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THE BEE-KEEPERS'

INSTRUCTOR.



Webster Thomas, Editor.

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Meeting of the North-Eastern Bee-Keepers' Association.

The eleventh annual convention of this association was held at Utica, N. Y., on the 21, 31 and 4th of the present month, and seems to have been of unusual interest. The attendance was good, especially on the second day of the convention, the papers read were interesting and instructive, and the discussions spicy, "without waxing warm or personal," except in one instance where Mr. John Y. Detwiler, of Toledo, Ohio, in an essay on "Our Present Bee Literature—What it Accomplishes and how it Benefits the Apiarist," stirred up a hornet's nest by pitching into certain publications with great bitterness. This called out a reply from Mr. T. G. Newman (editor of the *American Bee Journal*), one of the parties attacked, and the compliments of the season, and a little more, were freely exchanged. After this spicy "passage at arms," which occurred on the first day of the session, everything passed off pleasantly and in order.

After reading a letter from A. J. King the first day of the session, on the adulteration of honey, Dr. March, Mr. Bacon and Mr. Van Deusen were appointed a committee to draft a petition on the subject to be presented to the Legislature. During the evening the Secretary read the following able essay, written by W. A. House, of Fayetteville, which was awarded the Cyprian queen, offered by L. C. Root as a prize for the best essay on any subject outside of those men-

tioned by the Association:

Foul Brood.

As the question of foul brood is again being brought before the public, I deem it my duty to contribute my experience with and treatment of this dread disease, hoping that it will be of benefit to the experienced bee-keeper as well as the novice. Foul brood is a disease that attacks the brood, causing it to become a putrid mass, in time destroying the colony, and unless it is given immediate and skillful attention, it will make sad havoc of all the bees in that locality. What are the symptoms and means of detecting the disease? Those who have had experience can readily detect it, in passing close in front of the hives, by a certain peculiar odor, which is indescribable. During a scarcity of honey, robbers will be almost constantly lurking around the diseased colony, and the bees will appear a little dull or dumpish. The novice would naturally pronounce the colony queenless, but in the hands of a close-observing and experienced apiarist, it would at once create a suspicion of foul brood. On opening the hive you find the sealed brood with sunken caps and a small perforation in the middle, and upon opening these cells with sunken caps you will find a brownish putrid mass, being tough and ropy and emitting an offensive smell. If the brood is found in this state in clusters of a few cells with cells of healthy brood intervening, the disease is about one-third advanced. The stage of the disease may also be determined by the color of the larvæ. The more advanced the disease, the darker the mass. What are the causes of foul brood? Some writers claim that this loathsome disease was imported. This can not be true, for I knew it to exist over thirty-five years ago, or long before the first importation of bees into this country. As to the first cause of foul brood I am unable

to give a positive answer, but I am of the opinion that it is owing to a certain state of the atmosphere; the disease attacking a colony that is in a certain, unknown condition, the same as the first case of small-pox is engendered. As soon as a colony is infected with the disease, unless thorough and skillful treatment be rendered at once, it will spread rapidly, attacking the whole apiary, and all the bees in the neighborhood. At this alarming stage it would be almost impossible to eradicate it, as bees in the woods would die with the disease, and thus leave an exposure that would last for years. The infection is contagious only by carrying honey, wax, propolis or pollen from the diseased hives. The swarm close by an infected hive is no more likely to become diseased than the one in the farthest corner of the apiary. I know this to be true. The disease is spread by robber bees getting into a hive already infected and carrying honey, pollen, wax, propolis or anything pertaining to the diseased hive, to their homes. Robbers will be lurking around a diseased colony almost constantly; and at the first favorable opportunity that is offered, the robber enters and is almost sure to get enough of the honey to transplant the infection to its own hive. Soon more bees effect an entrance, and finally the colony makes no resistance to the robbers, and many colonies in the apiary become engaged in carrying away the stores, etc., and with them the disease. If any pieces of comb, frames, or any part of the hive, boxes, stand-boards, honey, or in fact, anything pertaining to foul brood be exposed for months or even years afterward, the disease will surely be transmitted to your healthy colonies again. In many cases the disease is spread by the bee-keeper, who, after performing some manipulation with the diseased hive, goes to some healthy colony, opens the hive, and proceeds to supply their wants, without thoroughly washing his hands. The honey, propolis or wax thus conveyed from the one hive to the other, has the same effect as though the bees carried it. Then again, while operating with an infected hive, nine times in ten bees from other colonies will get enough honey to convey the disease. This is one cause why those who try experimenting with acids, etc., can not eradicate the disease from their apiaries. As soon as foul brood is discovered in any hive in the apiary, or with any

neighboring colonies, the apiarist should at once stop building up, or exchanging frames with any hives in the yard, as by so doing frames of brood or honey may be taken from a colony just attacked, and thus spread the disease very rapidly. A single bee getting one load of honey from the diseased hive will surely transmit the infection to a healthy colony, when the work of brood rearing is in progress.

If the disease should break out in a very few hives only, I would advise, by all means, the immediate destruction of the hives and contents, by burning them as soon as discovered. The boxes, stand-boards and everything pertaining to the hive at the time should also be burned. This is undoubtedly the only safe and sure remedy for the novice or inexperienced. In fact it would be the most available means of eradicating the disease with an experienced apiarist, when the infection is discovered before an exposure to the remaining colonies. But if healthy colonies have come in contact with the honey, pollen, propolis or wax of an infected hive, the skillful and experienced apiarist can save his bees and honey, by carefully adhering to the following mode of treatment: Remove the colonies to a close and darkened room. Shake the bees of each hive into an empty box that is new and clean. Let them remain there until they show signs of stupidity, when they will have consumed all the honey they carried with them. Now take the bees out of the box and put them into a new, clean hive filled with foundation, feeding them with sugar syrup, or honey that you know is not from a diseased hive; or, if it be in time of season when honey is coming in, they will gather from the fields to supply their wants the same as a young swarm. The honey may be extracted from the infected hive, but the utmost care must be taken not to expose a single drop of the honey, comb, or any part of the hive, where the bees can get it. The honey should be brought to a boiling heat and then sold to some manufacturer, so that it will not find its way back to the bees. Some writers claim that the wax also may be extracted and made into foundation. I have had no experience in this line, therefore can not give positive advice; but I should immediately burn the hives, panes, bottom boards, boxes, and everything pertaining to the infected hive.

My experience with foul brood dates back to 1845. My largest experience, however, was between 1850 and 1860, when the disease raged through Montgomery county and Eastern and Central New York. Through the ignorance of a neighbor bee-keeper I had one or two cases in 1867. Since that date there have been no signs of foul brood in either of my apiaries; neither has there been a case of this disease with any neighboring bee-keeper for the past thirteen years, to my knowledge.

Mr. House said further that the great danger was in leaving the diseased honey exposed where other bees could get at it. His experience had been similar to Mr. Quinby's. In the fall he had several dozen cells attacked. In the spring he would drive the bees out, provided the colony was strong enough. In his article he had put the worst side out, in order to put men on their guard.

