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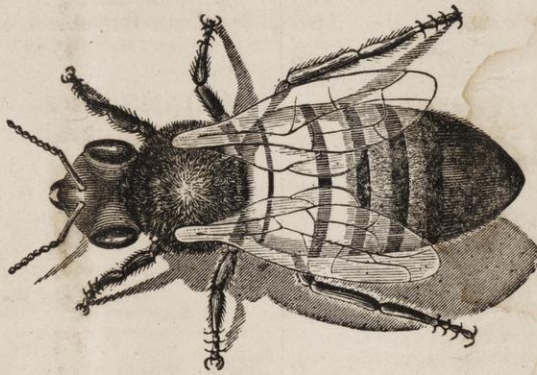
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VOL. III.

MARCH, 1881.

NO. 3.

THE BEE-KEEPERS' INSTRUCTOR.



Webster Thomas, Editor.

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THE Bee-Keepers' Instructor.

VOL. III.

ADELPHI, OHIO, MARCH, 1881.

No. 3.

Published the mid-
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W. THOMAS & SON,
Publishers and Proprietors.

{ Terms, 50c. per year,
or 30c. for 6 months.

Our Contributors.

For the INSTRUCTOR.]

Feeding Bees in Spring.—Dollar Queens.—Duplicating, etc.

H. L. JEFFREY.

Having received the December No. of the INSTRUCTOR as a specimen copy, I perused its pages with care, finding therein several items that my twelve years experience in a great measure corroborates. In the first place I will in part answer your questions to Rev. A. Henry in regard to the colonies he fed that were weak in stores. To do this I will give a little of my experience for a few years past: I have tried feeding, more or less, every spring for the last six years with good success, finding as a rule that those I had to feed turned out the best. I do not, however, use as much syrup as I did formerly, but now use some candy, which I will give the mode of making:

First take a quart of extracted honey; heat it slowly and stir in about seven lbs. of coffee A or C sugar. If this is not at hand the light brown will do very well. The quart of honey will moisten this quantity of sugar so that it will be soft and doughy. Into this paste I knead about one quart of rye flour, though corn starch is first rate. This dough I press into shallow paper boxes and turn bottom up on the top of the frames, feeding only half as much sugar syrup as I would without the dough. By this means I get my six or seven frames packed full of brood,

and get them to work in side boxes quite early, and then change them to the top as soon as more room is needed, and also put more empty boxes at the sides. By this plan I am sure they are not as apt to swarm as if left alone and not fed. When once started in the boxes there is no difficulty in keeping them there. I am convinced that the dough candy is a good thing to give stocks, even if they have plenty of honey in their combs. And when fall comes, and they have not stores enough for winter, it is not much trouble to feed sugar syrup, or to give them a slab of candy on the top of the frames to help them through the winter. When a stock is so weak in March as to cover not more than three frames, I would not feed them so as to fill up the combs, nor half fill them, but let them have about three pints, and a good supply of dough candy on top. Then tuck them up and let them alone until the syrup is nearly used up. This is the way I feed from February to May, and with excellent success.

Another point I wish to touch on is the uncertainty of getting purely mated queens, even if from a good man, unless fully tested. Friend A. F. Moon is about right when he says: "There is not one in five who purchase such queens who have reason to believe they are purely mated." Some may feel satisfied because "they are from a good man;" but such a supposition is too strong. To illustrate: In the summer of 1877 I was rearing queens, and one of my neighbors brought a black stock of bees, in a box hive, and full of drones, close to me. I had eleven queens

to mate, and of course there were chances for mis-mating; but as the queens were from first-class stocks, I soon had a purchaser who wished to know my price. I considered them valueless, but asked 75 cents each, thinking he would not take them; but he was in for a bargain, and they went. He got some very fine hybrids, but as the yellow ones predominated they must be pure and all right, because they came from Jeffrey's stock, "and he only keeps the best." Of course I kept the best because he bought the hybrids; and though they were strong, healthy, prolific queens, they were cheap trash on account of not being purely mated. It also helped to prove (in the estimation of the novice) that instead of being gentler than the natives they were really crosser. I don't wish to be understood as saying that there never was a good, cheap queen, but I don't believe that any bee-keeper is going to sell his best queens at a very low price, *for he cannot afford to.*

It seems that Friend Moon does not believe in duplicating; but I do, and he does to, "all the same," for we want a duplication of good, strong honey gathering qualities, and nothing short of this will do. By careful selection we can have it, but we must breed as the careful poultrier does, breed close and *select closer*, and raise queens like the old woman did cucumbers: "Some for the bugs, some to thin out and some to keep." In other words raise a good many, and keep picking out the best, killing all that are of inferior quality.

Woodbury, Conn., Jan., 1881.

For the INSTRUCTOR.]

In-and-In Breeding.

A. H. MARTIN.

In conversation with bee-keepers we frequently hear complaints that their bees are lazy, and about run out from

too much in-and-in breeding, it being a popular notion that bees will die out in about eight years, unless the blood is renewed. We have in mind a bee-keeper of box-hive management, who used to go three or four miles away and purchase a swarm to renew the blood of his bees. He had very good success for many years, and firmly believed that his plan of infusing new blood was the whole cause of it; but finally he lost all of his bees—over a hundred swarms—by dysentery, since which he has not owned a stand of bees, and talks about them as little as possible. About the only time bee matters are on his mind is in the spring, when he is sure to inquire all about how our bees have wintered. We have no doubt, that if our bees would all die he would rub his hands together and shout, "I told you so."

The introduction of Italian bees has convinced many that they were in error when they supposed that bees would soon run out. The first Italian queens seen in this neighborhood were bought by us and introduced into our apiary, and in two or three years well-marked Italians were found in box-hives several miles from us. Bees can not run out from in-and-in breeding unless it be upon some small island in mid ocean. Even if the queen were to fly but half a mile, there is a chance for her to meet a drove that has been reared in a swarm that has emigrated from a locality a score of miles away, and is now thriving in some old tree, perhaps not a mile away, while our old friend is off a dozen miles, perhaps, purchasing *new blood*.

