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The bee-keepers' instructor. Vol. IV, No. 9 September, 1882

Somerset, Kentucky: Webster Thomas & Sons, September, 1882

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VOL. IV.

SEPTEMBER, 1882.

NO. 9.

THE
BEE-KEEPERS'
INSTRUCTOR.



A MONTHLY JOURNAL

Devoted to the Science of Bee-Keeping in All its Branches.

Webster Thomas, Editor.

WEBSTER THOMAS & SONS,
PUBLISHERS AND PROPRIETORS,

SOMERSET, KENTUCKY.

ADVERTISING RATES.

Advertisements of less than 1 inch, 8 cents per line, each insertion. 1 to 3 inches, per inch, each insertion, 75 cents. 12 lines of nonpareil, our advertising type, containing about 9 words per line, make one inch. Discounts will be made as follows:

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W. THOMAS & SONS.

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After this date I can fill all orders for queens immediately. Our queen cells are all

Built in Full Colonies,

And are from the best strains money can buy. There are positively

NO BLACK BEES

in our vicinity, and those purchasing of us will get their money's worth. 8 queens, \$1.00 each; 6 for \$5.00. Tested, \$2.00; 6 for \$11.00. No supplies for sale. Bees by the lb., nucleus and colony for sale cheap.

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Order now. Remit by Bank Draft, Post Office Money Order, or Registered Letter. Boxed and shipped without a Moment's Delay. Factory running day and night. Organs built on old plan, \$30, \$40, \$50, 8 to 11 stops. Catalogue Free. Address or call upon DANIEL F. BEATTY, Washington, New Jersey.

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Makes a SPECIALTY of rearing fine Italian queens. All queens bred from imported queens, and from the purest and best home-bred queens, and the cells built in full colonies. No black bees in the vicinity. During June queens will be \$1.00 each; tested queens, \$2.50 each. Single queen after July 1st, \$1.00; six for \$5.00; 12 or more, 75 cents each. Tested queens, \$1.50 each. Make money orders payable at Flint, Michigan.

WARRANTED ITALIAN QUEENS
\$1.00; 6 for \$5.00. Tested Italian queens, after June, \$1.50. Send for circular.

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THE Bee-Keepers' Instructor.

Devoted to Practical Bee-Keeping in All Its Branches.

VOL. IV.

SOMERSET, KY., SEPTEMBER, 1882.

NO. 9.

Published the mid-
dle of each month.

“EXCELSIOR.”

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

Our Farewell Number.

With this issue the INSTRUCTOR closes its existence, and hereafter will be numbered with the things that were. We much regret to make this announcement, and know there are others who will regret it also; for during its existence the INSTRUCTOR has made many warm friends who will miss its accustomed monthly visits. We find, however, that it is not paying us—and has not during the two years we have had control of it—for the time, labor and money expended upon it. We are now, as we always have been, publishing it in connection with a weekly paper, and find that, owing to the pressure of other duties, we cannot continue its publication without increasing our office force—something we do not feel justified in doing. During the time it has been in our charge we have lost no opportunity of improving it whenever it could be done, and think that in quality of contents, typographical appearance, and general “make-up,” it will now compare favorably with any of the other bee publications. Our support, however, has not kept pace with the improvements, and will not warrant us in continuing it at its present standard; so, rather than issue a second or third rate publication, we prefer to drop it altogether.

We have made arrangements with Mr. A. G. Hill, publisher of the *Bee-Keepers' Guide*, Kendallville, Ind., to fill out all of the unexpired subscriptions to the INSTRUCTOR. Mr. Hill is a practical bee-keeper of large experience, is a terse, able and vigorous writer, and we regard the *Guide* as decidedly the best low-priced journal published. We think our readers will lose nothing by the change, and hope this arrangement will be satisfactory to all.

In conclusion we desire to return our sincere thanks to the friends who have supported and encouraged us in the past, and especially to our able corps of contributors, to whom much of whatever reputation the INSTRUCTOR may have made is due. The record made by it during the past two years is one we need not be ashamed of, and we quit its publication with the consciousness of having tried to do our whole duty by the bee-keeping fraternity, and render equal and impartial justice to all. We feel that our labors have not been wholly in vain, for though the publication of the INSTRUCTOR has been no gain to us in a pecuniary way, we know that it has been of benefit to at least a few others, and helped them over some of the rough places in the path of bee-keeping.

Very Respectfully,

W. THOMAS & SONS,

Our Contributors.

For the Bee-Keepers' Instructor.

The Golden Bees—A Reply to Friend Poppleton.

JAMES HEDDON.

No, no, friend Poppleton, I did not mean to be contemptuous toward any person, but only to make my disbelief in a few bee-keepers' mistakes as impressive as possible. I want to say on the above question, as a political orator said to the democrats here when he found that the republicans had carried Indiana, "you're whipped, you're beaten, aint you?" but I wont; for friend Poppleton must see by this time that the practical experience of bee-keepers is decidedly against him and the few others who still stick to the "beautiful bees."