Quite an interesting discussion followed, in which a large number of the members participated. The general opinion seemed to be that the safest plan is to cremate hives, bees and *all*; especially where only a few are infected with this dangerous and loathsome disease. The preponderance of evidence, however, seemed to be that the disease *might* be overcome by driving the bees into new hives with comb foundation, scalding the old hives, and letting the old combs freeze, thereby killing the germs of the disease. The discussion tended to show that much is yet to be learned in relation to this worst of all diseases to bees.

The second day's proceedings were very interesting, as a large number of essays were read, the first in order being gold medal essays on the subject of "Wintering Bees." Essays were read by Mr. Chas. Dadant, of Hamilton, Illinois; by the Secretary, Mr. George W. House, and by Mr. A. Salisbery, of Camargo, Ill. The subject matter of the first two is not at hand; that of the latter is as follows:

Wintering Bees.

Heat and electricity are the staple, vital forces of life in animal organization. Combine all the other favorable circum-

stances that a smiling Controller of the universe could bring about, in absence of these great forces, and all is wrapped in the chilly sable mantle of an eternal sleep. Could it be that nature should be clothed in her mantle of grandeur, watered by the silvery sprays of the welcome clouds, with the rainbows glories seen through the misty vapor, and the sun alternately shining in his glory, yet with the earth's normal condition of heat and electricity absent, the cold, icy arms of death would chill all the pulsations of life, and cause everything to sleep quietly in the stilly shades of universal night.

Before the approach of late autumn's and early winter's chilly winds scatter the hoary frosts, all swarms should be prepared for winter under the genial rays of an October's sun.

HOW TO PREPARE FOR WINTER.

Remove the top story of the hive, take off all surplus honey boxes and remove the outside combs from the brood chamber, leaving in the center of the hive only enough well-filled combs to carry the bees safely through until spring. Now place the lids on the brood chambers, and they are ready to wheel into winter quarters as soon as the proper time comes, which varies with latitude, but in Central Illinois is, as a rule, about the middle of November.

WINTER REPOSITORY.

It may consist of a dry, underground cellar, a cave in a hillside, or a frost-proof building on top of the ground; but as the style of the repository is no part of the discussion, we leave this part of the subject for others to decide.

CLEANSING THE REPOSITORY.

If the building is infected with mice, trap them all a month or so in advance of putting up the bees, and a few days before the bees are housed burn a suitable amount of sulphur in the room to destroy all accumulations of fungi; then with a suitable brush wash the walls with a weak solution of carbolic acid and water, after which leave the house open until all is sweet and pure.

STORING IN WINTER QUARTERS.

Select a nice cool day or evening about the middle of November, soon after the bees have had a good purifying flight. Close up the entrances of the hives, and place one or two—or as many as you are prepared to wheel—on a spring wheelbarrow, if you have it; if not, a common

one will do, running it on a smooth track. Wheel directly into the repository, and stack your hives one upon another as high as you can lift them, always being careful as you stack them up to raise each lid $\frac{1}{2}$ inch above the hive all around, by slipping under the lid a suitable number of $\frac{1}{2}$ inch pieces prepared for the purpose. Avoid placing the hives against the walls of the building, as this might produce a concussion among the bees from an outside jar of the building.

WINTER MANAGEMENT. *

After the bees are properly adjusted in the house for the winter, three things are to be considered. First: A proper temperature of the atmosphere. Second: Plenty of fresh air. Third: A humid condition of the atmosphere.

(1.) The mercury should show a higher or lower temperature in proportion to the strength of the swarms housed. If the swarms are very strong, 40° Fahr. is about right. Medium swarms, from 45° to 50°. But if very weak, or nuclei with queens, about 60° is necessary to keep the bees in a good, healthy condition. Swarms should be graded according to strength, and placed in repositories adapted to their wants.

Sometimes when bees begin to leave their hives and plunge into the dark abyss before them, "never, never" to return to their once happy homes, we are liable to attribute the whole excitement to too high a temperature, while the facts are that the atmosphere is too dry, and the bees thirsty after a long confinement.

(2.) Bees, like animals of a higher organism that live and bask in the great ocean or sea of atmosphere—which alike in all places enshrouds the Globe, imparting life, vigor and health—should have plenty of fresh air. True, bees can live in an atmosphere so foul, and breathed over and over so frequently that a human being would soon die in it. But this is no argument in favor of wintering bees in a room filled with impure air. Air should be admitted through a subterranean air duct. If fifteen or twenty rods long, and passing through a six-inch tile, the air will enter the room at 40°, while the mercury stands at zero in the open air.

(3.) A humid condition of the atmosphere may be kept up by placing vessels of water in the room; but bees do not particularly want water before sometime

in January, especially if the honey is thin.

Should a very warm spell of weather occur at any time in the winter, the mercury rising to 60° day and night in the open air, no one should take fright and rush his bees out doors, probably to be frozen in a very short time. In proportion as the thermometer in the room rises above a proper temperature, increase the surface of the water pools in the house, and throw all the doors open at nights, and the result will be the same as produced in a damp atmosphere in the Spring, with a temperature of 60°.

Combs will not grow moldy inside of four months in a damp atmosphere, if in a well ventilated hive filled with a good swarm of bees, and the house properly warmed. Combs will grow moldy where a hive has no upward ventilation and the room cold, but more especially if the swarm is small, even if there is no water in the room. It is a cold atmosphere that kills bees and molds combs in a house. The vapor exhaled from the bees not only settles on the outside of the combs, but after a long time finds its way into the cells and lodges in small drops against the septum of the cells and creates a heavy fungi in a very short time.

HOW LONG SHOULD BEES BE HOUSED ?

As a rule they should be kept in until they can gather some pollen from the soft maple and willows. It is not the length of time that bees are confined that stupefies and kills them, but the unfavorable circumstances under which they are confined. Where they are kept warm and in a room with a moist atmosphere (but otherwise dry), and have plenty of fresh air, they never eat more than the system requires to supply the loss that is continually going on in animal life; and when brought out after four months' confinement, they are as perfect as when winter overtook them.

When they have well-nigh lived out their lives before housing, they will die in the spring before young bees in sufficient numbers can take their place to sustain the "old homestead." We call this spring dwindling. Other unfavorable causes will produce like results.

I will not argue the question of repository wintering, as it is vastly better in a cold climate. As the "Sunny South" always enjoys the blushing smiles and genial rays of a warm sun, bees will care for themselves in such a climate.

Not so in the North, where the mercury falls to 25° or 30° below zero, and remains down so long that they can not take wing for six or eight weeks. They must largely perish and become unhealthy if on their summer stands.—Chaff packing in ordinary winters will keep up a very good temperature outdoors; but alas! when it sinks 30° below zero, and the winds are sweeping over hill and dale like a mighty tornado, winter's icy breath severs the tender cord, and life gives place to the still reign of death.

Here followed an interesting discussion on in-door and out-door wintering, some advocating the one plan and some the other. After thorough discussion the following resolution was adopted as the sense of the convention:

Resolved, That as bees are natives of warm climates, that in wintering them in the colder climates the requisites to do it successfully are darkness, quietness, even temperature, and plenty of good sealed honey."

