



LIBRARIES

UNIVERSITY OF WISCONSIN-MADISON

The bee-keepers' instructor. Vol. III, No. 1 January, 1881

Adelphi, Ohio: Webster Thomas & Sons, January, 1881

<https://digital.library.wisc.edu/1711.dl/ITTLN65BORRPV8W>

<http://rightsstatements.org/vocab/NKC/1.0/>

For information on re-use see:

<http://digital.library.wisc.edu/1711.dl/Copyright>

The libraries provide public access to a wide range of material, including online exhibits, digitized collections, archival finding aids, our catalog, online articles, and a growing range of materials in many media.

When possible, we provide rights information in catalog records, finding aids, and other metadata that accompanies collections or items. However, it is always the user's obligation to evaluate copyright and rights issues in light of their own use.

complete

VOL. III.

JANUARY, 1881.

NO. 1.

THE

BEE-KEEPERS'

INSTRUCTOR.



Webster Thomas, Editor.

CONTENTS.

Comb Foundation.....	385	Preparation for the Future.....	392
Italian Bees and Their History	386	Modern Queen Breeding.....	393
Imported vs. Home-Bred Queens.....	387	Questions Answered.....	394
Shipping Queens.....	388	Shall We Induce the Importation of New Races of Bees?.....	395
Use of Comb Foundation.—Will It Pay?—A Case.—Other Items.....	388	How to Feed Bees in Winter.....	396
How I Prepare My Bees for Win- ter.....	389	Letters.....	396
Queen Rearing.....	390	Question Box.....	397
How to Sell Honey.—Another New Idea.....	391	Editor's Corner.....	398
		Business Matters.....	400
		Advertisements.....	400

JUST OUT!

OUR ILLUSTRATED CIRCULAR AND PRICE-LIST OF APIARIAN SUPPLIES.

We manufacture and keep on hand at all times, Royal and Combination hives, One-Piece Section Boxes, Frames, Improved Surplus Cases, Shipping Crates and Bee Feeders. Also Extractors, Dunham Comb Foundation, Honey Knives, Bingham Smokers, Italian and Holy Land Bees and Queens, Seeds of Honey Plants, &c., &c. Everything of the BEST quality.

QUEENS and ONE-PIECE SECTION BOXES A SPECIALTY.



Circular sent Free. Address

RIEGEL & DRUM,
Adelphi, Ross Co., Ohio.

RIEGEL NURSERY,
Riegel & Brehmer, Proprietors,
ADELPHI, OHIO.

We are prepared to meet the wants of all who may wish to purchase
Fruit, Shade or Evergreen Trees,
Crape-Vines, Small Fruits & Roses,
SHRUBS, GREEN-HOUSE AND BEDDING PLANTS,

Our Stock is large and well grown, and equal to any in the country.

 All orders will be promptly and correctly filled.  Send for price-list to

RIEGEL & BREHMER,

Adelphi, Ross Co., Ohio.

Bee-Keepers' Instructor.

Vol. III.

ADELPHI, OHIO, JANUARY, 1881.

No. 1.

Published the mid-
 dle of each month.

W. THOMAS & SON,
 Publishers and Proprietors.

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

Our Contributors.

For the INSTRUCTOR.]

Comb Foundation.

JAMES HEDDON.

This old subject is ever a new one, and ever will be so long as improvements in this line go on and on as they are doing at present. I think it was about five years ago that Mr. Root sent me some foundation that was made of a mixture of bees-wax and parafine, and some made of pure, bleached white wax. I put them to experiment at once, and notwithstanding this foundation was highly recommended by some bee-keepers, I pronounced it a failure. That is, it failed to fill the recommendations, or to prove that it was worth its cost, above the old method.

Next, Mr. C. O. Perrine, the Chicago honey dealer, and "Floating Apiary" honey producer, of the Mississippi river, having purchased the Root foundation machine (the only practical one in existence then), paid me a few days' visit, and we experimented with foundation brought by him. This lot was part bees-wax, part cerosine, and part pure, bleached wax. I need not tell you that comb foundation was still a practical failure. By and by some one said that "pure yellow wax would work well;" but I still said, "I am a doubting Thomas." I tried some of the pure yellow wax foundation, however, and sure enough, it did pretty well. All the foregoing were made on the Root mill.

Next, we got the Dunham foundation,

and this was still better. By this time all parties had got more used to it, and we agreed with one accord that "comb foundation is a success." Of course it was not perfect, so workers kept on trying to improve it. All could see that full frames of foundation, worker size, for the brood chamber, would not only be a great wax and labor-saving arrangement, but that they would secure *straight* and *all-worker* combs. There being no known way to fasten full sheets into frames so that they would not warp, twist, sag or kink, some New York bee-keeper devised the use of fine wires, woven into the center of the frames, upon which the sheet of foundation was placed (while warm) to stick to them, and thus hold the full sheet in a perfectly central position in the frame. The only objection to this plan was, that the labor was considerable, and that the queen would, in many cases, skip the cells that the wires passed through.

Next, a Mr. Given, of Illinois, invented a press and die book, intended to make the foundation right upon the wires in the frames. Early last spring Mr. G. sent me one of his books and presses on trial; also a wired frame of foundation. I placed the frame in one of my colonies, and in 24 hours I had a beautiful all-worker comb, with nearly all the cells drawn out to breeding depth. I then sheeted some wax, and put the press to work. After much trouble and experiment, to get the dies to cease sticking too tightly to the wax, we succeeded in running off about 100 per hour. With these

wired frames of foundation I have had excellent success. The great pressure upon the dies and sheet of wax puts the wires right into the *center* of the septum of the foundation, and leaves a perfectly smooth surface; hence the bees do not seem to recognize the metal at all. The queen does not skip the wired cells, and the brood hatches out of them to perfection. The press also makes a very thin and admirable foundation for the brood chamber.

We have now about 75 stocks upon these wired combs, and we count them worth, on an average, \$1.50 more than those upon combs built in the natural way. The advantages are these:

No drone comb in the hive, which does away with a lot of consumers.

We can control the blood of our *male* stock, as well as the female.

We have *straight* combs, *solidly* held to place in the frames.

We have more available cells in the same size hive.

For these reasons the colonies on these wired combs are worth more than the others. But these are not all the advantages of full sheets of foundation in the brood chamber. Another and very important advantage is, that when a swarm is hived, the queen (then full of eggs) has a chance to lay many times the number of eggs the first two or three days that she would if only narrow strips of foundation, or none at all, were used. I may also say for the first two or three weeks, if not the whole season, as the bees draw out the cells so fast they do not keep them filled with honey. The honey goes above into the $4\frac{1}{2} \times 4\frac{1}{2}$ one-pound sections (which, by the way, should be put on the third day after hiving, or, if the swarm is extra large, at the same time). The sections being so small, and the frames of foundation so comparatively large, there need be no fear of the queen going above. If I remember correctly I have never had a cell of brood put into a $4\frac{1}{2}$ section, out of

several thousand used.