The absconding mania, with which we find so much fault, is one of those beautiful provisions of nature for the infusion of new blood from one locality to another. With the careless system of bee-keeping in vogue with so many bee-keepers, hundreds of swarms are emigrating yearly in every direction, causing a thorough mixing of blood all over the country, which should certainly allay the fears of

those of our friends who are fearful of their bees running out.

BASSWOOD.

In the spring of 1874 we astonished our neighbors by setting out a fine avenue of basswood trees on each side of the road leading from our home. It had been the time-honored custom in our locality to set out the sugar maple for shade and ornament, and any departure from this rule was looked upon as eccentric. While setting out our trees we were subject to many jokes, one of our neighbors asking if we were going to start a whistle factory; but now our trees have grown so finely, make such a good appearance, and cast such a fragrance upon the summer air, when in bloom, that we now and then find a neighbor setting out basswood trees himself.

Basswood is quite easily transplanted. I have frequently returned from a ramble in the woods with a young basswood upon my shoulder, having pulled it up by the roots, which is easily done when the soil is soft. Basswood is quite slow to start growth after being transplanted, but after getting firmly rooted it grows very fast. With us it grows best upon low lands, although we have it scattered more or less over our mountains. It is a good plan in setting out to put in a sugar maple occasionally, as it is difficult to make basswood live in very hard soil, and in such places maples will make a rapid growth.

If we were to start an orchard of basswood we would prefer to set out young trees, to sowing seed, as much time would be gained thereby. We have trees that have been transplanted six years, which now blossom quite profusely. Could we by selection procure trees that blossom early and late, we might prolong the yield of honey for a month instead of a few days. We find that basswood trees in the open field blossom earlier than those in the depths of the forest, and like the sugar maple produce more nectar and

of a better quality. We hope the next generation will see an improvement in the blossoming qualities of our great honey-producing tree—the American Linden.

Hartford, N. Y., Feb. 23, 1881.

For the INSTRUCTOR.]

Pro and Con.

A. B. MASON.

If bee-keepers would be as free in relating their failures as they are their successes, it might possibly help us to avoid many of the blunders we often make, and would save many of us from going over the ground that others have trod, only to learn by failure what others already know. It seems to me that some of our "big guns" give us more theory than the results of real, practical work, so that we hardly know what to believe until we have tried for ourselves. At the solicitation of Capt. Williams, of "long-tongued bees fame," I have been making some microscopical examinations of bees' tongues, and am surprised to find not a single description or illustration of a bee's tongue that I have ever seen gives it as I find it under the microscope. I made a drawing of a side view of the end of the tongue, and wife remarked that it looked like a battering ram, and she was (as usual) not far from right. It looked so very different from anything of the kind that I ever saw before, that I supposed I was mistaken; but others who saw the drawing said it was correct.

There are many persons who dislike very much to be obliged to differ from what is the generally received opinion in regard to any matter. A writer in the Dec. number of the *A. B. J.*, under the heading of "Do Queens Lay Eggs in Queen Cells?" in relating some of his experience, says: "I do not dare, at present, directly to advocate what would, from the above, seem to be true, against the theories of experienced apiculturists. But

here is my experience for what it is worth, and I confess to some few pinches of doubt about a number of things pertaining to bees, which are pretty generally taken for granted after reading them in a book or paper." The same correspondent refers to an offer of \$50 having been made "to anyone who could prove that the bees ever removed an egg from a worker to a queen cell." It seems to me, from my own and this correspondent's experience, that it would be better to offer the \$50 to any person who would prove that the queen ever laid an egg in a queen cell. The experience that this correspondent gives is worth more than all the "theories of learned and experienced apiculturists." There are *good reasons* for believing that a queen does *not* deposit eggs in queen cells; and if I have the inclination in the future I will ask some of our experienced bee-keepers, in "convention assembled," some questions, the answers to which will either overturn some generally accepted theories, or be directly contrary to all experience.

I have a "theory," and am putting it into practice this winter, that bees can be wintered, either in or out doors, without loss. Within a few weeks I have learned of a brother bee-keeper that he is very sure that he has, after much experimenting, loss and expense, found a way to winter with but a slight loss, and has already been offered a good sum of money for his method; but he would not tell me what it was for any consideration. By putting together what he has said at different times, I am confident that his method and my own is the same; but as he is a strictly honest and honorable man, and wishes to realize something from his knowledge, I do not feel at liberty to give any information in regard to it. I put my bees into my cellar in the fall and they are in splendid condition. I also put 85 colonies belonging to four other persons in my cellar in November.

They were all short of stores, and notwithstanding I urged the owners several times to feed them, fourteen colonies have starved. Eight died of dysentery.

I am very much pleased with the Jan. number of the INSTRUCTOR. I wish you much success in your efforts to give bee-keepers a good journal, and hope that you will keep all controversies and disputes that are personal, and do not lead to the development of apicultural knowledge, from finding their way into its columns.

Toledo, O., Jan. 21, 1881.

For the INSTRUCTOR.]

Preparing for Spring Work.

J. KLINGER.

The weather is still very cold, and we can do nothing in the apiary, so it is still a good time to prepare for spring work. For those who have had some experience in apiculture we need not say what a practical bee-keeper needs, since their own experience has taught them the lesson. But inexperienced persons are continually embarking in the business, and to these mainly will this article apply. Still there may be some whose experience has been limited, and who have not fully mastered the mysteries of bee-keeping, to whom it will equally apply. Bro. A. Henry will hardly feed his bees much syrup until the atmosphere gets a little warmer, and if he feeds them ever so well there will be no peach blossoms for them to gather honey from; besides his bees may smother under the snow, unless in going out to feed them syrup he discovers that snow and ice may hermetically seal his hives, and he learns that the snow, must be removed before it melts and closes them up. And then he may have done as I did, in the press of business and the unexpected early coming of cold weather—failed to prepare his bees for the winter. If he prepared them as well as Bro. O. A. Cory,

all will likely do well; but if not he may not even have any bees to feed. I do not yet know how well my let-a-lone system will work out this winter. I only know that I still have some live bees, though I fear the most of them are dead. There was only one day in Jan. warm enough for them to take a fly, and then only for an hour or so.