Thus, without deciding in favor of in-door or out-door, summer stands or cellars, they decided on *the requisite conditions*, leaving each bee-keeper free to attain these desirable conditions in whatever way he thinks best.

The election of officers being in order, L. C. Root, of Mohawk, Dr. A. H. Marks, of Baldwinsville, and G. M. Doolittle, of Borodino, were put in nomination for President. President Root declined re-election. The ballot resulted: Doolittle 3, Marks 20, Root 26. Root declined, and on his motion Dr. Marks was declared unanimously elected. G. M. Doolittle was then unanimously chosen as Vice-President, and G. W. House, of Fayetteville, and R. Bacon, of Verona, were unanimously re-elected to the offices of Secretary and Treasurer.

Next in order was the President's annual address, which was on the subject of "Queen Bees." For want of room we are forced to omit its publication for the present. The subject of honey adulteration was then discussed, legislation to

cure the evil urgently insisted on, and a committee appointed to bring the matter before the State Legislature.

The President, Dr. Marks, having been called home, Vice-President Doolittle presided during the evening session.

A telegram was read from Mr. D. A. Jones, of Beeton, Ont., as follows:

"My eyes are no better and I can not send the essay. My bees are wintering finely, the holy bees best. Accept my congratulations."

The Secretary read an essay on "The Great Revolution," written by A. Webster, of East Roxbury, and also the following written by A. B. Weed, of Detroit:

Apiarian Supplies and the Queen Trade.

This is a subject, I believe, of interest to all who are engaged in apiculture, either as bee-keepers, supply dealers or queen breeders, and is growing as the business extends.

The supply business seems as yet to be in a crude state, and prices lack uniformity. In many cases we find needless "cutting" of prices. It may be said that this is a good thing for buyers; but I believe that the opposite is the case, for the inevitable result of unreasonably low prices is inferior goods. When prices are so lowered that there is no margin left for profit, the trade will not be supported with the enterprise which is necessary to stimulate improvements or inventions, or even to put the business on a good footing. The character of the business can best be maintained if the energy of manufacturers is directed to the perfecting of goods rather than the cheapening of them. Good tools are necessary in any pursuit, and seem to be associated with a thrifty business; in fact, the prosperity of a business is largely dependent upon the means at hand of carrying it on. If one tool is better than another—even if the difference is slight—it is worth very much more, for the benefit of the difference is felt every time that it is used. A good thing may be a source of profit, and a poor one of loss. The best is *always* the cheapest.

There is one respect in which business is in a better condition than many others, and that is, that there is but very little credit given. This is an advantage

to both parties, for the seller loses nothing through bad debts, and the prompt buyer does not have to pay for the losses caused by the careless or dishonest ones.

It is quite common among supply dealers to guarantee safe arrival of goods. This condition of sale is unnecessary, as the express receipt is sufficient, and in case of injury or loss the fact is more readily proved and damages more easily collected than could be from some dealers. It is unreasonable to expect the dealer to be responsible for goods after they have left his hands, especially when the consignee can adjust any difficulty more easily at his end of the line; this is the customary rule in business. When articles are sent by mail the buyer can protect himself against loss by having the article registered; but the precaution is almost unnecessary, as it is *very rarely* that anything is lost in the mails. Of course the sender is required to use necessary care in packing; with most shippers this is a point of pride.

The traffic in queens seems to be closely allied to the supply business—at least so I have found it—for as the bee-keeper begins to feel the need of good tools he sees the advantage of good stock as well; and he naturally looks in the same direction for both. I believe that I express the opinion of the best queen breeders when I say that it is much more satisfactory to send away a good queen at a correspondingly good price—even if the profit is no greater in proportion—than a cheap and poor one, for the reason that a queen, wherever she goes, will represent the stock from which she came. And I believe, too, that I speak the opinion of all observant apiarists when I say that it pays infinitely better to keep good queens than poor ones. Thus it is that good queens at good prices are more profitable to both parties. Some of the best apiarists have discontinued selling any queens that are not possessed of a high degree of merit, and send out only those which are thoroughly tested and found to be good. In return they receive a suitable price from appreciative customers. This is notably the case in localities where honey raising is an established business, and the value of good stock is therefore understood. It is now almost universally held by apiarists that if good queens are to be obtained they must be raised under favorable conditions. It is freely admitted that to bring about these conditions requires a large outlay of time and thought,

as well as money. This is especially the case when queens are to be raised out of season.

The cost of raising queens will decide their price, for of course they will not be sold at prices which do not pay for their raising, and a reasonable profit besides. If buyers insist on having cheap queens, they will get them, but their value will be found to correspond with their price. The one-price rule which is applied to queens throughout the country has the effect of causing many poor ones to be sold at fair prices, which really should be killed. It has a tendency to discourage the rearing of very superior ones, for as a rule, a thing is no better than its price. When they are all sold at a uniform price it is to be expected they will be nearly alike in merit, as there is no special inducement for the breeder to improve his stock. The uniformity of price probably originated in the supposition that all queens are equally good, whereas experience proves the opposite to be true. A queen that lays even a few more eggs daily than another is much more valuable, for the extra number of eggs will be multiplied by the number of days that she is kept. This difference alone, so often repeated, will in time amount to more than the price of the queen. A poor queen is kept at a corresponding loss, although both may have sold for the same price. There are such things as plus and minus outside of algebra. The buying of queens at present has some resemblance to a lottery. They should be graded—at least so far as this is possible—and priced accordingly.

Combinations for the maintenance of artificial prices are impracticable and undesirable. I would only submit that prices be based upon cost of production and a *reasonable* profit.

The proceedings of the third and last day of the convention were of unusual interest. The convention decided not to publish the paper read by Mr. Detwiler (on the first day of the convention) or the discussion following it by Mr. Newman and Mr. Detwiler, from the fact that they both lived without the province of the Association, which includes only New York and the Eastern States.

A paper offered by Mr. Julius Hoffman of Fort Plain, on "The different races

of bees and their crosses," was read by Mr. J. H. Nellis. This opened up quite a lively discussion, and elicited some conflicting opinions. The preponderance of evidence seemed to be in favor of the Italians as honey gatherers, as compared with the Cyprians, but went to show that the latter bred up later, and wintered better than the former. The subject of the Purity of Honey and the proper tests to apply, were fully discussed, and the following Preamble and Resolution, offered by Mr. Root, was adopted:

"WHEREAS, The production and sale of honey in liquid form, thrown from the comb by centrifugal force, called extracting, free from all impurities, is of greatest interest both to bee-keepers, dealers and consumers, therefore be it

"Resolved, That we fix as a standard of purity that all liquid honey will granulate, candy, or become hard at the approach of cold weather, and that this quality is a sure indication of its purity; and we desire to inform the public that all that is necessary to restore this honey to liquid condition as when gathered from the flowers, is to subject it to gentle heat, by placing the vessel containing the honey in warm water, not heating it above 120° Fahrenheit.