A new roller mill is about to appear, that, I should say from some samples received, bids fair to take the lead of all the roller mills made now. Within a month I may know much more about this new mill, as the inventor and manufacturer writes me that I may look out for one soon. I will try next month to tell you what I have learned about

FOUNDATION FOR BOXES,
and the new roller mill.

Dowagiac, Mich.

For the INSTRUCTOR.]

Italian Bees and Their History.

S. M. OLDHAM.

This variety of the honey bee was originally found in small districts amid the Alps, in Switzerland and Northern Italy. They are of a striped, golden color, and were described by very ancient writers as being a very valuable variety. But for centuries they remained in that location, not being known outside of it until they were accidentally discovered by Captain Baldestein in 1843. In 1853 they were introduced into Germany; and in 1859 the first stocks came across the waters to our own shores, for one Mr. Colvin; but unfortunately he was not successful. They all died the following winter. In the following season Mr. Mahan was successful, as he superintended their voyage in person.

Shortly after Mr. Mahan's importation, S. B. Parson, of Flushing, Long Island, succeeded in getting a few swarms over alive, from Italy. From these, by the help of many other apiarists, a large number of queens have been raised, and sent to nearly every State in the Union. Since then there have been numerous importations by others, and the Italian bee is now becoming very common, and the question naturally arises: Is the Italian bee an improvement over the common

bee? We look upon them as being decidedly superior to the black or German bees. In the first place they are a little larger and very beautiful. They have three distinct golden, or leather-colored bands running around the body. The first one is small and scarcely perceptible, commencing at the thorax. The next two are much broader. The number of bands is undoubtedly a test of purity, and I am of the opinion that a pure colony of Italian bees will always show the three distinct leather-colored bands, and the colony be of uniform color. We will next notice some of the advantages which the Italian bee possesses over the common bee:

THEIR STRENGTH.

Being larger their individual strength is greater, enabling them to fly with less fatigue; and being active they defend themselves better against their enemies, and especially against the moth-miller, and therefore protect their stores better than the common bee. They have more sources for honey: They gather honey from sources in which other bees fail—such as the iron-weed, thistle, and the seed crop of red clover, and many other flowers which are seldom visited by the black bee. It seems that their proboscis, or tongue, is longer, and that they can reach the honey-cups of flowers, which the other bees cannot.

THEY ARE MORE INDUSTRIOUS.

They work more steadily during the season, and continue their season longer, working even when there is little honey to be gathered from any source.

THEY BREED FASTER.

It is a well-known fact that breeding keeps pace with honey gathering, and being good honey gatherers the result is strong stocks, which secures a large product of honey, and makes them proof against the moth and poor honey seasons. Hence the large profits arising from them. Their stocks always being strong they breed earlier in the season, and con-

tinue later, casting larger swarms. They actually swarm about two weeks earlier than the black bee, thereby gaining that much time in the best part of the honey-gathering season.

THEY ARE MORE EASILY HANDLED.

In opening a hive the queen of the Italian is more readily found, from the fact that the workers are generally all busy, and her majesty remains undisturbed on the combs. Being more constant workers they are less inclined to rob, are more peaceable and less inclined to use their stings than the native bee. Being hardier they are longer lived, and winter more safely. And when a queen is past her prime they are more apt to supercede her than the common bees, which often remain queenless, allowing the colony to dwindle and fall an easy prey to the moth.

Reynoldsburg, Ohio, Jan., 1881.

For the INSTRUCTOR.]

Imported vs. Home-Bred Queens.

F. L. WRIGHT.

A certain class of bee-keepers are laboring hard to convince the people that the imported queen is *the* queen; while at the same time another class would have us believe that the imported queen is "good for nix," and that the home-bred is *the* queen for everybody.

One *knows* that there are black bees in Italy; another that there is not.

One claims that in Italy queens are reared in a very careless, shiftless manner; another says they are bred in the most careful manner.

Now the question is, Mr. editor, how are we going to decide which is right and which is wrong? or which are the best and most profitable, the imported or the home-bred? "The proof of the pudding is in the eating."

Most of us have plenty of imported queens. We also have the light-colored

home-bred. Now, when the season opens let us take one or two colonies containing our choicest imported queens; ditto of our best and lightest-colored home-bred, and set them aside to experiment with. Keep an exact account of all work done with each; the *exact* number of lbs. or oz. of feed fed to each; the *exact* number of lbs. or oz. of comb or foundation furnished each; and lastly, the *exact* amount of honey produced by each, and the condition they are in for winter.

How many will try it? If we experiment faithfully we may perhaps satisfy ourselves, if we cannot convince others, of the relative merits of each.

Fiat justitia ruat cælum.

Plainfield, Mich., Jan., 1880.

For the INSTRUCTOR.]

Shipping Queens.

MRS. L. HARRISON.

Last season desiring to ship some queens by mail, we procured "Harris' provisioned mail and introducing cages." We forwarded a queen in one of these cages to Kansas, and in due time received notice that the queen and her attendants were dead, on arrival. We immediately mailed another one, in a Harris cage. Before doing so, however, we poured water into the cage until the provision was somewhat moistened, and also put in a piece of sponge saturated with honey. This time the queen made the journey in safety. These cages are well made, and we consider the introducing part alone, worth all that we paid for them. We would like to have others "tell their experience" with provisioned mailing cages without honey or water, if the editor will permit us to hold an old fashioned Methodist class meeting in the INSTRUCTOR.

Peoria, Ill, Dec. 28, '80.

P. S. We don't know that we shall be able to write monthly, and shall probably have nothing to sell, as queens are sold so

cheaply that our time is worth more to us in some other way; but we like the ring of the metal in your INSTRUCTOR, and will contribute our mite, whenever we can.

Mrs. L. H.

Thanks, Mrs. Harrison, for your kind words. Yours is the right spirit—a willingness to contribute, as far as you can, to the general fund, through the INSTRUCTOR, for the benefit of the "bee-keeping fraternity." As to the old-fashioned class meeting, the columns of the INSTRUCTOR are yours; that is, they belong to the bee-keepers of America for the legitimate discussion of all subjects pertaining to bee-keeping, or that the producers and consumers of honey are in any way interested. In this respect we desire to publish a practical journal, and make it just what its name imports, an INSTRUCTOR to the great mass of bee-keepers.

To all then we say: In one sense the INSTRUCTOR is yours, and just what it shall be, depends greatly on your efforts to aid us in our arduous undertaking.

For the INSTRUCTOR.]

Use of Comb Foundation.—Will it Pay?—A Case.—Other Items.

JESSE MILLER.

The use of Comb Foundation, among many persons here, is but little understood; and the question is often asked: "Will its use pay me?" In reply, would say, not only pay, but *pay well*, and give a *large* return; and if to me why not to others.