If you are going to keep bees make your calculations for some more such winters and make preparations to meet them. It will be well to study the different hives on the market—of which there are legions, both good, bad and indifferent—and then select the kind you think is adapted to your wants, remembering that the choice of a hive should depend upon the kind of honey you mean to produce. If box honey is your object then choose a hive suited to that purpose, and get section frames. Don't depend on making your own surplus boxes, unless you are prepared to make section boxes, and choose a hive that is designed to have the boxes placed on top, where they are most conveniently got at. If you are going to produce extracted honey, however, choose a hive with but few slides and fixtures; one from which the frames are easiest removed. I have for this reason chosen the Mitchell adjustable hive.

I would further say that if you mean to attend promptly to your bees and make large amounts of honey, and have no other business to interfere, by all means produce extracted honey; but if you intend following some other business in connection with bee-keeping, that may interfere when you should extract, then make comb honey, as the loss will not be so great if your full boxes remain on the hive a few days.

Having selected the kind of hive you are going to use, next decide whether you are going to put black bees in it, and fight the bee-moth most of the time when about your bees, and get stung so

often that you get more poison than honey; or whether you will put in Italians that are able to fight the bee-moth alone, and are much quieter to handle, and, best of all, that can and do gather more honey than the blacks.

If you are a little nervous when the bees are cross, get a bee veil to protect your face, and a smoker, for nothing seems to subdue them so perfectly as a few puffs of smoke. If you are going to extract, provide yourself with an extractor, suited to your frames, and a knife to uncap; a bunch of quills or a turkey wing to brush the bees off the combs, and a square box or basket to carry the combs to and from the hives to the extractor. Also a strong knife or chisel to loosen the frames when you wish to take them out, or to loosen boxes for removal; a bunch of spring transfer wires if you have any transferring to do, and then after you have all these, keep the INSTRUCTOR always convenient to tell you how to use them.

After all this, however, you will learn that I have not given you perfect instructions, but will probably find a gap like A. H.

Upper Sandusky, O., Feb., 1881.

For the INSTRUCTOR.]

Bee Items.

A. F. MOON.

As the new year steps upon the threshold of time, with its broad, unmarked pages, which are turned day by day to keep pace with the rising and setting sun, let it be a period of high resolves with us all for the inauguration of a bold, progressive movement in the science of apiculture. The INSTRUCTOR goes forth to its patrons and friends each month with a warm and generous greeting, determined to do its share in making the new year a happy and prosperous one to its patrons. This determination we see expressed on its pages, and we hope that its steady and consistent course as a first-

class journal may continue to be *food* rather than *amusement* for its readers.

Just here we might ask: Whither are we drifting? You ask me to write for the INSTRUCTOR, but what subjects to discuss, and *how*, is the question. We have such a variety of bee literature in these days of universal reading that we apprehend it will puzzle the novice to comprehend its teachings. The bee journals are, however, gradually enlisting many of the leading apiarists and best writers of the country, as contributors, and in this way much is being done by discriminating journals to advance the cause of apiculture. The great variety of opinions, however, among many of the leading apiarists of the country (on many subjects), is calculated to discourage the novice in bee culture. Each one has his opinion of what a standard frame ought to be, and thinks his the best. The same might be said in regard to hives, smokers, extractors, etc.; in fact, with nearly everything connected with the apiary; and sometimes we think the "biggest" humbug meets with the greatest success. We have faith to believe, however, that out of chaos will come order, and that the right will finally prevail.

As it is with the appliances of the apiary, so it is with the different races or kinds of bees. Of the "coming bee" much has been said and written of late, and new races have been introduced, yet we seem to be no nearer the desired result. If half as much attention was given to the improvement of the Italian bee, we believe we would soon see, if not the "coming bee," a wonderful improvement over our present races of bees. We are in favor of improvements of every description, but we hear entirely too much talk and rehash of things, and not enough of the solid facts. There is but little or nothing connected with this rural branch of industry but what may be solved. We may become so familiar with the nature, habits and qualities of the different

races of bees that no one need grope their way in the dark. This requires patient investigation, and much experimenting, but must be attained without adopting every new idea advanced, regardless of whether it is true or false. We cannot adopt the Cyprian as the "coming bee," as it has not yet been fully tested, but must wait, and if it proves superior to the Italian this will soon be known. We hope they may so prove (for we want the best) and hope that those who have made proper tests with these, or the Holy Land bees, will give to the world their good and bad qualities as compared with the Italians. Perhaps Mr. Alley can enlighten us, as we see his advertisement says to send for Cyprian queen bee circular. We would like to read his experience, as he certainly will not recommend them if they are not *good*, unless he should be mistaken as he was about those duplicating queens of his, that didn't duplicate worth a cent. We have many descriptions of the Cyprian bee, one especially from Mr. Alley, in which he says: "They may or may not be a distinct race of bees," and that "It is difficult to distinguish them from the Italian bees." Be this as it may we hope to see these new races of bees fully tested, and that those doing so will come to the front and substantiate their worth.

Another matter that we would like to call attention to is the disposition on the part of some to discourage the importation of the Italian bees. This we think to be wrong, especially when so little pains is taken by the American breeders to raise the Italian bee to its highest standard of excellence. This cannot be done successfully, while so many of our breeders are flooding the country with untested queens, and are doing all they can against the importation of new blood from their native land. We know there are praiseworthy exceptions, but when Mr. A, B or C tells you he would rather have a home-bred queen than a pure, im-

ported Italian, you may rest assured there is something wrong. Now we want it understood that we have no ax to grind, as we never imported any queens, except for our own use; but as queens are generally bred in this country we would prefer one pure queen from her native land to four Americans, for our own use. It will do to talk about the superiority of the home-bred Italian, but it will require more skill in management and less talk to fully succeed. This will hit some one probably, and the one it hits the hardest will be heard from first.

In a future article we expect to say something in regard to some of the theories that are now going the rounds, believing that few of us are above being advised, as we never get too old to learn. We shall continue to experiment and investigate, relative to the advancement of practical apiculture in this country. We look forward to a good season for 1881.

The last of December was extremely cold, but the weather is warm again. Bees are flying and a few are carrying in bee bread. Many flower buds are nearly ready to open, when the bees will be ready to give them a hearty welcome.