During the afternoon session the question drawer was taken up and disposed of, but for the want of room will have to be deferred until our next issue.

Mr. Bosworth, as chairman of the committee on implements, made the following report:

The prize for the most practical bee hive is awarded to J. H. Nellis; best smoker, "New Quinby," L. C. Root & Bro.; best honey crates and boxes, A. E. Manum, Bristol, Vt.; best crate of box honey, Mr. S. Snow, Fayetteville, N. Y.; best package extracted honey, L. C. Root & Bro.; best display of apiarian implements, J. H. Nellis; best comb foundation for surplus boxes, "Vandervoort foundation," exhibited by J. H. Nellis; best comb foundation for the brood chamber, "Dunham foundation," shown by C. Dadant & Son.

All the other kinds are in close competition, and are a credit to the inventors and manufacturers of the same.

Your committee also find articles on exhibition, and would call the attention of bee-keepers to them as worthy of merit:

Bee feeders exhibited by L. C. Root & Bro., A. E. Manum and J. H. Nellis, all worthy of merit, especially the Van Deusen feeder; a machine for fastening comb foundation in surplus boxes, exhibited by W. H. Mallroy, Bristol, Vt.; Peet's combination Queen cage, exhibited by J. H. Nellis; a nest of honey pails, exhibited by C. Dadant & Son, and also honey knives, and Cheshire rakes for supporting comb foundation while being built out in the brood frames, exhibited by I. L. Schofield.

Mr. Doolittle, from the committee on prize essays, reported, awarding the gold medals and premiums as follows:

Gold medals for best essays: "The different races of bees and their crosses," J. Hoffman, Fort Plain, N. Y.; "How can we make the apiary most profitable," Geo. W. House, Fayetteville, N. Y.; "Wintering Bees," Chas. Dadant, Hamilton, Ill.; "Marketing Honey," C. P. Dadant, Hamilton, Ill. The Cyprian queen offered by L. C. Root for best essay on any other subject, is awarded to W. A. House, of Fayetteville, N. Y., for his essay on "Foul Brood."

We would like to give a more detailed and fuller report of this important convention, but the limits of our journal will not permit. Other portions will be published hereafter, as far as our space will justify.

Our Contributors.

For the INSTRUCTOR.]

Bellows Smokers.

MRS. L. HARRISON.

We sit down this morning to have a family chat with the members of the INSTRUCTOR household about smokers. We have two bellows smokers, and have been so aggravated with them that we have been tempted to pitch them out of the apiary. We have tried all ways that we know of, yet the fire goes out and we have no smoke when we need it. When we used these smokers in very dry weath-

er (for fear of a conflagration by using our old stand-by) we were completely tired out with running to the kitchen fire to light them. We have cut up cobs into little pieces and dried them in the oven, also rotten and hard wood, and have tried paper and rags, and yet, while we could get a fine smoke to start with, by the time that we had opened two or three hives, it was extinguished.

Our stand-by is old linen or cotton rags wound around a small stick to stiffen the roll, and tied at short intervals in separate ties, so that when one burns the rest will not unroll. One of this kind, well made, never goes out, and by being covered with dirt when not needed, will last all day, and is always ready when exposed to the air.

We were surprised at seeing in the last INSTRUCTOR that "Jack in the Pulpit" refused to say which smoker he would choose. Webster tells us that an instructor is "a person who imparts knowledge to another;" and what can be more desirable or pay better for bee-keepers to know, than what implement to purchase for the apiary? This information is the most difficult to obtain, as most editors are interested in their sale; and when a bee-keeper wants to purchase an extractor, smoker, etc., he is at his wits' end to know whose make to order. Who will tell us of a smoker that is manufactured not only to *sell*, but for use, that will smoke and not go out?

We are pleased to see the manly way in which Mr. Heddon discourses of comb foundation, and can see no reason why others might not do the same with reference to other articles offered for sale for our use.

Peoria, Ill., Feb. 1, 1881.

We agree with you exactly, Mrs. Harrison, about giving our opinions concerning the merits or demerits of apiarian supplies of any kind. If one manufacturer's smoker is better than another's, we want to know it; if one style of hive is better than another, we want to know it; if one kind of comb foundation is better than another, we want to know it—and the sooner the better; and so on through the whole catalogue of apiarian supplies. We hope our correspondents will not be afraid to express

their minds on such an important subject, merely through fear of offending some supply dealer or dealers. If you have tested two or three styles or makes of any implement for the apiary, and find one make to be superior, let it be known, by all means, no matter whose toes are tramped on. We have no interest, whatever, in the manufacture or sale of apiarian supplies of any kind, and our preference is therefore the same as that of every other disinterested bee-keeper, viz: We desire the best appliances for the apiary that are possible, no matter by whom manufactured. The columns of the INSTRUCTOR are always open to those who have any experience to relate that will throw more light on the subject, and we trust they will not be slow in taking advantage of the opportunity.

For the INSTRUCTOR.]

Wintering Bees.

JAMES HEDDON.

In many localities throughout the United States bees are dying off at a great rate *already*. If we have an unfavorable March and April the result will be disastrous, and next season's honey will bring an extra high price. There are no "thorns" without "roses," but who gets the "roses" and who the "thorns" only time can tell.

Thousands of bee-keepers will come to the front, as usual, and explain the cause of the great and general mortality; in fact, some of the younger ones have already opened their guns. Those who fired away last year and year before, by this time see the mistake they made in attributing the cause to cold, confinement, dampness, no upward ventilation, no absorbents, too many, out-door wintering, in-door wintering, "that damp cellar," neglect, too much fussing, etc., etc., and will not be so sure, now, of the cause of this disease known as dysentery. Why, bless you, Mr. Editor, 12 years ago large numbers of us knew just how to prevent a re-occurrence of such a disaster. Every year we kept on knowing how to prevent it "next time," and so it

has continued, until some of us begin to think there is something about it that we do not quite understand, or, to say the least, something we can not prevent.

Mrs. Baker, of Lansing, tells us that she "assumes that the three following conditions are necessary for successful wintering, viz: Perfect quiet, total darkness and pure air of uniform temperature." Now, I have personally witnessed successful wintering with every one of these conditions violated, and have also had bees die in great numbers with all these conditions present. Mrs. Tupper's bees wintered well under the kitchen floor, uncarpeted, with children and dances above. Mr. A. Balch's bees, of Kalamazoo, came out of a cellar that was damp and moldy and possessed bad odors, with nearly every colony alive and strong. A large majority of the combs were damp and moldy, but they did well that season.

We have all seen bees come through our severest winters, universally healthy, with no attention or protection whatever. I once bought four colonies in box hives, of a party who had them on a bench about three feet high. When I took them away he said: "There is another I'll give you." I lifted a box, which I had supposed to be empty, and saw three pieces of comb (all not equal to one square foot) with about a tea-cup full of bees. This was in April, after a "snug" winter. The colony survived, unaided.