Yes; I do think that many stick to the rings for the sake of the rings, the beauty of the rings, and the fact that they can make rings duplicate themselves easier than qualities; and others still through prejudice. If the rings and the best qualities (which Mr. P. would try to make us believe they denote) are as he says inseparable, then we who are breeding for best qualities will get the rings as fast as those who are breeding for rings will get the best qualities, will we not? Why not breed for just what we want, directly, and not indirectly.

The sole object of my apiary is surplus honey. If I rear and sell queens and full colonies, I only change the recipient of the object in part. The purchaser has the same object in view. It is much more convenient, as well as honorable, to make, use and sell the same goods.

Now about the drones: I have never looked through my colonies on full sheets of wired foundation, to see if there was not *one* drone in the hive, and if I should I would know that the big lazy fellows often awkwardly go into hives not their own; but I do not now remember seeing a drone in one of those hives, while in a few hives of special action each colony is alive with them, and brood for more, as we noticed yesterday. Has Mr. P. used full sheets of foundation, *on wires*? The wires hold the foundation from moving sideways far enough for the construction of even a *few* drone cells.

Friend P. says this is the first time he remembers seeing the statement made that extra prolificness is of no value, though he made it some time ago. This

proves that Mr. P. was original in the idea, and I found also that our friend W. F. Clark, of Canada, had logically reasoned to the same conclusion. Thoughtful, observing, experienced men will naturally reason to this conclusion, independent of any reminder from others, and to illustrate to you that I did not borrow the idea, and that it has been in print for some time, let me refer you to Vol. X, (1876) of the *American Bee Journal*, page 44 of the February number, bottom of right hand column, in the report of the Michigan State Bee-Keepers' Association.

In regard to the temperature in hatching time, I wish to say that the "75°" is a typographical error. I am confident that my manuscript said "95°." When I saw the error in last month's journal I said to myself, bee-keepers of any experience will guess that the typo made a mistake in reading my Egyptian hieroglyphics.

In regard to the merits of the dark vs. the light Italians, Mr. P. is quite correct in his admission that the dark ones are the best for going up-stairs to build comb, or put surplus honey in the upper stories; but I wish to add another truth, viz.: that the two-story extracting system is by far the best; much better than the one-story, where you extract from the body of the hive. In this we no doubt honestly differ. Well, in regard to our capability of judging, the readers must judge for themselves.

"If self the wavering balance shakes,
It's rarely right adjusted."

I wish to say, however, that my chances of judging correctly are these: I have managed both styles of hives for the extractor to a greater or less extent for years. During 1873-'74 I extracted from nearly my whole apiary of 80 colonies, and of those 32 were 28-frame one-story hives; most of the balance were two-story. This year I have 50 of the one-story hives and some twenty of the two story, and though I made these 50 to accomplish the double purpose of utilizing 50 nicely painted winter packing boxes, and to run them in an out apiary where I was not to watch for swarms, I am to-day sorry that I made them at all. Mr. Poppleton says he is afraid he will remain a "contrary cuss" and stick to his opinion. I once met friend Poppleton and we had a very long and very interesting talk. It seemed to me then that he was perhaps a *little* marred by a big *set* in certain ways, because they were *his* ways, but then I'll bet he thought the same of me. I would not have mentioned this but for the admission at the close of his article that he himself fears he will re-

main a "contrary cuss, as Artemas Ward says." Of course all know that to stick to what you really believe and feel to be true is just the reverse of "contrary." It is the honest necessity of all. But it is only a question of time; we shall have friend Poppleton by and by. "As we get there before you do, we'll tell them you are coming too." We will "hold the fort" till you get there. But now about

QUEENS BY MAIL.

Allow me to come right up and say that my experience in mailing queens was exceptional. About the first queen-shipment that I ever did was during times when queens were not mailable; and when I began to ship on a more comprehensive scale, feeling my lack of experience and personal knowledge, I purchased of friend A. I. Root the most popular Peet mailing cage, supposing it was the best. Queen after queen was returned dead. Every time I put a choice tested queen into the post-office I said to myself: "This is too bad, but good-bye, and may luck favor you, for I cannot any farther." Well, I have duplicated such a large number of queens that this year's queen business has, to say the least, not a cent of profit in it. A few weeks ago friend Alley, of Mass., seeing an account of my troubles, kindly sent me one of his all wood, sponge and diluted honey mailing cages. I commenced to make them and ship by mail in them, and have had not one case of failure since. All my customers report "queen arrived in splendid condition," and we are all happy together. Of course I feel most grateful to Mr. Alley, for "a friend in need is a friend indeed." I also feel obliged to friends Thomas and Hutchinson, and others, for what they have done directly and indirectly for me in this mailing-cage matter. I purchased 100 Peet cages of friend Root, and they have cost me ten times what I paid him for them. Many of them had been used, and some had soft and some hard candy in them, and all were worse than useless to me. Some had tin water bottles, and these failed as badly as any. But then I was fortunate in getting these worse than useless goods of Mr. Root, for all I have to do now is to kindly report my losses, and I presume he would cheerfully roll out that barrel of compensation money, and give Southern Michigan still another large wad. That is, he would if I would let him, but I won't. He sold me the cages in good faith, and cheap enough, and I was ignorant, and so was he (and is yet), and why not I bear the losses that justly belong to me? He still maintains