Rome, Ga., Jan. 8, 1881.

For the INSTRUCTOR.]

Chaff Hives vs. Single Walled.

B. S. UNDERHILL.

Since the introduction of the Langstroth hive twenty years ago, the world has witnessed a revolution in the management of bees. To that talented man is due the invention of a hive which, like Shakespeare, can never be excelled. The interior of the famous Root Chaff Hive, Simplicity, and very many others are (if not in the upper story) identically the same in the brood chamber. To the progressive bee-keepers of our country is due the great perfection to which our surplus arrangements have been brought; and as we look upon the many varieties of boxes

which deck our markets, it seems nothing farther can be desired in this direction. While we put honey in $\frac{1}{2}$ lb. boxes, mostly, we never use a box larger than the lb. sections. But to those who would make this national industry a success, there is yet a wide field for study. We refer directly to those diseases which sweep off whole apiaries, the accumulation of years of labor and toil, in a single month.

As this mortality takes place only during very severe winters, in this locality at least, may we not reasonably conclude that these diseases are almost wholly the result of uneven temperature, both outside and inside the hive? This conclusion is still farther strengthened, from the fact that both mild winters, and indoor wintering, are far more favorable and less hazardous, than severe winters and outdoor wintering. With a view to overcome this risk of outdoor wintering, there have been many hives invented, among which may be named the Root, Quinby, Nellis, etc., called chaff hives because the bees are expected to remain in them during the winter, packed in chaff, on their summer stands. There are others containing a dead air space, which inventors have claimed great merits for, and without some good reasons; still, we have laid them all aside, and until we can find a better, shall continue to use the Root Chaff Hive. With *one style* hive you will be enabled to give all your attention to studying out the many defects with which it abounds, and be far more successful than with a dozen different ones in your yard.

While all may have their advantages all have their disadvantages. Where some seem replete others are wanting. To him who shall invent a hive to be sold at a reasonable figure, and which shall combine all the successful features of outdoor wintering, awaits a fortune by no means small. It is evident that such a hive must contain an element which not only absorbs, but which will also

throw off the moisture which accumulates largely in all hives. We have not yet found an absorbent equal in any respect to chaff. Day after day, during the severest weather of the past winter, we found the chaff completely frozen several inches in depth (on top of the brood chamber where it is ten inches thick), only to be thoroughly evaporated the first warm day.

In our first experience with this hive we were often disappointed with it, but since we have learned how to pack them we have been so successful that we could not be induced to use any other. We left thirteen colonies on summer stands in Langstroth hives, and we do not think there will be enough left to make three good stocks next spring; all gone with dysentery; while in the same yard to this date, we have not lost one stock in chaff hives, where there are three to one of the Langstroth. If cold weather and uneven temperature do not cause dysentery, what does? Friend Heddon, explain.

Williamson, N. Y., Feb. 28, 1881.

For the INSTRUCTOR.]

Shall we Winter our Bees on Summer Stands?

L. H. PAMMEL, JR.

Many of our ablest bee-keepers have discussed this subject pro and con, giving us the result of their experience for many years. Many have bitterly opposed it, and judging from my experience their labors have certainly not been in vain. No matter how well the advocates of "wintering bees on summer stands" have tried to substantiate their theories, I believe they have failed, for reasons that I will give below. There are exceptions to all rules, and it is also applicable in this case. The first movable frame hive I ever used was a double-walled one, filled with sawdust between the first and second boards, so as to let moisture escape. Bees did very well in them when the winters

were not too severe; but when it was too cold they could not change around as they desired to, nor were they in a perfect cluster; consequently when the winter was long and cold bees had to starve, or they dwindled away in spring. I can especially recommend such hives in summer, as they are always cool. I still use the same, or one that is greatly re-modeled. I left 25 colonies on summer stands, and 25 I carried in a bee house. Part of those I left on summer stands I packed with chaff, and the others with hay. The result is, that those packed in chaff all lived, up to this day, while those packed in hay died, for it is obvious that hay will not permit moisture to escape as chaff does. Should I winter on summer stands my plan would be to use chaff in preference to anything else. But one died of the 25 that I put in a bee house. Until this winter I advocated wintering on summer stands, but this winter has brought me to the firm conclusion that when we winter on summer stands we run considerable risk, while if wintered in a bee house we are positive of what we have got, and run no risks.

The bees have had no chance to fly since November. Now, let the bee-keeper ask himself whether his bees are better taken care of in a bee house or outside where the fierce north and west winds blow through every fissure. It is an axiom or self-evident truth that those in a bee house are well taken care of without the fear of dysentery or other diseases. I don't believe in wintering in a cellar, as Prof. Cook and many others do, as it is not as convenient; but I do believe that Prof. Wilkinson's plan of wintering in a bee house is a good one, and that some keeper of practical experience should make a bee house according to his plans, and make a report at our National Convention. It would be a great benefit to the science of bee-keeping. Prof. Wilkinson, of Maryland, read an essay on his bee-wintering house at the

National Convention held at Chicago in 1879. Those of your readers that keep the bee journal should refer to the Nov. No. of that year. I believe the article to be of some value to bee-keepers.

Some bee-keepers go to great expense in packing their hives on summer stands without ever receiving a just compensation for their trouble. Many bee-keepers claim that it costs them less to winter on summer stands than in a cellar. This I claim is not so, and to prove it let us see what the difference would be in the two methods between the cost of caring for 50 colonies:

COST OF WINTERING IN CHAFF.

50 Langstroth hives, packed in chaff,	
\$5 00 each (not including bees or honey)	\$250 00

COST OF WINTERING IN BEE HOUSE.

Carrying 50 Langstroth hives in and out of bee house.....	\$ 5 00
Cost of 50 Langstroth hives.....	75 00
A bee house to winter in.....	50 00

	Total	\$130 00
Cost when packed in chaff.....		250 00

Difference in favor of wintering in bee house.....	\$120 00
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Let us not be hasty in coming to conclusions, for "to err is human," and the wisest often make blunders for which they can not atone. Let us be very careful how our bees are prepared for winter, for there lies, as it were, the "corner stone" of success in bee-keeping. Much light is needed on this subject of wintering, and as the years roll on new and better methods may come to light, which will not only aid science, but which may encourage men to engage in this much honored and beloved vocation.