Every bee-keeper of experience who lives in our northern latitudes, has witnessed enough to know that cold or confinement, or both, do not *cause* bee cholera or dysentery. That they aggravate it, is probably true, and this has started the idea that they cause it. That they do not cause it is evident, from the fact that in the midst of extremes of cold and confinement, bees come through in fine condition many times. For years past I have suspected that the mischief, or first cause, lays in the *honey*, and is produced either by its containing bacteria (living animal germs similar to those said to produce foul brood), or an undue amount of fine pollen always more or less found in honey.

We must not forget that it must be a *perfect* food that can be eaten day after day, without the necessity of voiding. The colder the temperature the more food must be consumed to keep up a proper degree of heat, and the longer the confinement and greater the amount of food consumed, the more perfect that food must

be. By "perfect" I mean the greatest amount of heating qualities, with the least amount of residue.

My own apiary, thus far, has shown no signs of any disease. Notwithstanding I fed about \$50 worth of honey back to some 90 colonies last fall, I fear that some of them will die of starvation if the weather continues so cold until late in the winter. While bees are dying so universally all around me, both of starvation and dysentery, if mine escape the disease I shall credit it to my labors in breeding in the long, leather-colored Italians (referred to by Prof. Cook), which, though I fostered for their great strength, long proboscis, good nature, and general honey-gathering and comb-building qualities, I have noticed are much less liable to have dysentery than black bees, and more likely to survive it and get well when they do get it.

The above are some of my past as well as present opinions regarding the mortality we so often experience; but whenever I see any phenomena that convince me of a mistaken conception, I will not be slow to communicate it. I will report again in May as to the condition of my bees.

Dowagiac, Mich., Jan. 29, 1881.

For the INSTRUCTOR.]

Rocky Mountain Honey Bees and Their Care. No. 1.

W. M. EGAN.

The honey bees of this country were imported from California and the Eastern States, about the time the Italians were introduced from Italy, and hence, what few blacks were imported have been superseded long ago. Many of the choicest strains of Italians have been imported from Italy and also from the best breeders of America, to Utah. Judicious selecting and careful cross breeding by our best apiarists has produced a bee, that I have been unable to find its superior in all the importations to this country.

It is my humble opinion, that the "coming bee" will be produced by crossing our Italians with those of the most successful breeders of America. We may produce fine Albino, or light colored Italians, by breeding "in-and-in;" but these will be *poor* honey gatherers. We may also produce bees with the same

markings by crossing Italians from different breeds, and these will be good honey gatherers.

This is just what we have accomplished here in the Rocky Mountains. Our importations were frequent, owing to there being no natives here, and our selections have been from various sources, making our ability for crossing perfect. Our bee-keepers not being quite up with the times used only the natural swarming and equal dividing (with queen cells) methods of increase. The natural swarming method, all will admit, is the best for producing fine queens; and the dividing method is the same thing up to the sealing of the cells, for cells are not often obtained here in any other way than by finding them when examining strong colonies in swarming time and utilizing them by dividing, not into small nuclei, but half colonies.

Some of our bee-owners have paid no attention to breeding, and their bees have been breeding "in-and-in" (when they were separated from others) for years, with lazy, no-account worker bees as a consequence.

We have the large, long-bodied variety of bees, and the small, short-bodied variety; also a cross between the two, which I think is the best in every respect. Each one shows the full three yellow bands (generally very light) without placing them on a window or filling them with honey. You can see these bands distinctly as the bees fly in and out of their lives. The first shield or segment, next the thorax, is almost wholly yellow, all in between the body and shoulders. The middle band is broad, and the third one is plain and distinct, often very broad. The queens are almost wholly yellow. I have one colony that is extra light-colored, and superior honey gatherers; also prolific and easy and gentle to handle. I infer that they have long tongues, from the fact that I often find them at work on red clover.

Our principal honey plant is sweet clover (*melilotus alba*), which blooms from July till frost. After the first blooming another raceme of flowerets start on the old rachis, forming a new peduncle along which the pedicels are arranged. This freak is brought about by a shower (after the plant has seeded), starting a new growth, after a drouth. I have seen as high as a half dozen racemes at one node, in all stages from bud to seed, thus giving a long, continuous blooming.

The Rocky Mountain Bee Plant (*Cleome Integrifolia*) (a cut of which appears in the *A. B. J.* for Jan. 19) is plentiful here and blooms profusely, but lasts only about three weeks. The honey from it is flavored much like Brazil nuts. We have a great variety of plants here, furnishing bloom from spring until frost, causing our bees to work continuously, though they do not gather rapidly; still, by this means habits of industry are formed, and we never hear of robbing, unless it be in early spring.

Our people have not believed in winter protection, nor have they practiced it. Last winter ('79-'80) they lost a large percentage in consequence. I have proven that chaff protection is far superior to single boards, and the tenement hive added is still better. The winters here seem to be exactly opposite to your Eastern winters. I hear of protracted cold all through the States this winter, while we are having rain and mild weather, which is very uncommon. My bees fly out right in the midst of rain showers, especially from the tenement, showing that they are breeding rapidly. If this breeding is general here—and I think it must be—there will be many colonies starve before bloom comes again, unless their keepers feed them. I believe I am pretty safe on that score, as I have seventy-five combs of sealed honey on hand.

Salt Lake City, Utah, Jan. 21, '81.

For the INSTRUCTOR.]

The Cold Winter and Its Effect on Our Bees.

JESSE MILLER.

Months ago, before winter came on, we saw in papers and magazines, and were warned by wise men, as well as knowing old women, to "prepare for a cold and hard winter, for it is surely coming." With all this warning many bees were unprotected, as winter came so early (too soon, even, for many old bee-keepers) and has continued so long, that it is telling a sad tale already.

The first cold snap was so sudden and severe and lasted so long, that by Dec. 4th and 5th—almost the first fine days of the winter for bees, and the last that they had a good fly—the stores of many colonies about here were eaten up; or so nearly so that when Dec. 6th came, with

the thermometer at 16°, and on the 7th nearly marking zero, but little had been done to better their condition. By this time it was so cold that to handle them was risky; in fact, scarcely to be thought of; and to leave them on their summer stands, unprotected as many were, was equivalent, in many cases, to letting them starve or freeze. By Jan. 15th many colonies had died, one professional bee-keeper losing eight out of ten swarms by starvation, as not a bit of honey was left, although he thought them strong in numbers and well provided for.

Many of us were surprised to find our bees so weak when preparing them for winter, as we believed them very strong; but it appears that brood rearing ceased earlier than usual. Now many must feed, and therefore two questions naturally arise—*what shall I feed and how?* Our first choice of food would be honey; next syrup, and then candy. Honey is their natural food, and on that account I would prefer it. Syrup is easily and quickly taken by the bees, and if well made is good feed. Candy should be carefully prepared, not hard and dry, but soft, moist and good.

As to feeders, a piece of honey-comb will do very well, costs so little, and is easily filled, and when placed on top of the frames the bees soon get at it and like it; or appear to, from having seen the like before, we suppose.