Permit me to give one case to illustrate: In 1879 I bought a colony of black bees (naturally swarmed), but

they came late, and the season a poor one. Hived them in one of A. I. Root's new story and a half hives. They did not want to stay, so the 2nd day, they "swarmed out;" I had them put into the same hive again, and gave them a frame containing young brood, honey, &c., from another colony; also 9 frames of A. I. Root's wired foundation. They went to work like heroes, and in about twelve days the frames were filled with honey, brood and eggs. The season was so near closed they made no surplus honey, and none was extracted. This may not have been an unusual yield, but considering the poor season, the late swarming and all, we thought it good: better than bees had been doing for us, where comb had to be built without foundation.

A friend had a swarm of black bees about the same time; he put them into a box hive, and when winter come, they had built comb enough for a fair brood nest; made a little honey, but not near enough to winter them. He took them into the house during cold weather, fed them syrup freely, using a piece of honey-comb for a feeder; which, by the way, is servicable, cheap and answers a good purpose. He got them through winter in pretty good condition.

Last spring he bought a Langstroth hive, had the bees transferred, gave them comb foundation, and they gave a good return for the season of 1880.

Another question: "Whose make of comb foundation shall I use?" I can not answer, but have a choice. Use new, heavy foundation, for brood frames, as age causes it to become brittle as it dries, and it is much more apt to break down when the bees cluster on it. At least such has been my experience. For section boxes use thin, only, for as bees will appropriate only as much as is really needed, if the foundation is too thick a yellow streak will be left—as I have seen—that looks bad, tastes worse, and is tough and disgusting. Send for samples

and select the best you can, and test for yourself. The cheapest is not always the best, but the *best is always* the cheapest. Apiarists are asking if comb foundation is not costing buyers too much, with bees-wax at present prices, with honey at only 12 to 15 cents. Foundation will pay a large interest. To test it, try a colony with comb foundation, and an equally good one without, and note the result.

There is no person here making or keeping "supplies" for sale, or to exhibit to bee-keepers. I am often asked as to prices, the cheapest, the best, &c. To many a smoker is a curiosity; so is comb foundation.

If supply keepers wish to send "samples" with prices, their cards, or circulars, I will show them to our bee-keepers, who are generally farmers, and keep a few colonies only. Italian queens were in demand here last season, greater than ever before, showing a wish to improve their stock.

An order for 30 queens was sent too late to be filled, from three of our leading Apiarists. One dozen by a keeper having 100 colonies; one dozen by a keeper having 60 colonies, and a half dozen by another having 30 colonies.

Alliance, Ohio, Dec., 1880.

For the INSTRUCTOR.]

How I Prepare My Bees for Winter.

O. A. CORY.

As correspondence is solicited for "our little journal" I thought it might not be amiss to write a few lines for the INSTRUCTOR, by which, in giving my mode of wintering, I may call forth the opinions of bee-keepers more experienced than I, and more able to write for the benefit of others.

I commenced with four colonies in the spring; divided two in June and bought

some, and went into winter quarters with nineteen stands. I started to divide them in June (as increase of colonies was my object), but pasturage failed quite suddenly, and dividing became dangerous. I Italianized them in July, with good success, losing but one queen; bought my queens of Riegel & Drum, and had them tested before sent.

I put them into winter quarters on the 18th of October, and will describe how I proceeded: I bought store boxes (or made boxes for the purpose), considerably larger than my hives, and bored two $\frac{3}{4}$ inch holes on one side, just at the bottom, about three inches apart, split out between them, which made an opening $\frac{3}{4}$ x 3 inches, set each hive in a box with the entrance exactly opposite this hole, packed the space around and above the hive with chaff, to the depth of four to eight inches, pressing it down tight, and then covered the whole so as to exclude rain or mice. With some I removed the outside box, and then put them in boxes as before, letting the moisture escape up through the chaff. When feeding is necessary this way is desirable, as the feeders may remain over the brood chamber, and by scraping off the chaff you can feed them at any time. By actual test I find that they will come up in the feeder to help themselves when the thermometer marks zero. I advise, in using this plan, to let your colonies remain on their summer stands; then they can fly out when the temperature will justify.

I use the Royal and Combination hives; prefer the Combination on account of depth of frames. I believe it the best to winter in, though it may not be so good for obtaining surplus honey; but we must first learn how to *keep* bees, and then how to secure the most *sweet* in the best shape. In transferring upwards of thirty colonies last year, from all manner of shaped boxes, I found that the natural instinct leads them to occupy for a brood chamber a space nearly square,

ranging from twelve to fourteen inches; therefore in complying with their natural habits (as I believe we should) it will require frames deeper than eight inches. This is somewhat theory, however, and I shall experiment until satisfied which is best. I believe that every apiarist should thus experiment, as their habits may differ in different latitudes.

I had expected to give my mode of packing for winter before this, so that the honey gatherers might have had better care tendered them here than they generally receive—being wonderfully neglected—but circumstances have prevented. If you will excuse me this time I will promise not to bother your columns soon again.

Believing that apiculture will be benefited most by a family chat through your columns, I hope to hear more from our brothers.

Frankfort, Ohio, Dec 30, 1880.

For the INSTRUCTOR.]

Queen Rearing.

“QUEEN REARER.”

After experimenting with nearly all the different methods of artificially hatching queens, we have come to the conclusion that the bees know about as much in relation to that branch of apiculture as we do, and perhaps more. We have therefore discarded all artificial methods and proceed as described below:

When the season becomes far enough advanced, we remove the queen from the stock determined on as the one to use for building cells (and here let us say that if we wish many cells we must feed liberally, if honey is not coming in plentifully), and note carefully the exact date when we deprive them of their queen. If we do not have queen registering cards, or slates, we can use a book and number our hives, or use a piece of cull section box (which will answer just as

well) in the place of a slate. At all events we should be very careful to note the *exact* date; also the same when cells are begun and capped. Now when cells near maturity feed the colony heavily to prevent their tearing the cells down, although this is not essential, if honey is coming in freely from the fields.

When cells are fully ripe, which will be in about fourteen days, if we give them only eggs at the time we deprive them of their queen, they are ready to cut and insert into nuclei, or if we can afford the time, leave them in the hive till they hatch, looking at them every hour or two, when they begin hatching, and as soon as they are hatched remove and introduce them to nuclei, taking care not to over-look any of the newly hatched queens.

In this way we will secure a fine lot of queens without the expense of oil or queen-nursery; and we find them easier to introduce, and besides they become fertilized sooner, which is quite an item.

In this way we have taken as many as 25 queens from one colony, and have spent no more time watching them than we would with the nursery, and *we think* have secured better queens than we would if reared by "hot house" experiments. At least they are more readily accepted by the bees, and with us are fertilized from one to three days sooner.

For the INSTRUCTOR.]

How to Sell Honey.—Another New Idea.