La Crosse, Wis., March 1, 1881.

For the INSTRUCTOR.]

Rocky Mountain Honey Bees and Their Care. No. 2.

W. M. EGAN.

It is now the time of year that we should begin to take steps to carry our bees successfully through the spring, and

supply every condition to them that will be of any benefit. I write this article with this end in view.

Now that spring is upon us, we have to put up with all the mistakes we have made in wintering, try and profit in the future by our past experience, and make the best use of our present circumstances. The first fine day it would be a good idea to "take stock," overhaul every colony, and note down their condition in a memorandum book, to be kept for the purpose. Of course the first thing you will look for is the queen, or the evidences of her presence, in eggs or brood. Notice also how large a spread of brood, whether capped or only eggs and larva; but above all see how many frames the bees cover, and make the hive just that small, and keep it so until the bees boil out as you raise the mat. Any queenless colonies you may discover must be united with other weak colonies; but do not decide they are queenless simply because you do not see the queen nor her brood; perhaps she has not commenced to breed yet, owing to the small number of bees and the large size of the hive. It would be the better way to give them eggs and see if they start cells, if we want to be sure, and I think we always ought to be, for if we don't want to save the colony we ought to save the queen, which we may do by caging her with plenty of food and some young bees; more young bees may be added when necessary. Keep them in a warm place, and when you can spare a frame or two of bees and capped brood, set her to work, and you will soon have another good colony.

While you are examining the condition of each colony and noting it down, it would be a good idea to also see how much honey and pollen each colony has, and if deficient in either you should certainly supply them, either by exchanging frames or feeding, and I don't know but it would be a good idea to feed any way. I would feed in this way: Mix pea flour

and honey (or coffee A sugar syrup) together pretty thick, and spread it into an empty comb, like you would butter on bread, forcing it into each cell, and then place the frame into the hive in the center of the cluster. They will suck out the surplus honey, pack down the pea flour, and put the honey in separate cells for future use. It promotes brood rearing, and keeps the bees at home, if you supply them with sufficient water.

This idea of "water supply" is an important one, for the first thing (when bees begin to breed) that is wanted is water, and you will find them going after it every day they can get out, even venturing out on cold, rainy days, when they are often chilled, and are unable to get back to their hives. Now, if this water is supplied to them inside of their hives there will be no such trouble, as they have everything they need inside, and will only come out on fine days. But water they must and will have, to thin down their honey, which they do by uncapping and adding water to it until it is of the proper consistency for their use. You can see this uncapped, thin honey, in any hive that has commenced to breed. So from the above reasoning, and to keep the bees at home on their brood and combs; also to prevent "spring dwindling," I would recommend water given inside of the hives; and perhaps as easy a way to do it as any would be to immerse a comb in water until the cells are filled; then place it in the hive and close all up tight again.

In order to "clarify" my "riley" remarks I will recapitulate the conditions: 1. The size of the hive should be reduced to the size of the colony and well protected from the cold. 2. There should be plenty of food in the hive: Honey, pollen and water, or substitutes for them. 3. After your bees are breeding rapidly, and pollen is coming in from natural sources, spread the brood every 10 days or as often as they get crowded, and in-

sert a comb of capped honey, breaking the caps. But don't overdo the thing, and you will be surprised to see them make bees.

When the above conditions are fully attended to there is no trouble with Spring Dwindling, Dysentery, Swarming Out, etc., etc. But of course if you can't supply the first condition in regard to the size of hive, for the reason that there is not bees enough to cover one frame, you cannot expect to accomplish much with them unless you unite or build them up from other colonies.

Salt Lake City, Utah, Feb. 28, '81.

Below will be found the question box as presented and answered at the late North-Eastern Bee-Keepers' Convention held at Utica, New York.

In this climate do we have weather cold enough to freeze bees, provided they have in the hive honey which they have access to? No.

Is the side box system a success? "Yes" by two; "no" by one.

Is wired foundation a success when used for a brood chamber? "No" by two.

Is it advisable to use full-sized sheets in brood chamber? Yes.

Which is preferable, a hive without bottom, or bottom fastened to hive? Bottom fastened to hive.

Is comb foundation six months or a year old accepted by the bees as readily as that just made? No.

What amount of surplus room for box honey is it advisable to give a swarm at one time? What the swarm requires.

What is the best method of getting bees started in surplus boxes? Fill the boxes with comb.

Would you recommend full sheets of foundation for surplus boxes? One for "full sheets;" two for "starters."

Which is best, natural starters or foundation? Natural starters.

What objection is there to a center bar in the brood chamber? Does it not make a better winter communication than making holes thro' the combs? No center bar needed.

What is the best quilt for wintering? Anything porous.

What is the most convenient arrange-

ment for side cases? "Our own" by two; "no side boxes wanted" by one.

Will it pay to construct an inner part just large enough to hold combs to winter 6 Langstroth or 5 Quinby frames, that will set into the main hive, the object being to carry just what is needed to the cellar, instead of the main hive; they can also be used for nucleus hives in summer? No.

What extractor is best for the beginner to use? A. I. Root's for honey; Swiss extractor for wax.

What time of year is it best to purchase queens when you have all natives and want to change to Italians? Any time you have the money.

Is it objectionable for bees to breed in winter, say February? No breeding necessary 'till spring.

Are bees more inclined to supersede clipped queens than queens not clipped? No.

Can bee-keeping be made profitable in a locality minus basswood, with plenty of white clover, alsike, golden rod and buckwheat? Yes.

The quality of wax and weight of foundation being equal, which is preferable for use in surplus boxes, flat bottomed or lozenge-shaped bottomed foundation? Bottoms as the bees build them.

Would it be advisable to take a swarm of bees known to be without honey into the house into a room without fire, giving them supplies until they are quiet, and then putting them on their summer stands for the rest of the winter? Be sure that all have honey in the fall.

Liberal Premium Offer.

For each and every club of Thirty subscribers to the BEE-KEEPERS' INSTRUCTOR at 50 cents each, I will give one colony pure Italian Bees.