If many colonies are to be fed, other means must be used. Simple and cheap feeders, of which there are many, are most desirable. A. I. Root's is a good one. The one sold by Mrs. Lizzie Cotton is, however, the most complete I ever saw, and bees take to it readily, but it costs too much. A dozen of A. I. Root's costs less than one of Mrs Cotton's.

Honey, if good, is ready to be fed at any time. Syrup must be carefully prepared, as if too thick it will grain, and if too thin may sour and cause disease. Candy is good feed, if not too hard, but we find bees slow to accept it, unless well prepared. Feed on top of frames; it will soon be found and taken below.

Give your bees good, healthy food, such as will not cause disease, and a good supply of it. You will receive a good return if you care well for them. Feed at once, using the best means at your command. Do not let them starve or freeze. Be watchful; be prompt; and you will reap your reward.

Alliance, O., Jan. 27, 1881.

P. S. Since writing my article I am told that J. M., one of our first bee-keepers, sees symptoms of dysentery among his bees. He has them on 5, 6 or 7 frames, chaff cushions and packing, some on summer stands and others in bee house; all well protected he says, with honey enough. No fly since Dec. 5th.

Feb. 1st.

For the INSTRUCTOR.]

Transformation of a Worker Larva Into a Queen.

S. M. OLDHAM.

The important discovery of changing the larva of a worker into a Royal one is generally attributed to Scizach, who accidentally discovered the fact in the following manner: Having used smoke very freely in some of his operations with his bees, they were much annoyed at it, and considerable numbers of them, among which was the queen, left the hive. He searched diligently for her, but in vain, but next morning he discovered a small cluster of bees on the hive whose queen had fled. Examining them he found the queen, and upon placing her at the entrance of the hive she was at once recognized, and treated as a queen. But on examining the combs he found that the bees had planned and almost completed three Royal cells. He then carried away two of the cells, to see if the bees would continue their operations, and beheld the next morning, with the utmost surprise, that they had removed all the food from the third worm left behind, in order to prevent its conversion into a queen. He next deprived a hive of its queen, and put into it some pieces of brood comb containing worker eggs. The same day several cells were enlarged by the bees and converted into Royal cells, and the larva supplied with a profusion of jelly. He then carefully removed these worms from the Royal cells, and substituted for them as many common worms from worker cells. The bees did not seem aware of the change, and watched over and continued enlarging the cells, sealed them over at the usual time, and at the proper time the queens were hatched. He says they were of the usual size and shape, and well formed in every particular.

THEIR MODE OF PROCEDURE,

When they are accidentally deprived of

a queen, is as follows: They fix upon a worm not more than three days old, then cut away and demolish the three adjoining cells, and raise around it a regular cylindrical enclosure, and at the end of three days they so cut away the comb as to change the direction of the cell from a horizontal to a perpendicular position, working downward until it assumes something the appearance of a peanut about an inch long. In due time it is sealed over, and the larva undergoes a transformation into a Royal nymph.

In regard to drones, however, the case is altogether different, as there is not that similarity existing between them and the worker, as there is between the workers and the queen. The primary object of the drone is to pair with the queen. He is the gentleman bee, his whole form, size and organs being different from the worker bees which, it has been ascertained by dissection, are imperfect females.

Now, in conclusion of this subject, I kindly ask you, reader, to pursue this part of science, which is still capable of inviting you onward, remembering that I have only picked up a few pebbles along the shore, while the whole ocean of knowledge lies unexplored beyond.

Reynoldsburg, O., Feb., 1881.

Letters.

SOUTH GATES, MONROE CO., N. Y.

Editor Bee-Keepers' Instructor:

The prospect of financial success was not very encouraging at the time I commenced bee-keeping. It was in the spring of 1879 after that disastrous winter, which killed nearly all the bees in this vicinity. They were nearly all in box hives. In the fall of 1878 father had 21 swarms, I had 2 and a neighbor had over 100. We lost every one of ours, and our neighbor nearly all of his, saving, we believe, only 7 or 8 stands. They were all in box hives except one. But as I had made up my mind to buy some bees that spring I did not let this total loss in wintering prevent me from carrying out my intentions. Accordingly I purchased eight swarms in the spring of 1879, seven in box hives and one in a straw-lined hive. We transferred the seven into movable frame hives, and during the season increased 75 per cent., all

except one, natural swarms. We lost two at swarming time, by not being present to attend to them, and went into winter quarters with twelve colonies, all of which wintered safely.

Feb. 1, 1881.

FAY KENNEL.

We publish the above letter for two purposes: First, to show that the box hive is not to be depended on for wintering bees, notwithstanding the great faith that some of the old-time bee-keepers have in the old way of doing things. In the next place we publish it so that we may the more forcibly call attention to what we consider an instructive report of a season's operations in the apiary.

Now, while we commend the writer's persistency in bee-keeping and her judgement in adopting the movable frame hive, we think she overlooked what should have been a part of her report. She REALIZED 50 per cent. in the way of colonies, PROVIDED they were good, strong ones; but she does not tell us whether her bees gave her any surplus honey or not during the seasons of 1879 or 1880. In fact, she only takes us to the spring of 1880, and there leaves us to guess as to her last season's operations. Now just a word right here to our correspondents who are sending in reports, whether of successes or failures: Be careful to state ALL the conditions. The style of hives, the kind of bees, the manner of putting them away in the fall, the condition they came out in, in the spring, the yield of honey, the increase in colonies both natural and artificial, the quantity and quality of food used, the time when the feeding was done, and such other information as will be of interest to the progressive bee-keeper.

WASHINGTON C. H., O.

Editor Bee-Keepers' Instructor:

Thanks to the INSTRUCTOR for the invitation to us unfortunate bee-keepers to report our failures. If any man can

report a more complete failure than I can he is welcome to the belt:

I started last spring with sixteen colonies; got two swarms during the summer but not a pound of honey. On the 15th of November I had eighteen colonies, all apparently in good condition, but by the first of January I didn't have a bee living. All left more or less honey—sufficient generally to have carried them through the winter. I left them on their summer stands under a fifty-foot shed facing to the south, with the back and ends boarded up, to keep off the snow, rain and wind.

Such is my luck. I am now left with fifty dollars worth of good, movable frame hives, and not a bee to put in them. I am almost ready to say that bee-keeping for profit is a grand humbug. But I will try it again if some lucky brother will sell me two or three stands to start on. My neighbors' bees are all dead also. I know of but one live stand of bees within a circuit of two miles. E. HENKLE.

Feb. 1, 1881.

We regret very much, Bro. Henkle, to hear of your disastrous failure, but are glad to see that you manifest the true spirit of "Try, try again." We are sorry that you did not give us some clue as to the cause of such a failure, as there is undoubtedly a CAUSE for it. You see the EFFECT, but the CAUSE or CAUSES producing the effect are not so apparent; and yet this is just what your brother bee-keepers would like to know, and is what would be of advantage to yourself in the future. Your bees SEEM to have been very favorably situated, and we have no doubt were, as to the shed protection; but this alone would not keep them warm, and as they died so early in the winter we are inclined to think they froze to death. Possibly your colonies were not so very strong and you gave them the entire hive, instead of crowding them on only so many frames as they could comfortably occupy. It may be also that you failed to cover them with any protection to keep them warm and absorb the vapor that is constantly

condensing, and is more or less inclined to form ice in the hive in extremely cold weather. You can rest assured, Bro. Henkle, that it was not merely your ill LUCK (as this term is generally used) that your bees died, but it was for the want of some of the necessary conditions for successful wintering; conditions over which you may or may not have had control. Please send us a statement for our next INSTRUCTOR of the manner in which your bees were put away for the winter. To all we would say: In sending in your reports, whether of successes or disasters, don't forget to mention all the particulars and conditions that may be necessary to form an intelligent opinion as to the causes of success or failure.

