test and make his own selections, and he will not find more than two queens in the lot that prove to be poor. This is in accordance with my experience, and other large apiarists who have "no ax to grind."

Right here I will refer to the article of Mr. W. M. Egan on page 459. In speaking about queen rearing he says: "If I like her and have not sufficient orders to take her, she is rapidly built up to a

strong colony and made use of for gathering honey."

There it is again. The best queens are held back until there are no other queens to fill the orders. Will some one inform us how we can get our orders in, so as to catch those reserved ones?

Fayetteville, N. Y., June 1, 1881.

Every person, we think, should have a proper respect for the opinions of others, and it seems to us, Friend House, that you are getting rather the reverse of complimentary in your remarks about "so much wind," etc. Do you suppose that we would have written what we did upon mere suppositions, without having any proof to back it, or good reasons to believe it to be the truth? We think it is almost universally admitted that cider and fruit juices of all kinds are sure death to bees when used as their principal food during winter. A. I. Root in his *A B C of Bee Culture* gives some very conclusive evidence on this point, and if any one after reading that is still skeptical, we advise him to feed his bees some cider, and see if they will winter safely on it. We will venture to say that they will be skeptical no longer after trying the experiment. We do not claim that the largest part of the past winter's losses were owing to this cause, but we did and do claim that a large proportion of the losses can be traced to it. And we base our opinion upon the "actual experience" of many of the bee-keepers whose reports we have been receiving almost daily during the past two months. Last season—as almost every bee-keeper can testify—was not a good one for honey, and it took about all the bees could gather during the forepart of the season to keep up brood rearing, thus leaving them (especially in the center of the hive) with almost empty combs the latter part of summer. Fruit was very plentiful, and as there was scarcely any honey to

gather, the bees improved the "shining hours" by making raids on orchards and cider mills. They swarmed so thickly around the latter as to almost prevent them from being worked (even when cider was being made from sour apples), and no doubt stored away large quantities of the juice, which they consumed during the winter with disastrous results. This is from personal observation, Friend House, and not from any "wind" process, and can be corroborated by the evidence of scores of bee-keepers, if necessary. We believe in maintaining what is believed to be right and true, by all the arguments that may be brought to bear on the subject, whatever it may be, but we believe in doing so with a proper appreciation of the opinions and views of others, however much we may feel it our duty to differ from them. And we hope the time may never come when our language shall not be tempered with moderation, and we will not have the same kind, brotherly feeling for those who differ from us in opinion, as for those whose opinions are in full unison with ours.

For the INSTRUCTOR.]

Rocky Mountain Honey Bees and Their Care. No. 5.

W. M. EGAN.

It is quite a disappointment to lose a valuable queen in introducing, but if we will only take the pains we can succeed every time. A colony in a normal condition will not accept a queen, so far as known; hence, the first principle of introducing is to put the colony to which the queen is to be introduced in an abnormal condition, which will be partially accomplished by removing the old queen. Some go so far as to shake the bees off of their combs and jumble them up generally, scenting them with sweetened water, etc., but I prefer to remove the brood, as well as queen, so that they have no hope of rearing another.

A queen with a number of her own bees will be more easily introduced, but may object to do duty among strangers as long as there is a probability of existence among her own bees. Hence, the second principle is to put the queen into such a condition that she will be willing to do duty without objection, which may be accomplished by caging her for a few days with but two or three of her own bees, in the hive to which she is to be introduced. If I am correct, as soon as a colony find themselves queenless and give up the hope of regaining their queen or rearing another, they will accept any fertile queen, or one just hatched; also, that as soon as a queen finds that she can not perform her duty among her own bees she is willing to work for strangers, and do duty with them as her nature dictates.

Now, from the above we see that we can safely introduce a queen if we meet the conditions necessary, but to be more certain we should hold the queen by the wing when we release her from the cage, until we see how the bees behave towards her. If they crowd around her quietly you can safely let her go, but if they act excited, running around rapidly, you had better put her back in the cage for about a day longer.