that this "candy" is the best kind of food; also that this tin cover is adapted to the nervous feet of the bees. In this we differ, and this makes the cages seem to me worthless, and to him valuable. He should allow me to return these cages and take their value in other goods at his factory. I shall ask him to do so, and have no doubt but that he will.

Just in the proportion that any transportation method succeeds in getting the queens to their destination alive, in just that same degree I look for perfection in the condition of these live queens. A queen may be alive, but imperceptibly badly injured. I know this to be true. Therefore I still would order one tested queen or four or more dollar queens by express, where the express office is as handy as the post office. But with the all wood cages I have but few fears left regarding damages of any serious nature.

Mr. Hutchinson uses a sugar-honey paste, while friend Alley claims that diluted honey, held by a sponge, answers the double purpose of food and drink. I am inclined to favor Mr. Alley's philosophy, for we know that the honey, though only in equal parts with the water, will hold the water from sudden evaporation. I should be more afraid of mail bags during the extreme heat of summer than any other time, for fear that they might get laid in the sun for a long time, waiting for late trains; also of chilling in cool weather, though there is but little danger of the latter.

Mr. Enas' advice in regard to cutting up uncapped combs to insert in jars of liquid honey is not good for the eastern markets. In the first place, comb honey in jars is about played out, and when it was in full force uncapped honey looked so "snide" that all "cutters" rejected it.

Allow me to say to our inquiring friend, Mr. John Shallcross, of Philadelphia, that most any of us Southern Michigan fellows can teach him all about how to get large yields of surplus honey. It has been an excellent season here, and this makes our fixtures of first quality. We have a farmer who has increased from one to twelve good strong heavy colonies, and got up to date over 200 lbs. of surplus honey (all white), with the entire fall crop before him. Of course he used Given foundation above and below (wired below), and most assuredly he used the Heddon-Langstroth hive and case, and purchased all of me. Now it is not fair for L. C. Root to rob us of this year's arguments in favor of our supplies because we had the honey shower this

time, and he is in the dearth. We hope his 1883 circular will stand by the 1882 crop.

Dowagiac, Mich., Aug. 26, 1882.

The typo will have to plead guilty to the mistake friend Heddon, for we find on looking closely at your manuscript that your first figure was meant for a nine. Really, however, we can't say that he is much to blame, for your writing is "awfully" hard to read sometimes. —We are very glad to hear of your success in shipping queens with your new cage. We thought there must be something wrong with your cage, feed, or manner of shipping, to cause such unusual losses.

From the Bee-Keepers' Exchange.

The Use of the Fountain Pump.

E. E. HASTY.

This engine of apicultural warfare is one of my this season's acquisitions; and perhaps my experience will be of use to others who have not yet invested in one. The fountain pump is not what I expected of it for controlling bees, and yet it is useful enough that I am not ready to lay it aside. In the first place the spray nozzle will not throw water far enough to deal with a swarm that meditates a "French leave." When bees fly near the ground they do not, as a general thing, require any sprinkling to keep them. Swarms that incline to escape usually move with great celerity, and mount upwards to a considerable height very soon after leaving the hive. I find it best to keep the implement with the fire nozzle on, shifting to the other when that is plainly needed. A little practice enables the operator to make a spray with the single stream. A vehement stroke has a tendency to stomize the stream; and if one at the same time sweeps the instrument laterally the water divides into quite fine drops. Swing the right hand around partly behind you, when drawing out for a stroke, and bring it rapidly forward while striking, as if making the effort to toss the water forward. The water can be got among the bees in good shape; and so the next question that arises is, what good is it calculated to do when it gets there? Here is the weak point. Bees, when thoroughly bent on flying, do not pay much attention to a

little water, either spray or rain. It is only a few days since I had a swarm out when a fine rain began falling rapidly, spraying them more thoroughly than a sprinkler could do. They did not show any inclination to return to the hive; and scarcely any perceptible effect appeared, as to hastening their movements in alighting. A swarm in full flight for the woods is very unlikely to be stopped by a fountain pump, I judge. In fact, they are pretty apt to keep above the range of the fountain pump altogether. Doubtless a wearied, halting swarm, just beginning to think of stopping of their own option, could be made to cluster, just as they often are by throwing dust, etc. Again, bees often return to the hive of their own accord, after flying awhile; and I take it that success in making a swarm return to the hive with the fountain pump is usually imaginary—making them do just what they would have done anyway. I would not pronounce the implement unavailing for the purpose of capturing fly-aways, but unless there was some other use for it, it wouldn't be worth cost and labor.