The club list should be sent to my address.

GEORGE W. HOUSE.

Fayetteville, Onondaga Co., N. Y.

Letters.

ROME, GEORGIA.

Editor Bee-Keepers' Instructor:

Bees are flying as in summer, and carrying in pollen rapidly. I examined a few stands and found brood in two or three

frames in each. The peach and plum have commenced to blossom, and in a week's time will be in full bloom, when the bees will be visiting them in full force.

A. F. MOON.

March, 5, 1881.

FRANKFORT, O.

Editor Bee-Keepers' Instructor:

Please find enclosed \$1.00 to renew my subscription to the INSTRUCTOR, as well as Jacob Shively, of Anderson Station, Ross county, Ohio.

I am well pleased with the INSTRUCTOR, and find it profitable reading. Bees in this locality have suffered badly this winter. The honey stored was of very inferior quality, and the winter continued so long they could not get a fly. I packed in chaff, and those left on their summer stands are all right; but of those housed in shed, and packed in chaff, lost three; two by not having sufficient food and one by smothering, caused by the entrance closing with ice.

O. A. CORY.

February 28, 1881.

DALTON, PA.

Editor Bee-Keepers' Instructor:

Perhaps the friends of the INSTRUCTOR would like to know how bee-keeping is in this section of the country:

We started in the spring of 1880 with 6 stands, 4 in old box hives, 1 nine and 1 ten frame Langstroth. The 4 box hives threw off 5 swarms that we secured, and 2 that bid us good-by while we were at church. From the new swarms we secured 27 pounds of honey, and from the 9 and 10 frame Langstroth 90 pounds in 5x5 boxes (but no swarms), making 117 pounds of honey in all, 40 of which was white, and 77 of buckwheat. White honey sells here at from 15 to 20 cents per pound, and buckwheat at 12 to 16 cents. During the summer we lost one. Bought one and caught one, so that we went into winter quarters with 12 colonies on summer stands. Last spring we could buy swarms in box hives for \$3.00 each; now

some want as high as \$5.00. For a hive the Royal, with double walls for winter, suits me best.

Snow has covered the ground for over a month, and is 18 inches deep now. The thermometer has played at from 10° above to 14° below zero most of the time this winter. Our bees have not had a fly for two months, but in other respects we think they are wintering well. Perhaps we will tell you about our Italian queen next month. I wish the INSTRUCTOR much success. GEO. H. COLVIN.

Jan. 31, 1881.

REYNOLDSBURG, O.

Editor Bee-Keepers' Instructor:

I fed and put into winter quarters some seventy or eighty colonies in October last. I use the Mitchell hive. I make them two and two and a half feet long, 14 inches wide and 10 inches deep. I consolidated the frames, leaving only what the bees could cover (from 6 to 8 in each end of the hive). For packing I used clover chaff. On some hives I used woolen blankets, and on others I used cushions made of cheap muslin filled with clover chaff. On examining to-day I find that they have brood in all stages, and plenty of honey. I have used the Mitchell hive three years, and like it well. It took the first premium at the State fair. Success to the INSTRUCTOR.

Feb. 24, 1881.

S. M. OLDHAM.

MT. MERIDIAN, AUGUST CO., GA.

Editor Bee-Keepers' Instructor:

So far as I have been able to learn, bees in this neighborhood are wintering badly, especially those in the old-fashioned box hives.

I went into winter quarters with ten colonies in good condition, and ten four-frame nuclei. My nuclei were snowed under, and I thought I would let them alone and see what would become of them. They had plenty of stores to do them until March. I did not examine them until after the snow had melted,

when I found them all dead; smothered, I suppose, from the ice clogging up the entrance. My other bees had a fly on the 30th of January, and seem all right. It is cold now and getting colder every minute. This has been the coldest winter experienced in this part of the country for many years. It is terrible on the box hive men. Some have lost nearly all their bees, and I hope it will prove a lesson to them that they will never forget. [They have been making fun of our improved hives, calling them mice dens, etc., etc.] One man I heard of has lost 25 out of 27 stands. The losses range from $\frac{1}{2}$ to $\frac{3}{4}$, and so on, with a prospect of losing still more. I winter my bees on the summer stands with double wall hives, packed with chaff. I use a hive of my own invention, which I think is as good as any.

JAMES CRAIG.

February 3, 1881.

Thanks, Bro. Craig, for your satisfactory report. Yours is not the first loss sustained by experimenting. Some seem to succeed well by covering with snow, but, as we have said heretofore, we look upon it as a rather dangerous experiment. Great caution and watchfulness are essential to success in such cases, as there is great danger of the bees smothering by the snow partially melting and becoming too dense, or by its melting and closing the entrance with ice. This plan should not be adopted or thought of, except where it can be continued unremittingly through the winter, for when covered the hive will be kept quite warm, and as soon as the snow melts and leaves the hive exposed, the bees will the more keenly feel the sudden change, should the weather become severely cold. We have no doubt your

bees will come out well if properly packed in chaff, as the almost universal testimony is in favor of chaff and straw mat packing. Such material possesses good absorbent qualities, and this is just what we want above and around the bees (if possible) to keep them dry, warm and comfortable during our long, cold winters.

WASHINGTON C. H., O.

Editor Bee-Keepers' Instructor:

At your request I will give you what I think was the cause of my bees dying so early in the season:

In September they were very strong, but after that had no bloom of any consequence to work on. Close by my apiary was a large orchard, and my bees worked on the apples during October and the forepart of November. I noticed them at work on the apples when it was so cold that they were unable, after filling themselves, to raise to fly home. In this way many perished, and they kept becoming more and more reduced in numbers, until by the time that the thermometer fell to zero or below, they were too weak to keep up the necessary heat, and they froze.

My bees were confined to from 8, to 10 frames, and were well protected with old cloths and old carpets on the top of the hives (under the cap) and around the division boards, but notwithstanding this protection the heat was not sufficient to keep them alive.

Another cause that made them dwindle was that we had a bright, sunshiny day, while the earth was covered with snow, and the bees came out for a fly and many perished. When I came to look at them in the afternoon I found the snow covered with dead bees for rods around. I think all bees should be kept in cellars in the winter, while snow is on the ground.