Question Box.

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

Will bees work on Hungarian grass or millet?
Oakland, Ohio. H. V. T.

We have never observed bees work on millet in this locality, but have heard that they do sometimes further south, upon some varieties of Indian millet (*Sorghum Vulgare*), which includes Sweet-sorghum, Guinea corn, Chinese sugarcane, broom-corn, etc.

A plant (probably belonging with above) was recently described by F. Battle, Withe Depot, Tenn. (*vide Gleanings*, vol 7, page 148), as being an excellent honey plant. We obtained seed, but it did not germinate. If anyone knows anything about it please tell us.

There is very little Hungarian grass, *Setaria Italica*, grown in this vicinity, and we know but very little about it; but we would be very much surprised to find bees working on it.

I have received a specimen copy of the INSTRUCTOR and am much pleased with it. As I am a new hand in the bee business, I would like to ask a few questions:

1. I have five stands of bees in box hives, and want to get them into new style hives. When can I do it to the best advantage?

2. What kind of a hive shall I use? Give plain directions for making the same, as I know nothing about the different styles of hives.

3. Would it pay me to Italianize?

4. Are the Italians as much better than the common bees as people claim them to be?

R. M. G.

Macon, Ohio.

1st. Transfer your bees into frame hives, either about the time fruit trees bloom, or just after they have cast their first swarm. I prefer the former.

2d. Perhaps you had better use the Langstroth hive, or a hive taking the L. frame, as that size is used more than any other. To make L. hives have your lumber planed exactly $\frac{3}{8}$ thick; cut out side pieces $20\frac{1}{2}$ inches long by $10\frac{1}{2}$ wide, one end piece 15 inches long by $10\frac{1}{2}$ wide, and the other end piece $\frac{3}{8}$ narrower, and in nailing the pieces together raise this piece $\frac{3}{8}$ of an inch from bottom for the entrance. Cut from inside of each end of side pieces a rabbet exactly $\frac{1}{2} \times \frac{3}{8}$ inches, and the width of board; also cut rabbets $\frac{3}{8}$ deep in both end pieces, for ends of frames to hang in.

When nailed up your hives should be $18\frac{1}{2}$ inches long, $14\frac{1}{2}$ wide and $9\frac{3}{8}$ deep, below bottom of rabbets, inside measure. Nail on outside of body of hive a stop, one inch from top, to hold up the cover, or cap. Make the cap the same size inside as the body of the hive is outside, and 7 inches high, using only one board for cover. Top bar of brood frame is $19\frac{1}{8}$ inches long, side bars $8\frac{3}{8}$, and bottom bar $17\frac{3}{8}$.

Simplicity hives are of the same dimensions as the above, but they are mitred together instead of being rabbeted.

If you do not understand the above instructions well enough to make the hives correctly, perhaps it would be cheaper for you to buy a sample hive from some one near you.

3d. It will depend somewhat upon your location; also upon what you intend to keep bees for. If you intend to only keep a few stocks for making honey for home use it would probably not pay you.

4th. Most bee-keepers prefer the Italians, although a cross between is probably ahead as honey gatherers.

Wine and Grape Grower, New York City. Friend Riegel will please accept thanks for answering S. S.'s other questions that were referred to him.

Editor's Corner.

An esteemed correspondent asks the following question: "What good is there in feeding early?" In answer to the question we refer you to "February and March Management."

Notwithstanding we have set up the greater part of the INSTRUCTOR *solid* this month, we regret that we have, for the want of room, been forced to leave out several excellent articles. These, so far as seasonable, will appear in our next number.

If any of our subscribers should miss getting a number of the INSTRUCTOR at any time, we hope they will notify us at once, when another will be promptly sent in its place. Mistakes are liable to occur in any office, and ours is no exception to the rule.

Mr Boerstler, of Gilead, Ill., reports that he commenced last spring with 44 colonies, all blacks except 2, which were Italians. Increased to 54 colonies nearly all of which were in good condition Feb. 1st. His expenses were \$47.50. Income, \$22.00 for honey, and the increase of the ten swarms. Considering the poor season for bees, and hard winter, we think, Bro. Boerstler, that you are doing remarkably well.

The INSTRUCTOR is a little late this month, for which our readers must blame the Utica convention. If we had commenced work on our journal at the usual time it would have been impossible to have given anything like a full report of the convention, and as it promised to be such an important one—almost equal to the National—we delayed work in consequence. We have the satisfaction of presenting a complete synopsis of the proceedings elsewhere, together with some of the essays, and even now the INSTRUCTOR will probably reach its subscribers before any of the other monthly bee journals are out.

CIRCULARS, ETC., RECEIVED.

From A. I. Root, Medina, Ohio, a very

S. S., who inquired for "Art of Propagation" in the Dec. No. of the INSTRUCTOR, can procure the same by sending 50c. to B. F. Clayton, editor of *American*

complete 32 page catalogue and price-list of apiarian supplies, embracing almost everything used in bee-keeping, from a 3 penny nail to a steam engine.

J. H. Nellis, Canajoharie, N. Y., sends his eighth annual circular and price-list of supplies, which will also be found very complete. It contains twenty pages.

Messrs. Riegel & Drum, the enterprising supply dealers of this place, have issued their catalogue and price-list for 1881. It contains eight pages, and embraces everything necessary in advanced bee culture.

Chas. F. Muth, Cincinnati, sends us a neat little 32-page pamphlet, entitled "Practical Hints to Bee-Keepers," which contains many useful directions and suggestions to bee-keepers, although, of course, it cannot treat of the subject of bee-keeping very fully in so limited a space. Price 10 cents.

FEBRUARY AND MARCH MANAGEMENT.