I desired the pump most of all to prevent those dreadful melees, in which three, four or five swarms come out in quick succession, tangle all up with each other, get mad, ball and kill all the queens and make the befuddled owner wish they would take to the woods and leave the apiary in peace. Well, I purchased the beautiful little engine, and have done my prettiest with it—and have had worse scrapes of the kind than ever before. If not entirely powerless to prevent swarms from uniting, its powers in that line are at least very moderate. It is not only swarms that come out simultaneously from hives standing side by side, that will get together in spite of your sprinkling, but those standing fifty or sixty feet apart likewise, and those that come out after the first swarm have two-thirds settled. I'm not quite sure but trying to keep them away stimulates them to want to go. They first spread out over a half acre of territory, and then pass to the right and left and over, and not a few of them right through your furious firing.—In defending a swarm that has already settled it is better tactics to post yourself right by them and play away for all you're worth into the space immediately surrounding the cluster. Even then if the intruders have lost track of their own queen, by her dropping or returning to the hive, they will "linger near" worse than Mary's little lamb, (scarcely anything in nature is more persistent than a

bee,) until in the end you drop your squirting machine with exhaustion, and let them have their own way.

Having now spoken sufficiently concerning the sad deficiencies of the implement, I will tell what good I can of it. When I have a swarm out and another commencing to come, I find that by putting the fire nozzle directly to the entrance and playing with full force for awhile, so as to make water fly all about the interior, that colony will then postpone swarming for several hours, and let me hive the one already out in peace. Were it not that one can't be on hand in season this would be almost a panacea. But the job must be done relentlessly; a little squirting water at the outside is no use.

The one thing I do prize my pump highly for is this. By means of it I can leave the apiary for a half day in swarming time. A swarm well sprinkled every half hour will not leave the tree. A person not expert in bee craft can see where the swarms come from, and sprinkle them after they cluster and keep them until the master returns. If there are a half dozen of them clustered in all sorts of places the work of keeping them quiet is not great with the assistance of the pump. If some of them are tangles, containing more than one swarm, they are probably better off to be kept in a wet condition a spell. A swarm entirely quiet and wet down has but little attractive power for swarms that come out later.

To change the subject, I like, when I can truthfully, to tell

A BIG YARN.

And this time I have a queen story to tell. Not very long since I was cutting out queen cells preparatory to returning a swarm to the hive from which they came. Being in haste I threw the cells on the ground and forgot them. Rain ensued, lasting a considerable time. Just about twenty-four hours after I cut the cells it came into my head to go pick them out of the dirt and examine them. On cutting one of them open out came one of those extra-live, scabblesome young queens that one inclines to hang on to tight, lest they fly at once to parts unknown. I took her to a strong colony that had, by some mischance, lost their queen, and were full of drone brood laid by fertile workers. I dropped my young queen on the alighting board of this colony, and she was at once pounced upon by the bees. She never flinched nor looked back, but like the fellow who said "Make way for Liberty," struggled forward toward the door. After awhile the

sentinel bees relaxed their hold upon her somewhat, and let her pull away from them and go in. A week later I found her in peaceful possession of the hive, and drone laying had nearly ceased.

And I'm keeping a cluster quiet with the fountain pump while I finish this article. Richards, O., July 15, 1882.

From the Bee-Keepers' Magazine.

Marketing Honey.

Much has been said and written on the above subject, and to some it will appear "hackneyed;" yet we can assure all that it is by no means exhausted, and will not be until we can go into the rooms of our honey merchants and see cords of nicely crated honey, tier on tier, the crates thin, smooth, clean and white, with their glass sides revealing the honeyed wealth within in a manner to attract the attention and tempt the palate of the most fastidious taste. Quite a number of our most progressive and wide-awake bee men bring their honey to market in just this way, and as a result receive from three to five cents per pound more for their crop. Besides, it sells at once, while honey of the same quality but put up in the sloppy style, uncleaned of propolis, ungraded, rough boxes, and crates sometimes leaking, remains on the shelves of the merchant, an advertisement of the shiftlessness and bad taste of the producer, and is, after all the rest is sold and gone, taken as "Hopkin's Choice," as a "job lot" by some "city mixer," cut out of the section boxes and cut up into strips and dropped into honey jars previously nearly filled with a preparation of $\frac{2}{3}$ glucose and $\frac{1}{3}$ honey, and *very neatly* labeled "CHOICE NEW HONEY," and thus the unskilled producer is made unknowingly to promote the crime of adulteration, and injure a business which he desires to see protected. 'Tis true his honey finally brings an enormous price, but the profit goes into the pocket of a rascal instead of his own. We have seen with our own eyes 2,000 lbs. of white honey of good quality offered at 14 cents per pound, and very slow sale, while honey properly prepared for market, was selling readily at 20 cents. The former was all in rough crates boarded on all sides and completely hid from observation, and not being accompanied by any one it was handled as any other freight, and of course nearly ruined. Again, some very nice *looking* honey comes to market, but after being taken out of the crates by the retailer, very