March 5, 1881.

E. HENKLE.

From your report, Bro. Henkle, we have reason to believe that the primary cause of such mortality was the lack of good, healthy stores. The honey harvest shutting down early the bees no doubt consumed much of their good stores, and filled up with apple juice, which proved to be entirely unfit to produce heat to sustain life. In fact, the apple juice was entirely unfit for food, especially for winter, and when they came out on that bright, sunshiny day they were too weak to get back to the hive, and dropped in the snow and perished. Under such circumstances you should have kept your hives well shaded from the sun. We have no doubt but what your disaster might have been avoided by proper feeding in the fall. If in October (when you found that honey was short and your bees were working on fruit) you had commenced feeding good syrup and kept it up until the colonies were strong and full of stores, we have no doubt but what your bees would still be living. One dollar's worth of syrup to the colony would no doubt have filled up their empty combs so that they would have had neither room or disposition to stow away any of the death-dealing apple juice. This to some might look like an expensive business, but you will certainly admit that it would have been much better than to lose all your bees. Never, if you can by any means prevent it, allow your bees to store away apple juice for winter supplies; and remember that it is not simply luck with bees, but that ev-

ery effect, whether good or bad, is the result of a corresponding cause, although we may not always be able to trace out and ascertain just what it may be.

Question Box.

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

1. What is the best remedy for beesstings?

2. Which is the best frame to use in the extractor—a deep or shallow one?

3. How much honey does the prize box hold?

4. Can you give directions for making and using a hiving box for catching and hiving swarms?

5. Will bees eat more if kept in a warm place in winter than if kept in a cool one?

6. What frame is used in the Combination hive?

BEGINNER.

Huntsville, Ala.

1st. Ammonia is highly recommended. Soda is also good, as is salt, soft-soap, lye made of wood ashes, etc. Sometimes, if stung very badly, an emetic will help quicker than anything else.

2d. For extracting we prefer a frame nearly square; say 11x11 or 12x12 inches each way. They are not so apt to get broken, are easier to handle, and can hang in the extractor in the same position as in the hive, while all long and shallow frames have to be stood on end.

3d. The prize box is 6½x5½ inches, outside measurement, and when well filled holds two pounds of honey.

4th. Make a box of very thin lumber, about a foot square, without either top or bottom. Bore it full of small holes and fasten on the end of a long pole, and when you wish to use it hold it among the cluster, or clustering bees, and they will generally appropriate it, when they can be gently lowered, and jarred or brushed before the hive. If you desire

them to cluster on any particular thing, tie a cage containing a queen and a few bees to a bush, and fasten to end of pole as before, and hold among the gyrating bees, and they will almost always cluster thereon. Some persons claim to be successful with what are called "bee bobs," viz, dead bees strung on strings, and hung so as to resemble swarms; also black hats, bundles of black rags, etc.

5th. Bees will consume less if kept at a temperature of about 40° to 45° Fahr., than if warmer or colder.

6th. The regular American frame, 12x12 inches square.

Are we to understand that you discourage patents on articles for the apiary? I refer to your answer to A. R. C., in Jan. number.

PATENTEE.

Circleville, O.

No sir, by no means. If we knew enough to invent anything that was useful enough to make it pay, we should certainly take out a patent, expecting no one to find fault except those who want to use others inventions without credit. And just here we wish to thank Mrs. Harrison for the way she pitched into us in last INSTRUCTOR, for it has brought out just what we wanted. We were not so much afraid of a "tilt" with supply dealers as we were of a reprimand from "our chief." As we now have nothing to fear from that quarter, send along your questions; we'll help you all we can, and be glad to do so. But, by the way, why did not Mrs. H. set us a good example, and tell us whose smokers those were that she had such a time with? We used four different makes last season, and have not much preference. All are good.

Editor's Corner.

A number of catalogues and price-lists have been received since our last issue, which we will notice next month. No room for them this month.

The North-Western Ohio Bee-Keepers' Society meets at D. Ita, Ohio, on the first Thursday in April. Daniel Kepler, of Napoleon, Ohio, is Secretary.

Mr. Haddon's article on "Comb Foundation for Surplus Boxes, and the New Roller Mill," which was to have been given in the Feb. number, will not appear until May, as he wishes to thoroughly test the new mill before reporting on it.

The apiary of Messrs. Riegel & Drum, within one mile of Adelphi, is wintering finely. Over 100 colonies, out of 108, are in splendid condition. They were wintered in the Combination hive, with chaff protection on top. We expect their report for the April or May INSTRUCTOR.

We are indebted to T. G. Newman for a copy of "Cook's Manual of the Apiary," and to L. C. Root & Bro. for a copy of L. C. Root's "Quincy's New Bee-Keeping." They are both books of sterling merit, the practical rather predominating in Root's work, and the scientific in Cook's.

Vick's Floral Guide for 1881 is certainly one of the most tasteful and elegant specimens of the printers' art we have ever seen, as well as one of the most complete seed catalogues published. It is illustrated by hundreds of fine engravings, and is sold at the nominal price of 10 cents. Address James Vick, Rochester, N. Y.

We have several essays and articles on hand that are rather out of season, such as "Wintering Bees," etc., that will appear from time to time when seasonable, if room can possibly be spared for them. Some of them we are anxious to publish, but our journal is too small to contain all the good things to be said on the subject of bee culture.

Next month Mr. Geo. W. House, of Fayetteville, N. Y., will present the first of a series of articles in which he will review and criticise each month the contents of the preceding number of the INSTRUCTOR. Of course it will be done in the kindest spirit, and as Mr. House is well known as a live, progressive bee-keeper, and one who has had a great deal of experience, we think his articles will be a source of much information to our readers.

Instead of our regular Monthly Man-

agement, we refer our readers to the excellent article by W. M. Egan, under the caption of "Rocky Mountain Honey Bees and their Care." We have never tried the pea flour, but rye flour may be used in the place of it. Whether it is as good or not we are unable to say. We would also recommend thin syrup—two parts sugar and one part water—to be fed at intervals from now until the last of April, in connection with candy made after the recipe of H. L. Jeffrey, to be found on the first page of this number.