J. H. MARTIN

We from time to time get advice from some of the brethren in relation to developing our home market. We have made several efforts in this direction, and have in some respects been successful and in others our hopes have been blasted. If the producer has the time and *talent*, to peddle his honey from house to

house he will be quite successful in almost any locality, for many will purchase who would not go half a mile to buy it.

We have sold over 4000 lbs. in about six weeks, in this way, but to do it you must have a clear field and no opposition.

We have also put up honey in pint cans, but the sales by this plan are slow; the honey soon candies, and people then pass it by. We also put up candied honey in small boxes a few years ago, but with indifferent success. Now we have a new idea in relation to the sale of candied honey, and we wish your readers who have honey to sell would give the idea a trial and report their success.

Every one who has handled honey, knows that if allowed to candy down solid in a cold room, that it can be cut out in solid chunks, and it will retain the chunk shape in the warmest room in your house. Now for our new plan:—Provide yourself with a tray, or several of them; you can make them of wood, but they are better made of tin. Make the tray three inches deep, and two by three feet. Warm up your candied honey, so you can mash it into a homogeneous mass, and fill your tray. Now have several thin strips of wood, or tin three inches wide and insert in the honey so as to cut the honey into cubes of $2\frac{3}{4} \times 2\frac{3}{4}$, and set your tray away in a cool place. It will soon candy solid, and you can then separate your cubes and you will have just a pound in each cube. In like manner you can make cubes of honey weighing three and five pounds.

Now place a neatly made glass case in your nearest store and expose this honey for sale. Provide clean paper to wrap the chunks in or provide small paper pails. In this way people soon learn to eat candied honey. There is no daubing, which store-keepers dislike. Comb honey can be placed in the case with the candied honey, and the purchaser

can suit himself, as to price, quality and quantity.

Hartford, N. Y., Jan. 1, 1880.

For the INSTRUCTOR.]

Preparation for the Future.

J. KLINGER.

It is a little too cold to write about bees to-night, with the thermometer at zero and threatening snow, but now we can let our bees alone, and have time to think on and plan future operations, and perhaps correct some of our former mistakes. One of the mistakes we are prone to make is to forget our bees now until we are reminded by their busy hum that we are still the owners of some of these precious little pets; forget to give them any attention during the winter, or provide for them a suitable place to store the nectar they extract from the flowers, or even to read the INSTRUCTOR or other bee literature, to guide us in our operations for the future. Now is the time to arouse ourselves a little, read the experience of others, and weigh the opinions of men experienced in the business. It will prevent much perplexity and avoid a multitude of questions hereafter. If you are using the old box hive and the brimstone rag yet, stop and think a little whether there is not a better way to keep bees. You know that only a very few years ago honey was so high-priced that poor people could not afford the luxury on their tables. You know that it is only a very short time since you have heard of shipping honey to the large cities and over to Europe. You could hardly believe that tons of honey would ever freight our ships over the ocean, and yet all this has come to be a reality.

Now, all this change of honey production is not without a cause. It is not that we consume less ourselves, for we use more than ever, sweetening our pies and cakes with honey. It is not because

the country has so many other sweets as to make a superabundance of honey. Our sugar maple is fast disappearing and the blue smoke ceases to curl among the trees, from the fires at the sugar camp. None of these have caused it; but apiculture has been improved so that we make more honey and have better facilities for getting it from the bees. We need not now let old colonies keep their store-houses so full that they freeze, clustered on the massive sheets of comb, until they are so reduced as to become an easy prey to the bee-moth; or should there be a good honey season let them stop work for the want of room to store their honey. But now if the body of the hive gets too full, we give them boxes on the top and side to fill; and when we can't save it in this way we extract it, and by so doing we get three or four times as much, and better honey than in the old way.

We formerly had to remain at home from church to watch and hive the bees when they swarmed; and how often were we vexed after watching them for weeks to see them come out and strike a "bee line" for the woods; and then when the season was over our young swarms had left us, and we had only the old weather-beaten hives, that we had expected to put the brimstone match under, to get a lot of what we called *honey*, rank with beebread and young bees, that were always squeezed out with it; and which was not to be compared to the pure nectar we now get, or to the snow-white combs that now tempt our palates.

Now we do the swarming. We divide our stocks when there is danger of them swarming, and none go to the woods. No days and weeks are spent in watching the bees. They have from force of circumstances become almost Puritan in their habits, and seldom emigrate on the Sabbath day. They work six days and throw in the seventh for good measure, and seem to be happy and contented.

Think of these things these long winter

evenings, and read what other men have learned by study and experience. Get the best hives you can find; have them painted and well dried, and when the busy season comes for bee work your bees won't smell so of green paint, or that are so dauby, that you are yourself afraid to touch them. Study the different extractors, and if you have a half dozen colonies it will pay you to get one. Muth's and the Gas-pipe extractors are both good. And being thus prepared go intelligently to work and you will learn why honey is more plentiful and better than it used to be.

Upper Sandusky, O.

For the INSTRUCTOR.]

Modern Queen Breeding.

IS IT IN FULL ACCORDANCE WITH NATURE'S PLAN?

BY THE EDITOR.

The business of queen breeding has of late years, especially since the introduction of the Italian bee to this country, assumed vast proportions, and certainly deserves the most careful investigations of bee-keepers everywhere. It is a subject of paramount importance, as we all know that the value of a colony of bees depends entirely upon the character of the queen, for she either makes it populous, industrious and productive, or allows it to dwindle and die, for the lack of power to prevent it. Everybody who has kept bees, even for a short time, must have noticed the great difference to be found in his colonies, that to all appearances seem to be circumstanced just alike, but which really are in one respect entirely different. For while one is blessed with a good, prolific, vigorous queen, another is cursed with a queen of a comparatively worthless character. While one produces an abundance of stores for its own use, and a large surplus for its own-

er, the other drags along in a half-storeless way, scant of bees, and still more and more scant of stores, until it is finally numbered among the things that were. Now, as there can be no effect without a cause, there must be some cause for this vast difference in the quality of queens. There may be some difference in the different strains of bees, but we believe the conditions under which queens are reared has more influence upon their characters than all other causes combined.

But whatever is wrong in this respect, we may be able to some extent to remedy, if we can only find out what it is. As to modern queen rearing then, let us see how it comports with "nature's plan." Most of the bee-keepers of note are trying their hands at queen breeding, and we believe, from experience and published results, that a majority of them are failures, for poor queens seem to be the rule, while good ones are the exception. As a general thing these queens are reared in nuclei or weak colonies, and under conditions entirely different from those reared in the natural way. We know that all do not resort to this plan, but a majority do; hence the great number of worthless queens. Thus you will readily see that we believe it is the conditions under which queens are reared that stamps them with either good or bad qualities. We believe that nature should be followed as closely as possible; that is, that queens should be reared under the same conditions as those attending natural swarming.