many of the sections in the centre of the crate have many empty cells, and other cells filled but not yet capped. Still others have in the same crate different varieties such as white clover or basswood on the outside next to the glass, and further in, golden rod, aster, and sometimes even buckwheat. The honey merchant usually will *ask* the very highest price for honey honestly and beautifully put up and at the same time *guarantees* it to be alike all through. While those crates which are merely veneered with white choice combs he *asks* less for and guarantees nothing, but the retailer usually bites at such bait but once, and after that willingly pays more for a guaranteed article.

In conclusion we advise smoothly-dressed crates of uniform size, weighing from twenty to thirty pounds, sections as fine as a saw can be made to cut them, carefully cleaned of all propolis before glassing, and then all boxes or sections above one pound in weight, enclosed with a very thin glass; and in crating, three or four grades should be established, and finally the producer's name, grade, and guarantee of quality, should be neatly stenciled on each crate; also the exact gross and net weights of the crates. Great care should be taken in handling and loading, and unloading. In case of small producers, several should club together and send some one of their number with the honey to the city, and if left to be sold on commission, leave it only with parties used to the handling of honey. If any are in doubt regarding a place to leave it where they will be honorably dealt with, if they call at our office we will do all in our power to aid them in this matter. For extracted honey we recommend new mackeral firkins holding from 100 to 300 lbs. They are strong enough, look better, and cost only about half as much as oak or ash firkins. They should be coated on the inside with paraffine or beeswax after the manner recommended in the "New Bee-keepers' Text Book," and the grading of the honey should be the same as we recommend in the case of comb honey. It is soon in a candied condition, and a tryer put down through the middle to bottom will reveal its true character the same as in trying butter.

FEEDING.

If there is one thing in modern management more important than another to be done, in order to secure to the utmost the profits to be derived from keeping bees, that thing is *judicious* feeding;

and yet this is the very thing most neglected by seven-tenths of all persons engaged in the business. Until quite recently men have indulged in the sentiment once so prevalent that bees "work for nothing and board themselves." Indeed we know of some parties who last spring deliberately let their bees starve to death rather than spend a few dollars to tide them over the cold, dry and backward season. The country annually loses several million of dollars by this gross neglect, when a few thousands would have supplied the needed food. Just in proportion that this matter of feeding is attended to, will our revenues from apiculture increase? We said *judicious* feeding, for it is a fact that bees may be fed when it will prove a positive injury to them. For instance, when we desire to stimulate for early breeding we sometimes feed those which have plenty of sealed honey, and thus fill up with feed all the empty cells in the hive and *defeat* the very end we had in view, for in such a case the queen has no room to deposit eggs, and such hives soon become worthless. The right way would have been to uncap the cells of several of those frames of sealed combs and exchanging for empty combs with other hives weak in stores, and leaving some of the uncapped honey in this hive also. In this case the bees would at once commence to eat and carry this honey from the center to the outer combs, the queen would be fed and stimulated to commence laying, and soon a lot of vigorous young workers would emerge from the cells so recently occupied with sealed honey. Again the *quality* of food needs discrimination. In the spring when bees fly out frequently, a feed made of brown or even the best quality of grape sugar and quite thin, is (if fed hot) the very best, as it promotes rapid breeding, and is nearly all consumed for this purpose; while if this same food were given in the fall to be stored for winter use, it would almost assuredly destroy the colony. We believe that with few exceptions the poor *quality* of winter stores is one of the prominent factors of disaster. The chemical composition of much of the late fall honey contains the living germs, which in the stomachs of bees long confined to the hive develop in the form of dysentery and other kindred diseases which annually sweep away whole apiaries. To forestall these sad results, we have sometimes recommended the setting away, in June and July, frames full of sealed honey to be exchanged for this fall stored honey when preparing the bees for wintering;

but this course is bothersome and very expensive, as this white summer honey would bring in market at least 15 cents per lb., while the best feed made from granulated sugar, one-third pure water, would cost the bee-keeper only about 7 cents per lb. The reason why we have not urged this latter method more strongly in the past is that our appliances for feeding have not been such as to warrant entire success, except in very careful hands; but now we have a feeder in which all may safely confide, as there is no possible chance for robbing, and as the feed is warm when put into the feeder, and being introduced down in the brood nest among the bees it is kept warm until it is all stored in the cells. A single feeder holds from eight to ten pounds according to the size of frame in the hive for which it is intended to be used. A fair sized colony will empty one of these feeders in a single night, so that a hive having only empty combs may be prepared for the winter by at most three or four times feeding, and thus a single feeder may be made to answer for several hives, the only difference being that in this case a couple or three weeks would be required to feed a moderately sized apiary with half a dozen feeders, while if each hive had a feeder it would require only as many days. In all cases the feed should have a temperature when introduced of 85° Fahrenheit.