The Peet cage is recommended very highly, and is no doubt a very successful cage for introducing; but I would put the bees and queen in an abnormal condition some time previous to fixing the cage to the comb. I would also take away all unsealed brood, as I think that will make the introducing more safe.

A friend of mind—a doctor—introduces queens by chloroforming the bees, and while they are under the influence of the chloroform he takes out the old queen and replaces her with the new one. When they come to themselves they don't know the difference, so he says.

It is pretty safe to introduce a queen to a colony that has just cast a swarm, first cutting out the queen cells; also, to an artificially-made queenless colony, whether done by taking the queen and brood out, or by taking the queen and bees out, or by making a colony from a number of different hives, a frame or two from each (bees and brood, no queen), or by taking young bees only as they cluster at the entrance or in the upper story; but perhaps the safest way of all is to buy $\frac{1}{2}$ lb. of bees with the queen, and put them on some frames of

comb containing brood ready to hatch; they can then be built up to a full colony in a very short time by adding hatching bees. I have even successfully introduced a lone queen in this way by caging a frame of brood with the queen and her escort of bees, and keeping them in a warm place until enough bees had hatched to take care of the brood; they can be placed in a hive if necessary to keep up the heat, but I had no difficulty in covering them up warm in a close room in midsummer evenings, and then I could examine them often and note progress. In a week they can be put out with the rest and built up rapidly.

S. L. City, Utah, May 30, 1881.

For the INSTRUCTOR.]

On the Protection of Certain Said-to-be Bee-Killing Birds.

L. H. PAMMEL, JR.

It is not unfrequently that we see an article in our papers advocating the killing and extirpation of certain birds of the fly-catcher species, among which is the King Bird (*Tyrannus Carolinensis*). It is said to be such an enemy to the bees that its destruction is pretty generally recommended. It is found in many of our Northern States, and being wholly insectivorous does much good in destroying flies and many other of our insect pests. We are sorry also to be forced to say that it does catch bees, though we believe not to such an extent as is generally supposed. They are at the same time very valuable in destroying other insects which are a pest to man. Their name—fly-catcher—indicates what they are, being so called because of their skill in catching insects on the wing—or fly. Let every earnest thinker examine the shape and structure of this bird and he will come to the conclusion that they are in many respects very useful. The thousands of flies and other insects which are annually destroyed by them would (were it not for them) multiply in such vast numbers that the abode of man in some parts of the earth would become intolerable. This bird does not catch bees from flowers, as has been frequently said, as it is not so constructed; besides, it is very industrious in the pursuit of its food, notwithstanding some have gone so far as to call it lazy. As far as our own observation goes we can

not call it lazy, for if it was it would not build its own nest, or protect its young, and could not be the triumphant victor that it is, of the hawk and crow, and even the eagle, causing them such continual annoyance.

From these considerations, unless they are more numerous than we have been accustomed to see them, we would be slow to recommend the death warrant.

La Crosse, Wis., June 6, 1881.

Question Box.

CONDUCTED BY.....F. L. WRIGHT,
PLAINFIELD, MICH.

1. A bee-keeper visited me recently, and among other things stated that he could pick out a queen that was reared the natural way (that is, when the cell was built while they were preparing to swarm), from among those that were reared artificially, every time. He said they were larger, lived as long again, and laid twice as many eggs as the others. Is it a fact? My informant also said that he made more than four times as much money out of his bees, from the same number of swarms, as his neighbors.

2. In what respect are they different (if they do differ), and are they any better?

3. Is melilot a perennial plant?

Syracuse, N. Y.

IGNORAMUS.

1st. It is all *bosh*. Your visitor either knew very little about bees, or had been misled by statements made in the journals by some who seek to have their bees and queens advertised in the reading columns without cost to themselves. It is *possible* that queens reared during the swarming impulse are better in *some* respects than those not so reared, but as to their being larger, more prolific, etc., *it is not a fact*. Our oldest and most successful bee-keepers do not follow this plan of raising queens, to any great extent, and surely they would if they could thereby obtain better queens.