Just what *all* these conditions are no man knows, for none of us have the knowledge to *fully* understand the instincts of the busy little worker. We know, however, that one condition is, a *hive full* of bees; which condition perhaps includes all others, such as bees of all ages, from the weather-beaten "Gleaner in the fields," to the "tiny babe in the manger;" also eggs and brood in all stages from which the bees can select to raise their new queen. The heat is also great

and uniform in large, full colonies, which we have no doubt the Royal infant requires from the time the egg is hatched until she emerges from her crystal state to assert her Royal prerogative.

All these conditions, and others pertaining only to strong colonies (and of which we have but slight knowledge) we believe to be really necessary to the full development of a No. 1 queen. If so, then, the question arises: Are they to be found in the nuclei system by which queen rearing is principally carried on? All apiarists, we believe, agree that the manipulating of the queen cell and the furnishing of the royal jelly belongs almost exclusively to the young bees. Just how, or in what manner, this royal food is furnished to stimulate and develop the young queen, is beyond the ability of the wisest apiarists to explain. We know, however, that large quantities of this food is furnished the embryo queen; for if we examine a queen cell a day or two before it is capped over, we will find that the Royal Infant has the appearance of being literally drowned in this royal developing food. This food then, in abundance, is no doubt essential to the development of a good, healthy, prolific queen. And when sufficient, and accompanied by all the other necessary conditions, we believe the result will almost uniformly be a good queen.

Now, the question arises: Can these conditions be secured in weak colonies or nuclei? We claim they cannot, for we believe they are lacking in almost every essential condition. Being weak in bees they are not able to furnish the necessary heat or a sufficient number of nurse bees to attend to the duties of the hive and the fullest development of the virgin queen. For this reason we believe there are queens of all grades, from the fertile worker (which in one sense may be called a queen) to the best and most prolific queens that our apiaries afford. And may it not be that the quality of our

queens depend almost entirely upon the strength and condition of the colony in which they are reared? All admit that the egg from which the queen is reared is the same as that producing the worker bee; also, that the worker bees are undeveloped females. To produce the queen the cell is enlarged, the royal jelly supplied and the development of the insect hastened some five or six days; and if all the conditions are perfect we may expect a perfect queen. In the first place the egg or larvæ should be the proper age, the number of bees sufficient to produce the proper degree of heat, and also to manipulate the cell and furnish an abundance of food for her royal highness. Now, all colonies do not give these and other necessary conditions, in the same degree; consequently we have the good, bad, and indifferent queens. An extreme case, where there is a lack of the true conditions, is, where a colony, after running down, attempts to supercede a worthless queen. In some cases they seem to discover their condition too late to rear a queen, and are perhaps forced to take larvæ in an advanced state, from which, after manipulating it the best they can, in their run-down condition, they only get that detestable pest, a Fertile Worker.

Now, we don't wish to be understood as condemning queen rearing, if good, strong colonies are used for this purpose; but we don't believe that nuclei or weak colonies will, one time in ten, produce choice, desirable queens. This is a matter of vital importance to bee-keepers and should be studied and carefully considered by all who desire true progress in the science of bee culture.

For the INSTRUCTOR.]

Questions Answered.

SAMUEL D. RIEGEL.

By the request of the conductor of the Question Box department of the INSTRUCTOR, for December, I will endeavor

to answer his questions as follows:

1st. "In root grafting apples do they use small roots from old trees, or are the young trees cut at the collar?"

ANS. To my knowledge, nurserymen never use small roots from old trees. Plants, or sprouts, one year from the seed, are generally used, and are considered *best*, at that age. When well grown, these make from one to three cuts $2\frac{1}{2}$ to 3 inches long, varying according to length and thickness of sprouts.

2d. "How are grape vines grafted?"

ANS. The grafting of grape vines is very different, in some respects, to that of grafting fruit trees. The first thing necessary to success is good wood for grafts, well matured, with sound buds, or eyes, of which from 2 to 3 are necessary to each graft. The grafting can be done at any time during the winter or spring, just so it is not delayed until bleeding (running of the sap) commences. During warm days in February is a good time, although it can usually be done in March, if the sap has not commenced flowing. To graft remove the ground from four to six inches deep around the base of the vine; saw off the root three or four inches below the surface of the ground, and with a sharp, thin-bladed knife split (or rather cut) a cleft in the center of the root. With a wedge of hard wood open the cleft; then take a graft and cut a wedge, just below a bud to fit the cleft on one side, making the inner bark of each meet as near as can possibly be done, as much will depend on this *nice fitting*, to make them grow. If the root is strong enough to clamp the graft firmly, no tying in will be necessary; otherwise tie with any kind of twine; use no wax, but fill up around the graft with earth to the upper bud, pressing it firmly to root and graft. Over this place a little straw or some grass, and on this at least six inches of ground, to prevent frost from getting in and lifting up the graft. Leave in this way un-

til the buds on vines in the open air begin to burst in spring, then remove the ground and straw—being careful not to injure the bud, which will generally be much swollen by this time. Grow but one cane the first year. When the root is strong, canes from 15 to 20 feet long can often be grown the first year after grafting.

Adelphi, Ohio.

For the INSTRUCTOR.]

Shall we Induce the Importation of New Races of Bees?

L. H. PAMMEL, JR.

The enthusiast says yes; but the man of prudence says no. Let every bee-keeper for a moment consider the true merits of the races already introduced here. Are they not prolific, good honey gatherers and adapted to our climate? If they fail to gather surplus some seasons, it is either through negligence on the part of the bee-keeper, or from the arbitrary powers of nature.

Some bee-keepers say: "We want to import a race of bees that will work on red clover." They do not show wisdom by making such wild assertions; for has not nature made ample provision for races of bees that have a shorter proboscis, or tongue? Look at the thousands of wild flowers blooming in our forests and meadows, and you can see both the Italian and black bees entering their cavities in search of honey, and filling themselves with the nectar extracted from these beautiful flowers of nature. Look at our large bumble-bees; they are not constructed to become great honey gatherers (although they work on the red clover) as they are so large and clumsy that they cannot enter the blossoms with as much ease as the smaller species of bees; neither do they show such signs of activity; and for these, or some other reasons, are worthless. There are many Asiatic species which I believe have a

proboscis large enough for our red clover, but I doubt whether American ingenuity will ever hive them, or import them to our shores; neither do I think it desirable, not because they may be too clumsy, but because I believe the introduction to be of no use. As Wallace says: "No barrier is in the road for them if they want to sting." Such bees I believe would be a nuisance to us; for no human being would dare to go near them. "Let well enough alone," should be the motto of every bee-keeper. Our aim should be to improve those races which have stood the test and are warranted to be superior to the common bee. The law of "the survival of the fittest," will not improve our gentle Italians, but through careful "selection" we can.

LaCrosse, Wisconsin, Jan., 1881.

How to Feed Bees in Winter.