DO BEES FREEZE?

"In this climate do we have weather cold enough to freeze bees, provided they have in the hive honey which they have access to? No."

This question was thus decided at the North-Eastern Bee-Keepers' Convention, recently held at Utica, N. Y. The question seems to be a plain and simple one, and yet we are not right certain that we fully understand it, for the simple reason that we can not see what such a decision can possibly amount to. Nothing whatever is said about any conditions, save that of "having access to honey," and we might assume that it does not matter how thin the walls of the hive, or how slightly they are protected, still they will not freeze if they have the honey in the hive where they can get at it. In fact, such a decision is simply saying that they will not freeze under *any* circumstances, so long as they have access to honey; and if they die with honey in the hive we suppose the decision would be that they *starved*, because they were unable to get at the honey by reason of getting *chilled* so as to lose the power of locomotion. But of course they didn't freeze. In the same convention that decided *No* on the above question, Mr. Chas. Dadant, of Hamilton, Ill., tells us that "bees will not live 48 hours in a temperature lower than 45°" (and we believe that he is about right), and yet we find persons who gravely take the ground that bees do not freeze. They may starve with full stores because they are so *chilled* that they are unable to travel from comb to comb to get the honey, but of course they don't freeze. They may *perish* in a temperature several degrees *above* the freezing point, but they will not *freeze*, even if the cluster is so small or the protection so poor as to allow the temperature of the hive to run down several degrees *below* the freezing point.

Such reasoning as this will not do. Bees are not cold blooded like reptiles, and consequently can not lay in a dormant state through the winter, and revive in the spring. On the contrary they are warm blooded insects, originally of a warm climate, are very sensitive to cold and will speedily perish if exposed to a freezing temperature. If this is not so, why so much ado about chaff hives, indoor wintering, and winter protection in general. Such decisions as this we believe are calculated to lead the novice and unthinking bee-keeper astray. We may be mistaken in our opinion, but we think it would have been better if the convention had decided that ample absorbents and winter protection of *some kind*, were necessary to keep up the temperature of the hive high enough to enable the bees to move from comb to comb, to get food to assist in keeping up and regulating the temperature; and unless this is done bees "in this climate" will freeze. We are aware that food is the fuel that keeps up the animal heat, but if the climate is cold enough, and even if a large cluster is left without the proper protection, the heat will pass off so much more rapidly than it is generated that the result is *death by freezing*, though they may gormandize to their last dying gasp. If this is not so, analogy, as well as experience, goes for naught.

UNFAIR DEALING.

We call the attention of the readers of the *American Bee-Keeper* to the following extract from the self-adulatory article in the Jan. number of that magazine, page 200. It is as follows: "Gleanings, Bee-Keepers' Magazine, Exchange, Guide and INSTRUCTOR, are all devoted to the sale of supplies for the apiary, and consequently have the publishers' personal interests *first and always predominant*." Now the writer knew, so far as the INSTRUCTOR was concerned, that this was not so, for in the Dec. number, page 181, he says—after claiming the honor of driving the editor of the *American Bee Journal* from the supply business: "Also the INSTRUCTOR is now an independent advocate of the rights of bee-keepers, no longer dealing in the editor's wares." Although the phrase, "dealing in the editor's wares," is rather abstruse, he had learned and realized that we were not dealing in supplies, and yet, in the Jan.

number, he indiscriminately classes us with the supply dealing journals. This is a matter that we care but little about, only that we don't propose to be placed in a false position. We announced in the beginning that we were not *then* and did not intend to be in the *future*, dealers in apiarian supplies, and we have no desire for E. M. Harrison or anyone else to give us any such gratuitous advertisement. As to other bee journals advertising their wares we have nothing to say. That is their business and not ours. A journal might have much graver objections urged against it (such as a dearth of interesting, useful matter, or a disgraceful typographical appearance, rendering it unsightly and trying to the optics), and it is for a discriminating public, and not us, to approve or condemn the bee literature of the day.

Honey Markets.

REPORTED FOR THE INSTRUCTOR.

BOSTON.—Our market on honey has been quiet, but is doing better now. Dark honey we quote at from 12@14 cts. White clover comb in 1 lb sections, 22 cts.; in 2 lb sections, 18@20 cts.

For our market advise your people to put up 1 lb combs and ½ lb combs, the latter being worth 30 cts. per lb here any time. 1 lb combs wanted; none in market.

Beeswax 18 to 24 cts. per lb, owing to quality. CROCKER & BLAKE.

CHICAGO.—Honey—Sells slowly. There is a fair supply on the market. Good to choice in combs is quotable at 14@17 per lb, and common dull at 12@13c. Small packages are preferred.

Beeswax—Small lots are offered. Sales are occasionally made, but the demand is meagre and there is not much doing. Quotable at 20@22c. per lb for good to choice bright yellow, and at 15@17c for common and dark.

R. A. BURNETT.

NEW YORK.—Market at present dull, with tendency to lower prices. Best white comb, small neat packages, 17@18 cts.; fair do., 14@16 cts.; dark do., 11@13 cts. Large packages about 2 cts. lower. White extracted, 10@11 cts.; dark, 7@8 cts. Southern strained honey, per gallon 85@90c.

Beeswax: Prime quality, 23@26 cts.

H. K. & F. B. THURBER & Co.

CINCINNATI.—The market for extracted clover honey is very good and in demand at 11c for the best, and 8@9c for basswood and dark honey. Comb honey is of slow sale at 16c for the best.

Beeswax: 18@24c.

CHAS. F. MUTH.

BOOKS FOR BEE-KEEPERS.

COOK'S MANUAL OF THE APIARY is one of the latest additions to bee literature, though by no means least. It is particularly valuable to the scientific bee-keeper [although in part II, under the head of "The Apiary, its Care and Management," instructions are given that the most inexperienced can understand], as in it Prof. Cook has opened up a hitherto unexplored field, by giving a full description, illustrated by numerous engravings, of the physical structure of the Honey Bee. It is fully illustrated and handsomely printed and bound. Price, in cloth, \$1.25; paper, \$1.00.

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