2d. They differ from artificially raised queens in no way. A few persons who seem to know more than all other bee-keepers combined, claim as much as your visitor did, but that does not make it *so*, nevertheless. When a man claims to be so much smarter and to make so much more money than anyone else, you can set him down as a *humbug* right away.

3d. No; it is not. We must have made a mistake in writing, or else the printers could not read our copy. It is generally classed as a biennial, although

sometimes as an annual. Thanks for correcting us. Thanks are also due N. Gilman. See last INSTRUCTOR.

1. Can you inform me where and how empty combs can be kept over summer? If they can not be kept free from moths would you advise me to buy a wax extractor?

2. Are there any that will do the work well and rapidly? That is, any cheap ones.

G. CRAFT.

1st. You can keep combs through the summer by keeping careful watch over them, and giving them a thorough fumigation with sulphur occasionally. Should any moth worms appear pick them out and smoke again with the sulphur.

2d. We know nothing about any wax extractor except A. I. Root's, and that is high-priced, and very slow, indeed. L. C. Root makes an extractor of altogether different construction, and Hill, of the *Bee-Keepers' Guide*, makes a cheap one. We know nothing about either from experience. Anyone having a good thing should advertise in the INSTRUCTOR.

Editor's Corner.

We have quite a number of interesting letters that we have condensed for publication, but even then have been unable to *crowd* them in the INSTRUCTOR this month. They will appear in the July number.

It will not be so very long, now, until this year's honey crop will be offered for sale, and how it should be prepared for market is therefore a subject of prime importance to every bee-keeper. We give in this number an excellent essay on this subject, read by Geo. W. House before the late N. E. Convention, and it would certainly be to the material advantage of all bee-keepers to follow the advice given therein.

The present season here has been an exceedingly good one, so far, and we do not think that bees ever built up faster than they have this spring. The elm, maple, willow, fruit trees and locust have furnished an almost constant succession of bloom for them to work on, and white clover is now in full bloom, with the honey just "rolling in." During the latter part of May and the first few days in

June the prospect for any honey from white clover was very faint, as the weather was so dry, but we have received several fine rains during the last ten days which has helped it amazingly.

We have received a report of the North-Western Bee Union, which met at Hastings, Minn., the 17th of last month, but which came too late for publication this month. The proceedings seem to have been quite interesting, and were interspersed with a number of reports and essays on various subjects connected with bee culture. The next meeting of the Union will be held at Minneapolis, on the evening of the second day of the fair, September 6th. A cordial and general invitation is extended to the beekeepers of the State, and we can assure them that it will be of benefit to them to attend.

We again urge upon our correspondents the necessity of sending their articles in good time—not later than the 1st of each month. They can certainly send as well then as a week later, and this difference of a week in their receipt may just be the difference between publishing and not publishing them in the number for which they were intended. Those sending questions to Mr. Wright, conductor of the "Question Box," should also send them in time, not later than the 20th of each month to insure them being answered in the INSTRUCTOR for the next. Owing to the questions being sent to Mr. Wright rather late last month, the "Box" reached us a few days late, and had to go over to this month.

We have lately received from L. H. Rodgers, 75 Maiden Lane, N. Y., a printed sheet entitled "A Bird's-eye View of the English Language," which is certainly a marvel in its way. It is only 22x38 inches and yet it gives the correct spelling and meanings of 25,000 of the most commonly used words, the correct spelling and meanings of 20,000 synonymous words, a list of 2,000 words of similar pronunciation, together with their meanings, and full and complete rules for spelling, punctuating, the use of capital letters, and letter writing. It is an "awful" handy sheet to have for reference, and we wouldn't take considerable for ours. It is sold for the small sum of 25 cents, or five for \$1.00. Address as above.

The following from Mr. Geo. W. House, under date of June 6th, will be understood by our readers without any explanation from us:

"FRIEND THOMAS:—My first order with the glass manufacturers is all taken up, and last week when I forwarded an order to them they refused to send it at the same price as heretofore, notwithstanding they had agreed to furnish me with 1,000 boxes extra at the same price. But glass has gone up, and so they countermanded the order as promised. I have not secured my own glass yet, thinking I could do so at any time, but alas! I am too late, and now will have to pay for it. Please call the attention of your readers to the fact that the glass is all taken up, and that I am unable to get such prices now, as it has advanced. What orders you give out before the June number of the INSTRUCTOR I will try and fill at \$1.95 per box, in sizes 5x5, 5x6 and 5x20."