[By Prof. J. Hasbrouck in *Bee-Keepers' Magazine*, in answer to the question, "How shall I feed my bees to get them through the winter?"]

Make a candy the same as we have recommended for queen mailing cages. Take 4 parts, by measure, of granulated sugar, and 1 part water.—Don't make more than 10 lbs. at a time. Put the ingredients into a large tin milk pan, and set it over a quick fire. Let it boil about 5 minutes, then set the pan into a larger vessel of cold water, or into the snow, and stir briskly till it begins to grow white and creamy. Now have some boxes made the size of the top of the brood nest in your hive, of thin boards, one inch deep. Pour the candy into these as quickly as you can, before it gets too hard to spoon. This candy is moist and soft, yet it will not run, and is magnificent food for bees at any time. Turn one of these boxes upside down over the top of the frames of any hive short of honey, and put a thick chaff

cushion or several thicknesses of woolen cloth snugly over it, and that hive is safe till the box needs replenishing. Examine all hives about which you have any doubt the middle of the first nice day, when the thermometer is 40° or 45°, and if their honey is getting low give them such a box of candy, and never let a colony starve.

Letters.

HARTFORD, N. Y.

Editor Bee-Keepers' Instructor:

Dear Sir: I must say you are the most liberal editor of a bee journal I have come across yet. The majority of them want the subscription price, and all the articles we can write for them into the bargain. I am happy to find the liberal bee journals, like our presidents, of late, hail from Ohio. Your paper deserves success, and I will aid you all I can. I shall not promise you many subscribers, for Bro. Root has been so liberal with me that I have a good many subscribers for *Gleanings* in this county. Respectfully,
Dec. 28, 1880. J. H. MARTIN.

OAKLAND, CLINTON CO., O.

Editor Bee-Keepers' Instructor:

The past season has been a very poor one. Very few swarms and but little honey. From one-half to two-thirds of my bees are dead. Some are leaving an abundance of honey. I have nine out of fifteen left, with a prospect of more dying. They were my strongest colonies. I had seven nuclei; two of them have frozen to death. I moved the 1st. of Nov., but did not move my bees until the first snow. Then the first day that was warm enough to fly, they would come out and start straight off without taking their bearings, and became very much demoralized. The consequence was, a large per cent. perished in the snow. This has left my stocks rather weak. I think I have

learned a lesson this season, it being my first experience with bees. Will bees work on Hungarian grass or Millet? Success to the INSTRUCTOR.

Jan. 3, '80. HENRY VAN TRESS.

We are glad to hear from you, Bro. Van Tress, or any other brother of the fraternity, even if you are beginners in the bee business.—Published failures may have an excellent influence, as well as published successes, by enabling the inexperienced to avoid the mistakes of others. After having moved your bees you should have placed obstructions before each of your hives, which would have caused the bees to mark their locality and take their bearings. A board or two partly obstructing the front of the hive, answers a very good purpose. Your question as to Hungarian grass or Millet is referred to Bro. Wright, Editor of Question Box, who will give you an answer in our next issue.

Question Box.

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

1. In the last INSTRUCTOR you say that "In fall feed candy," etc. Now, what would you feed in winter? We can't wait till fall to feed.

2. What makes the bees have dysentery? They have it badly.

3. What will cure them? S. T.
Lansingbury, N. Y.

1st. In winter feed only sealed honey. We have experimented considerable and are fully satisfied that it does not pay to try to feed up stocks that are deficient in stores after October, unless you have plenty of sealed honey in frames to give them. We have tried candy after friend Root's plan, have fed candied honey, liq-

uid honey in perforated feeders, sugar syrup; in fact, we have tried every way that we ever heard or could think of, and even if we did manage to bring the stock through, we had spent more time and money than it was worth twice over. Better feed early, or double up all needy stocks with those having plenty.

2d. Dysentery in bees is generally supposed to be caused by improper food; but we have good reasons for believing that it is a disease, and that it is aggravated by improper food, or by disturbing them in cold weather. In proof of this, we often see our strongest stocks suffer, while our weak ones are healthy; also *vice versa*, all having the same care, and as near as possible the same stores. Sorry to hear your bees are affected.

3d. We know of no remedy but warm weather. Should there come a warm day soon, so they could have a cleansing flight, it would help them; but if they are badly affected, look out for dwindling in the Spring.

1. I notice in reports of the last National Convention that there was much said about Melilot as a honey plant. Have you ever tried it? Please give description of it, so that I may be able to recognize, if I should see it.

2. Give your opinion of the Holy land bees. How do they look and are they any better than Italians?

3. Which is the best smoker, and are they all patented? A. R. C.
Columbus, Ohio.

1st. We have a little Melilot, but not enough to test it satisfactorily. It is a tall, branching perennial, growing from three to six feet high, with oblong leaflets truncately notched at the end, and covered with loose racemes of white flowers. Its scientific name is *Melilotus alba*, sometimes called Bokhara. It is nothing more nor less than what is commonly called sweet clover, as it is a very sweet-smelling plant, especially when drying. Belongs to the Pulse family and the leaves somewhat resemble clover. *M. officinalis*

is another variety, not so common; a smaller plant, blunt leaflets and yellow flowers.

2d. Holy land bees have not been a success with us, but perhaps they are not genuine. They resemble the Italians very closely, and are probably of the same species. It remains to be seen whether they are any better or not.

3d. We cannot tell you, friend C., which is the best smoker. Even if we had a choice we dare not say which we would choose, for it would get us into trouble. We do not manufacture smokers; if we did *ours* would be the best. Neither King's, Scovill's nor Root's are patented.

Editor's Corner.

We have received quite a number of subscribers within a few days, and kind words of encouragement from many of the prominent bee men of the country. To all such we return our thanks, and shall strive to merit their confidence and support in the future.

We hope that those who are receiving sample copies of the INSTRUCTOR will use their influence in securing subscribers, and as far as possible, aid us in extending its circulation. If you cannot do better, try and send in fifty cents by postal order, or in stamps, for your own subscription, and it will be thankfully received. We would prefer, of course, that you would get your neighbor or neighbors, to join with you, but if this cannot be done we would be pleased to accept the next best. Everybody, even if they have no more than one stand of bees, ought to take a bee paper of some kind, that they may profit from the experience of others.

We desire to say a few words to all who are communicating with us, and especially to those who are subscribing

for the INSTRUCTOR, or sending to us for sample copies. In the first place, then, you should remember that we are not familiar with the names of *all* the post-offices and people in the country, and therefore are sometimes very much puzzled when it comes to guessing at names. We are anxious to get your names *just right*, so that there will be no mistakes about them; but how are we to do it, if you do not make some distinction in the characters with which your name is written? Write your own name, and the names of all places, persons and things *plain*, and thus avoid mistakes, by our being forced to guess at them.