As February will be pretty well advanced before this number of the INSTRUCTOR reaches our patrons, what we may have to say under this head will apply more particularly to the month of March. Bees have died largely everywhere during this severe winter, and many who have lost heavily will no doubt have their losses much increased before the fruit blossoms make their appearance. Spring dwindling will no doubt be heavy unless the weather should be unusually favorable. For these reasons we should be careful and vigilant to do everything we possibly can for the comfort and well-being of our bees. Every hive should be examined to see that they have sufficient stores, and where there is any lack they should be fed either candy or syrup, or what is still better, if you have it, sealed honey. Though after brood rearing commences thin syrup, made of A sugar, is the best, from the fact that bees need much water when rearing brood. Even where they have plenty of honey, we would advise feeding this thin syrup (two parts of sugar and one of water) during pleasant weather in March, to the extent of a quart or three pints to the colony every two or three weeks. The quantity should depend on the strength of the colony, and should be placed as conveniently as possible to the brood nest. We know of no one thing that will operate as effectually against spring dwindling as feeding this thin syrup. It gives the bees both food and water, and this,

with sufficient heat, stimulates to brood rearing. Their instinct inclines them to cluster in the brood nest to keep up the necessary heat to accomplish this desirable result; and thus we see as they have both food and water inside of the hive, and a work to accomplish, also within their domicile, they seldom venture forth unless the weather is so pleasant that they can easily return again. This feeding should be done in the evening that robbing may be prevented, and also that flying out may be avoided as far as possible. Keep your bees on only so many frames as they will occupy, inserting an additional frame of comb in the center of the brood nest as occasion may require. Should any colonies prove queenless or weak, unite with other colonies. Weak swarms can do but little in the way of raising brood, for the lack of heat, until the weather is quite warm. Avoid all upward ventilation and keep on chaff cushions or blankets, that the brood nest may be kept as warm as possible. Don't disturb your bees, if you can avoid it, with the thermometer less than 45° above zero; 60° will be better. And don't fail to attend to them the first warm, pleasant day. Rye flour can be fed to advantage in northern latitudes, until the time for natural pollen, by placing it in sheltered nooks during pleasant days in March and April. To get the bees started place a bit of comb honey on the meal, and if the weather is pleasant and no pollen to be had, they will soon appropriate it. If your bees have been wintering in-doors, don't put them on their summer stands, except for a fly or two on pleasant days, until toward the last of April. Exercise judgement, and deal with your bees in a rational way, and success will crown your efforts.

The following are extracts from some of the letters we have lately received, and show in what estimation the INSTRUCTOR is held by bee-keepers of experience. It is certainly a source of great gratification to us that our efforts to furnish a journal devoted solely to practical bee culture, and the interests of all honey producers of America, are meeting with such hearty encouragement from bee-keepers all over the country:

My Jan. No. came duly to hand, and I assure you that I feel pleased with it. That one article, "How to feed Bees in Winter," is worth the cost of the whole volume many times over, to the careful,

thoughtful bee-keeper. Yours Truly,
SAM'L STEVENSON.
Morenci, Mich., Jan. 22.

Each number looks better.

Alliance, O., Feb. 1. JESSE MILLER.

I am much pleased with your journal, both as regards outward appearance and subject matter, and wish you much success in its publication. Enclosed you will find my subscription for 1881.

W. D. WRIGHT.

Knowersville, N. Y. Jan. 26.

I like the INSTRUCTOR very much. It is neat and attractive, and when it speaks says something. One does not have to read a large amount of funny sayings, etc., in order to get a little valuable information.

RACHEL HEALD.

Cardington, O., Jan. 29.

I have just received the Dec. No. I am much pleased with its contents, and think it will become a valuable journal to those interested in bee-keeping.

L. H. PAMMEL, JR.

LaCrosse, Wis., Dec. 29, 1880.

I like the ring of the INSTRUCTOR.

B. S. UNDERHILL.

Williamson, N. Y.

I have just been reading the January No. of the INSTRUCTOR, and am pleased to see that it is still improving rapidly, and to find so many good, original articles of importance to bee-keepers. I consider it superior to any bee publication of its class now in existence.

FAY KENNEL.

South Gates, N. Y., Feb. 1.

Allow me to compliment you on the improved appearance of the INSTRUCTOR. I am taking all the bee journals, but think yours is rapidly attaining FIRST RANK.

F. L. WRIGHT.

Plainfield, Mich., Feb.

We are very much pleased with your journal. It was very favorably received at the late convention at Utica. We pronounce it the best monthly bee journal of the day.

L. C. ROOT & BRO.

Mohawk, N. Y., Feb. 9.

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.

Honey Markets.

REPORTED FOR THE INSTRUCTOR.

CINCINNATI.—We pay 8 to 11 cts. for extracted on arrival, and 16@20 cts. for choice comb honey.

Trade in extracted good and sales lively, especially in clover honey. Box honey dull and prices lower. CHAS. MUTH.

CHICAGO.—White in 1 lb. sections, 22 cts.; 1½ to 2 lb sections, 20 cts. 3 to 10 lb boxes, 10@16 cts. Dark, 3@5 cts. less than above. Extracted: white, 9@10 cts. per lb.; dark, 8@9 cts.

We find that 1@1½ lb sections sell better here than in any other shape, and bee-keepers would do well to get their honey up in this shape. CONNER, BURNETT & Co.

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.

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

NEW YORK.—Market at present dull, with tendency to lower prices. Best white comb, small neat packages, 18@20 cts.; fair do., 15@16 cts.; dark do., 10@13 cts. Large packages about 2 cts. lower. White extracted, 9@10 cts.; dark, 7@8 cts.

Beeswax: Prime quality, 20@24 cts.

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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. 1-2

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These have been produced by careful cross breeding of the best Italians from different localities:

Untested Queens (laying)	- - -	\$1.50
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Pool of Bees	- - -	1.50

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Do not Send to Italy, When we Have Better Bees at Home.

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PHRENOLOGY.

The time has come when people do not question the utility of Phrenology, and men in all departments of life are now applying its principles, both in self-culture and in their dealings with others.

The Phrenological Journal of New York is the only periodical devoted to the subject, and it includes with this all that relates to Human Nature, and the improvement of men physically, mentally and morally. In the prospectus for 1881 the publishers make liberal propositions to subscribers. The price has been reduced to two dollars a year, and to each subscriber is offered a new Phrenological Bust. This Bust is a model head, made nearly life size, of plaster of Paris, and so lettered as to show the exact location of all the Phrenological Organs. It is a handsome ornament, well adapted to the center-table, mantle-piece, library or office. With the aid of this, and the illustrated key which accompanies it, together with the articles published in the Phrenological Journal on Practical Phrenology, each person may become quite familiar with the location of the different Phrenological Organs, and a good judge of Human Nature. The Bust is sent by express, carefully packed, to every subscriber who sends in addition to the subscription price (\$2.00), 25 cents extra for the boxing and packing; or, No. 2, a smaller size, will be sent by mail, post-paid, on the same terms. To those who have the Bust, or prefer the new Book Premium, will be sent "How to Educate the Feelings and Affections," worth \$1.50. Our readers can not do better than to subscribe at once for the Phrenological Journal; it will be found the best possible investment for the money.

Those who desire a more explicit description, together with prospectus of the Journal, should send their address on postal card, or accept the publishers' offer, and send 10 cts. in stamps for sample copy of the Journal to FOWLER & WELLS, 755 Broadway, N. Y.

Rev. A. Salisbury. 1881. J. V. Caldwell.

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Send for Circular.

2-7

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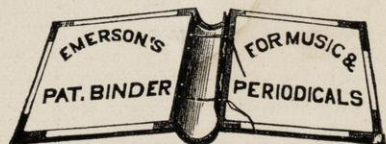
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