Bee-keepers intending to adopt this feeder the coming fall should keep their hives closely extracted, never leaving in the hive a sufficient supply of honey to last over two or three weeks. This course will stimulate the bees to the most intense activity, the queen partaking of the general enthusiasm will lay profusely, and as a consequence, will have plenty of young bees to go into winter quarters by the time feeding commences. They will also store away and seal over these new stores of feed much faster than old bees would do, and besides when spring comes, instead of being on their "last legs" and ready to die, as is the case where very old bees are wintered over, they will be vigorous and hold out until a new lot are reared and ready to "step into their shoes." Thus we find feeding is of the utmost importance in the cultivation of bees, as well as of hogs, horses, cows, sheep, hens, etc., etc. When we look back and see how utterly foolish we with others have been in this matter of withholding from the industrious bee that which we freely grant to all our other domestic animals, we feel ashamed of ourself, and shall do what we can in the

future to rid the subject of bee-keeping of these old-fogy notions which, as in all other things, work "only evil and that continually." Friend Heddon lately "warmed us up" on the foolishness of cutting out the old black-hard-crooked combs of log gums and boxes, and transferring them to movable frames, when we could in two days' time fill our hives with choice, straight, fresh, worker combs, by a few cents' worth of comb foundation.

From the Kansas Bee-Keeper.

Foul Brood.

J. E. POND, JR.

In a prior article I gave a brief description of that dread scourge of the apiary, foul brood. I now propose to give a brief history of the attempts made in days past to effect its cure, the success with which such attempts have been met, and my own opinion, based on my experience in combating the disease in my own apiary, as to the best method of eradicating it. I am well aware that an article written for a bee journal must be brief, in order that too much space may not be devoted to a single subject, and that many matters of interest and importance may be given its readers in a single number, and my excuse in case this article seems of more than proper length, is the importance of the subject matter, the disease being deemed by all apiarists, who have any knowledge of the subject, as the most difficult to manage and most devastating in its effects of any that afflict our apiaries.

The origin of the disease is of great obscurity, all that is really known being that it is foreign, and probably introduced into a colony more often than in any other manner by feeding West India honey without taking the precaution to thoroughly scald and remove all impurities from it. It is a fungus, however, and exists in spores, which spores are so exceedingly minute as hardly to be discerned by the eye alone, and can only be positively identified by the microscope. When this disease is once introduced into a colony, it is exceedingly easy for these spores to be carried from one hive to another by becoming attached to the feet of the bees, and as interchanges of visits are often made, either for the purpose of robbing or by mistake, it would be almost miraculous if, after one colony became contaminated, all the others in the vicinity were not shortly contaminat-

ed also, as a single spore carries the disease as effectually, although not as quickly, as though it were introduced by feeding infected honey.

The disease is one of the immature brood alone, and does not affect the bee after hatching; consequently the first step to be taken, when it is found that the disease exists, is to remove the queen, for just so soon as we stop the production of brood, we check the further advancement of the scourge in a given hive.

In days past many remedies have been recommended, and as the disease was known to affect the larva only, disinfectants were naturally the first that were made use of, although some apiarists have proposed drugging the bees themselves, forgetting that while some things may be done by proxy, the curing of diseases was not one of those things. Chlorinated soda in solution was among the first disinfectants used, the interior of the hive, the frames and combs, being thoroughly washed and sprayed with it, and at first it was thought it would prove a specific; but when the next season saw it again break out with all its former virulence, it was concluded that it had no value as a remedial agent in curing the evil. Many other remedies were tried and thrown aside as valueless, until a short time ago the discovery of salicylic acid caused hope anew to arise that at last a positive specific was found.

Mr. Muth in his little book called "Practical Hints to Bee-Keepers," gives a description of the use made of this remedy by him with perfect success, and any one who desires to follow the matter farther in that direction will do well to read that little work. For myself, I don't believe that it will pay to attempt to cure the disease, and at the same time save the hive and combs, for in order to do so great care and intelligence must be used, and as we can never tell when the spores are all destroyed, we run the risk while attempting the labor, not only of finding the disease made latent for awhile to cause us more trouble another season, but also that of having it carried into our own and our neighbors' hives, and thus finally establish through a large section of country where otherwise it might have been confined by the means I shall hereafter describe, in one or two hives in our own apiary.