KEEPING BEES DRY AND WARM IN WINTER.—The great importance of keeping bees dry and warm through the winter season is admitted by all; and any process by which this can be accomplished is worthy of the serious consideration of the bee-keeper. A new idea, to most of us at least, has recently been advanced by some of the bee-keepers, viz: that the great desideratum of dryness and heat may be obtained by chemical means, by the use of quick lime in the hive, to absorb the moisture. It is well known that quick lime has a strong affinity for water, and if it could be properly exposed to the dampness of the hive, it would absorb the moisture arising from condensation, and from the breath of the bees, and would keep the hive comparatively dry; and while doing so would keep up a degree of warmth proportionate to the amount of moisture taken up. It would also absorb the carbonic acid, and act as a good disinfectant should the air of the hive at any time become foul or vitiated. To take up the carbonic acid gas, however, some of the lime would have to be placed near the bottom of the hive, as this acid is heavier than common air, and naturally sinks to the bottom of the hive. To use lime for this purpose it would have

to be renewed several times during a winter, as it will cease to take up moisture as soon as it becomes, what we generally term, "air slacked." We hope our bee-keepers will make some experiments in this direction and report their success or failure, as the case may be. We suggest that if experiments are made that the lime be placed (if it can be done) at the sides, and reaching near the bottom of the hive.

JANUARY AND FEBRUARY MANAGEMENT.—Taking it for granted that all apiarists have their bees properly cared for either in dry cellars or on their summer stands, we will only give the few directions that seem to be necessary at this particular season of the year. One important point is to keep your bees as quiet as possible, and shade the entrance to the hive, so that the sunshine will not tempt them to fly out, unless the weather is sufficiently warm for them to take a fly with safety. If a warm dry day comes, let them have the sunshine, and take a good fly, for it will greatly benefit them. It will not injure them to be snowed in by a dry light snow, but as a rule we prefer keeping the entrance clean; for a few hours, if the snow becomes wet and packed, will do fatal work for your bees. The bottoms of hives should be kept clear of obstructions, and especially of dead bees, for if kept in the hive they will prove injurious to the colony. If you are wintering your bees indoors they should be taken to their summer stands (*very quietly*), the first nice warm day in February, and when they have ceased to fly, should be returned *quietly* to the cellar. Rye, or oat meal, may be fed in northern latitudes, in some sheltered nook, protected from the chilly winds, during *pleasant* days in February to stimulate to brood raising. We have said that bees should be kept as quiet as possible during these months, but no one should let their

bees starve for fear of disturbing them a little, by carefully giving them food. Liquid food should never be given when the weather is too cold to stimulate to brood rearing. If your bees are short of stores, or if they have the dysentery they should be given candy made from granulated sugar. Perhaps there is nothing better than Prof. Hasbrouck's recipe and instructions found in this number of the **INSTRUCTOR**. His instructions are excellent on this point; and we will only supplement them by saying that if the weather continues too cold to examine your bees on their summer stands, and you fear they will starve, take them into a partially darkened room, with the temperature a little above the freezing point, and feed them as he directs, except that we would recommend that four or five half inch strips be laid under the cake of candy, so that the bees will have almost the entire surface of candy to work upon. As soon as supplied with food remove them carefully to their summer stands. Should you be forced to commence feeding, it must be kept up faithfully until the bees can supply themselves from natural sources.

The Northeastern Bee-Keepers' Association will hold their Eleventh Annual Convention in the Common Council Chambers at Utica, N. Y., on the 2d, 3d and 4th days of February, 1881. This Association has justly gained a high reputation in the past, and from the efforts that its Executive Committee is making we feel assured that it will out-do all former efforts on such occasions. In point of fact this Convention bids fair to be one of the largest and most interesting ever held on our continent. Everybody who is in any way interested in bees or honey, should make it a point, if possible, to be present. A large number of the leading bee men and women of the country will be present, and essays will be contributed, or addresses delivered by the following noted apiarists: Capt. W. F. Williams, Prof. J. Hasbrouck, Mrs. Frances Dunham, James Heddon, H. A. Burch, J. Y. Detwiler, Chas. Dadant, A. G. Thurber, Julius

Hoffman, C. P. Dadant, L. C. Root, W. A. House, A. J. King, and many others. The following prizes will be awarded for essays, implements, etc.: For best essay, The different races of bees and their crosses, gold medal; Wintering Bees, gold medal; Marketing Honey, gold medal; How can we make the apiary the most profitable, gold medal; and for the best essay upon any subject outside of those mentioned, one tested Cyprian Queen, donated by Mr. L. C. Root. For best display of implements, diploma; best comb foundation for brood chamber, diploma; best comb foundation for surplus boxes, diploma; best honey extractor, diploma; best bee-smoker, diploma; the most practical bee hive, diploma; the best crate of honey in the most marketable shape, \$1; the best package of extracted honey, \$1, the neatest and best honey crate, with section boxes (cost, quality and finish considered), one tested Italian queen, donated by Mr. Geo. W. House. Articles sent to the secretary will be placed in position so as to compare favorably with others on exhibition, and will be sold or otherwise disposed of as the owner may direct. It is expected that the competition for the prizes will be lively. Let everybody contribute to the general interest of the occasion. For particulars call on or write to George W. House, Sec'y, Fayetteville, Onondaga county, N. Y.

While it is our earnest desire that all our subscribers shall continue their subscriptions, we are aware that some will fail to do so. In such cases please drop us a postal, so that there may be a full and friendly understanding between us.

Business Matters.

No Club Rates.

No discount is allowed to clubs on the INSTRUCTOR. Club rates are rather an injustice to part of the subscribers of any publication, it not being fair to charge one person from one-fourth to one-third more than others, simply because his name was not sent with a club. We have put the price as low as we possibly could, to afford a first-class journal, and have but one price to all. We offer, however, the very liberal commission of **15 CTS.** on each yearly subscription, as a remuneration for the time and trouble of those who wish to get up clubs. Sample copies sent free on application.

Clubbing List.

The BEE-KEEPERS' INSTRUCTOR and any of the following Bee journals, will be sent to one address, one year, at rates given in right hand column below. The figures on the left give the regular subscription price of each:

BEE-KEEPERS' INSTRUCTOR.....	50c	
With American Bee Journal.....	\$2.00	\$2 15
" Bee-Keepers' Magazine.....	1 00	1 25
" Gleanings in Bee-Culture.....	1 00	1 30
" Bee-Keepers' Exchange.....	.75	1 10
" All the above Bee Journals.....		3 25
" The Bee-Keepers' Guide.....	.50	80
" The Bee-Keepers' Text Book.....	.75	1 00
" Cooks' Manual of the Apiary (cloth).....	1 25	1 60

All post-office money orders should be made payable at Circleville (our nearest money order office), as the post-office at this place is not a money order office. Money sent this way, or by registered letter, will be at our risk. Although it is generally safe to send sums of one dollar or less in a common letter, when sent thus it must be at sender's risk.