Every business man, and those who do much letter writing, should use printed letter or note heads. They not only add to the attractiveness and "business like" look of a letter, but often save time and trouble to those persons who are sometimes so "wretchedly careless" as to forget to sign their names to their letters. We can furnish a first-class quality of note heads, neatly printed to order, by mail, post-paid, at the following prices: 100, \$1.00; 200, \$1.40; 300, \$1.80; 500, \$2.50; 1,000, \$4.75. By express, recipient to pay charges, 10 cts. per hundred less. XX envelopes to match, either white or buff, with the purchaser's business card and address printed on one corner, same price as the note heads if to go by mail; by express, 15 cts. per hundred less. We can also furnish letter heads at one-fourth more than the price of the note heads, but would recommend the former to everyone in preference to the latter. They are large enough to write any ordinary letter on, and yet will go in the envelope without doubling sideways.

We also print bill heads, statements, pamphlets, blanks of every description, and all kinds of light job work, and invite correspondence from those who desire anything of the kind. We know that it will be to their advantage as well as well as ours, for them to favor us with their patronage.

If anyone desires to see the quality of the work we do, they should send for a sample of our printed note heads which we will mail free to any address. It will speak for itself.

MONTHLY MANAGEMENT.

Our instructions for June and July will be brief. The most important point, if surplus honey is desired, is to keep your colonies strong. To avoid swarming an occasional frame of honey and brood may be taken from them and their place supplied with an empty frame of comb or foundation. This plan does not always, but frequently will, if taken in time, prevent swarming. Extract if necessary, but be careful not to extract so close as to rob the brood nest. Honey gathered in the forepart of the season is almost always good and safe to winter on. For comb honey adjust your sections with the view of keeping your bees busy. Keep all white clover separate from other honey as far as possible, and be sure to remove sections as soon as they are completely sealed. In July, if basswood honey comes in, keep it by itself as much as possible. If you have any poor or feeble queens, supersede them at once; and be sure that the queens and workers have plenty of room, that they may be kept busy. Protect the hives from the sun. June and July are good months for Italianizing. If there should be any natural swarming, be sure and give the old colony a fertile queen at once, if possible. A good plan to form new colonies, and at the same time arrest swarming, is to take one frame of bees, brood, etc., from each of three or four colonies, that are full and rich in bees and stores. Good colonies can be quickly built up in this way, while the bees are at the same time storing honey rapidly.

FERTILE WORKERS.

We had a little experience last season with a fertile worker, that we will relate for the benefit of our readers:

We had a very fine, strong colony of Italians that had the misfortune to lose their queen on the 27th of July. On the 5th of August we introduced a fertile dollar queen that we had received from a queen breeder. The new queen was small, but for a short time seemed to do pretty well. The colony was very populous, and showed signs of swarming, by building a number of queen cells. This we wished to avoid, as it was too late in the season, and besides, we were running the colony for surplus honey. So we went through the hive and cut out all the queen cells, and weakened them by taking a frame of brood from them. In

four or five days afterward we repeated the operation, finding a number of cells nearly ready to cap over. This was, as well as we remember, about the middle of September. At this time we remember that there was not much brood in the hive, but the thought did not occur to us that they were about to supersede, or probably had superseded, their queen.