My plan is this: I remove the bees and queen from the infected hive, fasten them in a clean box, put them into a cool cellar and there let them remain until

the point of starvation is reached; they having then used all the contaminated honey they took with them, I put them in a new hive on frames of foundation and treat them as I would a new swarm. By this means we save our bees, and they will flourish as well as ever. The honey I remove, thoroughly scald and skim, and then feed; one boiling will destroy every trace of the fungus that existed in it. The comb I render into wax if I am sure it will never be made into foundation; otherwise I should bury it so deep that it would run no chance of being resurrected. The hive and frames I should burn, totally and thoroughly to ashes. Thus the loss would be simply the hives, and the ashes of course make a capital fertilizer and can thus be used. By adopting this plan we are positively assured that the disease is eradicated, and that no danger exists of its breaking out again in the near or far future. If, however, any one desires to follow any other plan and try to save their hives, they have my full and free consent; but I now warn them that if they make the trial they will find a difficult task before them, and plenty of leisure hereafter in which to repent.

Foxboro', Mass., July, 1882.

From the Prairie Farmer.

Selling Honey to Advantage.

MRS. L. HARRISON.

There is nothing a bee-keeper enjoys more than plenty of "clear cash" at the close of the season. This is what he has been aiming for, working and toiling early and late during the year, and the jingle of it is pleasant.

Some apiarists are good producers, but have poor faculty in disposing of the product; others, again, are natural born peddlers—you may push them out of the house, tell them to take their traps and be gone, while they, not abashed, will return and sell you the identical articles you refused to as much as look at, at a good price. Last year we purchased, a few miles from home, beautiful white clover honey, as white as the whitest, for 10 cents per lb., while at the same time, if that honey had belonged to other parties, they would have charged 25 cts. per lb. and obtained it. Recently a lady called and inquired how we sold honey. We told her that we had no white clover honey this year, but yellow fall honey, which we were selling at 20 cents per lb. With a toss of her head she replied, "Mrs,

Gragg bought 20 pounds of a farmer lately for 10 cents per lb."

The farmer who keeps a few bees, obtaining them, most likely by catching a runaway swarm, gives them no attention except hiving them at swarming time, and putting on surplus boxes, considers that what honey they make is clear gain, as "they work for nothing and board themselves." When he takes off his honey, if he has more than his own family needs he takes it to the nearest town and offers it, either at a grocery, or to a friend for sale. When the question is asked, "How much do you want for your honey?" he replies, in a careless way, "I don't know anything about the price of honey; give me whatever you think it is worth? Is 10 cents per lb. too much? Suit yourself about the price; I'm not at all particular." So the bargain closes.

Persons who depend entirely upon the product of bees for a living have reason to dislike this class of bee-keepers. If a farmer has an animal for sale, a fat steer or pig, he will demand the highest price, even to the fraction of a mill, and the same way if it is hay, corn, or oats; but if these lords of the soil have honey, butter, or a chicken for sale, feel that they are in little business, hurry through it as quickly as possible, and get out of sight.

We have known bee-keepers to come to this city with a wagon load of honey, try to sell it at one grocery, telling, by the way, that they were in a great hurry to be back at home. After trying several groceries they came to the conclusion that honey was poor sale. These grocery-men understand their business. They make their living, as the Dutchman says, "by buying *sheep* and selling *dear*." In a short time, with the help of the telephone, all the dealers are informed that there is a big load of honey in town, and that by holding off, it can be purchased at a low figure. We once inquired of a groceryman how much he paid for his honey. He said, "O, there was a fellow who came to town with a big wagon load, and some more of us bought him all out, at 6 cents per pound all round." If these persons had come to town and stored their honey in a safe place the first thing, and then taken samples of it—white, yellow, dark, and extracted, as the case may have been—and dropped in at different places, where they wished to purchase their own supplies, looking at the goods, inquiring the prices, and remarking, "I must purchase before I go home, but I have something to sell," they would have realized double for their honey. If it was at a harness shop, and he needed a

new whip, bridle, or anything in that line, the dealer, who is always anxious to trade, will probably say to his hands, "Boys, how many of you want some of this honey; this man wants to exchange for our goods." The trade is soon completed, and he leaves, perhaps, for a shoe store, and buys, in the same way, all his supplies, sometimes paying out some money, and again have some paid to him. While buying his supplies he will meet with cash customers, and when his honey is disposed of he will return home, laden with comforts for his family, and with more money than he would have had had it been sold for cash only.

Peoria, Ill.

For the Bee-Keepers' Instructor.

Alsike Clover.

L. C. ROOT.

One of the important questions of the day in connection with our bee-keeping interests, is that of supplying forage for our bees.

It is an undisputable fact that the natural sources of honey are in most sections decreasing. The basswood in our forests is being largely cut for timber, and farm lands are being cleared of berries and other honey-affording trees and shrubs.