CHOICE BEE CANDY

In large flat sticks, or in large cakes to be wired into frames, kept constantly on hand by **G. F. WITTICH, Circleville, O.,** at **15 Cents per Pound.** 1-

H. E. Hodge, Cambridge, Mich, says: I have been afflicted with Asthma for years; an "Only Lung Pad" gave me immediate relief. I can recommend it as the greatest remedy ever produced. See adv.

The *American Bee Journal*, the only weekly in the United States devoted to bee culture, is published at Chicago, Ill., by T. G. Newman, at \$2.00 per annum, or 50 cents for the first number of each month, and \$1.00 per year for the first and third numbers of each month. Send for sample copy.

BEFORE PURCHASING

Imported or Home-Bred Italian or Cyprian Queens, Bees by the lb., nucleus or colony, supplies for the apiary, Small Fruit Plants, seeds of honey plants, etc., send description of what you want to us, and get our prices. We guarantee them to be as low as the lowest, and satisfactory in every way.—Material for 8 frame Langstroth hive with 7 inch cap, including frames, etc., ALL COMPLETE, ready to mail, 50 cts. each. All other supplies proportionately low. **5,000** Fine Basswood Trees, 5 to 10 feet, 70c. per dozen; \$5.00 per 100.

Give us a trial. We CAN and WILL please you.

F. L. WRIGHT,

PLAINFIELD, LIVINGSTON CO., MICH.

IMPROVED EXCELSIOR



KIDNEY PAD

CURE YOUR BACK ACHE

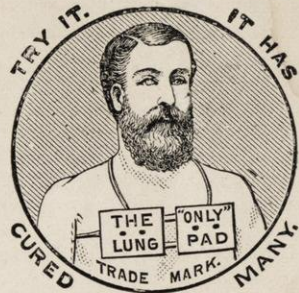
And all diseases of the Kidneys, Bladder and Urinary Organs by wearing the

Improved Excelsior Kidney Pad. It is a **Marvel of Healing and Relief.** **SIMPLE, SENSIBLE, DIRECT, PAINLESS, POWERFUL.**

It **CURES** where all else fails. A **Revelation and Revolution** in Medicine. Absorption, or direct application, as opposed to unsatisfactory internal medicines. Send for our treatise on Kidney troubles, sent free: Sold by druggists, or sent by mail on receipt of price, **\$2.60.** Address

THE 'ONLY' LUNG PAD Co.,
Detroit, Mich.

This is the Original and Genuine Kidney Pad. Ask for it and take no other.



Cures by **ABSORPTION** (Nature's way)

ALL Lung Diseases, Throat Diseases, Breathing Troubles.

It **Drives Into** the system curative agents and healing medicines.

It **Draws From** the diseased parts the poisons that cause death

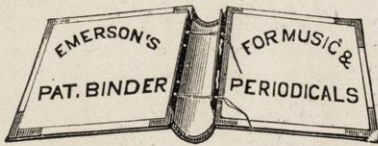
Thousands Testify to its Virtues. You can be Relieved & Cured.

Don't despair until you have tried this **Sensible, Easily Applied and Radically Effective Remedy.**

Sold by Druggists, or sent by mail on receipt of **Price, \$2.00,** by

THE 'ONLY' LUNG PAD Co.,
Detroit, Mich.

Send for Testimonials and our book, "Three Millions a Year." Sent free.



If you have never used a binder in which to file your periodicals, you can't scarcely have any idea how convenient they really are. We will furnish Emersons No. 0 binder, neatly lettered, "BEE-KEEPERS' INSTRUCTOR," in three qualities, for 40c, 50c and 65cts., post-paid.

Now is the time to get a binder in which to file the INSTRUCTOR for 1881, as you can insert each number as soon as received. We can also furnish Binders for other Periodicals. Let us know the size you want, and we will send you prices.

W. THOMAS & SON,
 Adelphi, O.

ITALIAN BEES AND QUEENS.

Full Colony, in good Combination hive, no surplus boxes,

Hive delivered on board cars here.....\$10 00
 With four Frame Nuclei in hive..... 7 00

Pure tested queens from imported mothers—

	1 Tested Queen in April and	
	May	\$3 00
2	do do do	5 50
3	do do do	7 75
6	do do do	15 00
1	do June do	2 50
2	do do do	4 50
3	do do do	6 50
6	do do do	12 00
1	do July and after	2 25
2	do do do	4 00
3	do do do	5 75
6	do do do	10 50



SAFE ARRIVAL GUARANTEED.

Address all orders to

RIEDEL & DRUM,
 Adelphi, Ross Co., O.

Heddon's Circular,

GIVING PRICES AND DESCRIPTIONS (WITH CUTS) OF

His Improved Langstroth Hive,

WHITE SPRUCE SECTIONS AND BOXES,
LATEST IMPROVED HONEY SCALES,
Queens and Full Colonies,

UNEXCELLED BEE FEEDER, THE THREE POPULAR AND BEST STYLES OF COMB FOUNDATION (WITH OR WITHOUT WIRES, IN L. ERAMES OR OUT), PROTECTORS, HONEY KNIVES, SMOKERS, GLASS, HONEY AND WAX EXTRACTORS, &c., &c., &c., TOGETHER WITH THE BEST HONEY-YIELDING AND MARKET GARDEN SMALL FRUIT PLANTS, is now ready to mail

A first-class Apiary for sale--a Bargain.

Please send your full address (P. O., Co. and State) to

JAMES HEDDON,
DOWAGIAC, CASS CO.,
Michigan.

NO CIRCULAR SENT UNLESS SOLICITED.

JOB PRINTING!

It is to every person's interest when they wish to purchase anything to go where they can get the most for their money. Therefore it is to the interest of all persons needing job work of any kind, to send their orders to this office. We have just received a new stock of plain and ornamental type, especially suitable for printing fine work, such as

**Bill, Letter and Note Heads,
Envelopes, Statements,
Circulars, Pamphlets,
Blanks of all kinds,
Cards, etc., etc.**

and as we make job printing by mail a specialty, we invite those in need of anything in that line to send us a postal describing exactly what they want and what quantity they want, and we will send them our price by return mail.

We furnish 100 FIRST-CLASS XX envelopes, with the purchaser's business card and address neatly printed on one corner, for 60c.; 200, \$1.00; 500, \$2.25; 1,000, \$4.00. All other work in proportion. Address W. THOMAS & SON, Adelphi, Ohio.

BEST IN THE WORLD!



AND

BI-CARB. SODA

Which is the same thing.

Impure Saleratus or Bi-Carb Soda (which is the same thing) is of a slightly dirty white color. It may appear white, examined by itself, but a COMPARISON WITH CHURCH & CO'S "ARM AND HAMMER" BRAND will show the difference.

See that your Saleratus and Baking Soda is white and PURE, as should be ALL SIMILAR SUBSTANCES used for food.