They stopped building cells, however, and it was soon noticeable that the colony was dwindling. But as the bees were not gathering stores, we laid it, at first, to the dearth of honey. Soon, however, we began to suspect the presence of that contemptible pest, a fertile worker. On a close examination we found eggs scattered about in the combs, both in drone and worker cells, and, in some instances, as high as four or five eggs in a cell. We were fully satisfied now, and examined the colony very closely a number of times, to try and detect the *mischief maker*, if possible, but in this we were unsuccessful. Finally, toward the close of the season, we had a spare queen, and thought we would try the experiment of introducing her to get rid of the pest. We had no very strong faith in the success of the experiment, but thought by caging her several days there might be a possibility of succeeding; so we hung her in the hive for five days, feeding her daily, and then turned her loose. The bees seemed to accept her fully (and we believe they did), but on the second day we found her dead in front of the hive. Now, the question is, which killed her—the worker bees or the apology for a queen? We believe it was the latter, as the queen will not defend herself against any but a royal antagonist, and while she would not recognize the fertile worker as such, the instinct of the latter would be to slay the royal intruder. Some time after this experiment we united the fertile worker colony with another, and by this means got rid of it. At this time, which was late in November, the drones were quite numerous, many of them being scarcely as large as worker bees, owing to their having been bred in the worker cells. Just here a question arises: Why is it that the bees will not protect a queen introduced into a colony with a fertile worker? By allowing the drones to live they recognize the abnormal condition of the colony, and yet, after (to all appearances) accepting the queen, they allow her to be killed (as we believe) by the fertile work-

er, instead of killing the miserable pest, and protecting the perfect queen. Why it is that the case is almost invariably different when the colony is united with another we do not know, unless it is that the bees of the colony that has the queen recognize the fertile worker at once, and kill her before she meets the queen. In regard to the manner in which fertile workers are produced, we believe it is by the bees starting with larva in an advanced state, in which case the would-be royal nymph is only able to use a limited supply of the royal food, which could not be supplied in such abundance as when the cell was started on the freshly hatched egg. In the case under consideration, we had cut out the queen cells until we have reason to believe that the bees must have taken larva that was nearly ready to cap over, and from this were only able to produce the drone-laying worker. We prefer this theory to the one advanced by some, that "the intense desire for the continued welfare of the colony develops their internal structure to a sufficient degree to produce eggs." We acknowledge that we have not experimented sufficiently to pretend to decide this question, but we much prefer to believe that the fertile worker is produced by larva in an advanced stage of development receiving a limited supply of royal jelly, in some way, than to believe in the "intense desire" theory.

Honey and Beeswax Markets.

REPORTED FOR THE INSTRUCTOR.

CINCINNATI, June 3.

Honey—Demand is moderate for extracted at 7@9c on arrival. No demand for comb honey, and prices nominal at 12@16c on arrival.

Beeswax—18@22c.

C. F. MUTH.

CHICAGO, June 3.

Honey—Demand for comb honey light, and prices nominal. White clover in 1 and 2 lb packages, 16@18c. Same in any sized packages, 9@15c. Dark and buckwheat, 12c. Extracted, 8@10c, according to quality.

R. A. BURNETT.

BOSTON, June 4.

Honey—Our market is perfectly dry on honey, and new would sell well. 2 lb combs, 20@22c. 1 lb combs, 25@30c.

CROCKER & BLAKE.

NEW YORK, June 4.

Honey—Best white comb, neat packages, 16@17c; fair, neat packages, 14@15c; buck-

wheat, neat packages, 10@12c. Large boxes 2c per lb less than above. Best white extracted 9@10c; buckwheat 7c.

Beeswax—Bright yellow 24½@25c.

The above prices are for large lots.

H. K. & F. B. THURBER & CO.

CLEVELAND, June 4.

Honey—At present is entirely neglected. There is a very light supply, but the fruit season just commencing, no honey is wanted. Prices will be merely nominal during June and the first half of July, and might be quoted as follows: 1 lb unglassed sections, 16@18c; 2 lb sections, 14@16c. Extracted, 12@14c.

Beeswax—20@22c.

A. C. KENDAL.

ST. LOUIS, June 3.

Honey—The market is about over here, dealers being loth to handle it in warm weather. We to-day sold a consignment of 7 packages strained honey (about 3,000 lbs) at 9c per lb, but would not advise any of our friends to send in their goods on that basis. There will not be any market of any consequence until cooler weather sets in. In sending honey here see that your barrels are well cleaned before filling, and note weight of barrel on head. When weight of barrel is not marked thereon the weight is usually estimated, in which event the purchaser generally profits.

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