It is also true that in most localities, even where forage is most abundant, there are times during every season when there is not an abundant flow of honey from general sources. With these facts in view it should not be a matter of surprise that thoughtful bee-keepers are interested in supplying this lack in some substantial manner.

The matter has been brought most forcibly to our notice and has received our attention to a considerable extent. Much has been said in regard to the feasibility of cultivating various plants for this purpose alone. Let me say that I have little hope that this will ever be made a success. For a brief period, while a demand may be created for the seed that may thus be raised, motherwort, etc., might be cultivated in quantity and the seed disposed of, but as a dependence, I am convinced that the yield of honey must be derived from a more general source, and one of greater value as a general crop.

After quite a thorough investigation, I find nothing which seems so likely to supply the demand as alsike clover. I shall endeavor to show its value as a general farm crop, as well as a honey plant, and also to show how it may, if properly un-

derstood, be quite generally cultivated, and fill this vacancy.

I think I am correct in saying that but few have tested the value of alsike clover to an extent that would enable them to speak of its worth with any degree of certainty. Many have sown it in small quantities, and I think that all who have done so will agree with me that bees work very freely upon it. My experience has been that they work upon it much more than upon white clover. In establishing its value as to quality of hay, and as a honey plant, I might give instances where it has been tested in the past, but as we have a recent report of more than usual importance, I will simply refer to this.

Those of your readers who read the report of C. M. Woolver, of Hallsville, N. Y., will remember that he gives as one of the reasons why he secured his large yield was that his bees had access to several acres of alsike clover. Mr. Woolver informs me that basswood yielded but little honey with them, and that his crop would have been far short of what it was had it not been for the clover referred to.

It is generally known that alsike clover is a medium between the white clover and the coarse red clover. I have grown it over two feet high, and it was fine and full of branches. Mr. Woolver runs his apiary upon one of the best farms in Montgomery county, which is conducted by his father and brother. Of the hay as a general crop, they say it is not equalled by any kind of clover they have ever raised. I am an advocate of mixed grasses for hay, and should use it to this extent if no farther. In answer to the question as to how it stands the winter. Mr. W. says that, tested by the side of red clover, he finds it fully equal in hardness.

One point in Mr. W.'s experience is of particular interest to me. With the large area of this clover to which his bees had access, and the scarcity of the yield of honey from other sources, they were able to ascertain to a certainty the quality of honey it afforded. It was of such superior quality that they sold it for a price which was above the market price for best white clover honey.

In conclusion, what I desire to substantiate is this. That the sources from which this lack of forage is to be supplied, must be of the nature of a general field crop. That from the desirability of alsike clover, as to quality of hay, it will be found worthy of attention and adoption by farmers generally.

If necessary it might be desirable to furnish our neighboring farmers with

seed and thus induce them to test its worth, and if they find it valuable as a farm crop, as I believe they would, they would not only receive benefit themselves but would also benefit bee-keepers.

Mohawk, N. Y., May, 1882.

Letter Drawer.

Meeting of Bee-Keepers of West Texas.

In consequence of the great interest that is being taken in scientific bee-keeping in western Texas, a number of bee-keepers met at the office of T. C. Greenwood, in Luling, on the 2d inst., for the purpose of effecting a temporary organization, to be known as the "West Texas Bee-Keepers' Association." Although only a few days' notice of the meeting had been given, there were 420 colonies of bees represented, with a product up to date of about 32,000 lbs. of honey. After some spirited discussion it was deemed advisable to postpone the organization of the permanent association until the 1st of November, '82, so that many living at a distance may have an opportunity to come and take part in said organization.

The following gentlemen were elected officers of the temporary organization: J. S. Tadlock, President; T. C. Greenwood, Vice President; Thomas Balcomb, Secretary; P. H. Callahan, Treasurer.

We respectfully invite all readers of the INSTRUCTOR living in West Texas, or any part of the State, to be present, that we may permanently organize and discuss the many interesting topics connected with the best management of bees for our southern climate.

THOMAS BALCOMB, Sec'y.

Luling, Texas, Sept 11, 1882.

What Caused the Swarming?

I wish some practical bee-keeper would tell me what is the cause of my bees swarming so much, as I have had eight swarms this season from one hive, as follows: May 8th, 15th, 23d, 26th, and Aug. 16th, and No. 1 swarmed July 5th and 15th. Aug. 2d No. 2 swarmed. The last swarm from the old hive on Aug. 16th was very large, but still left plenty of bees in the old hive, that are working in the sections, having two of the Riegel cases about two-thirds full of honey.

All the colonies are very busy building comb and gathering honey. I have taken but very little honey yet, and think I will not get more than 20 lbs. per hive. Peach and apple blossoms and locust

were a failure. White clover has been abundant, but bee men say that the frequent rains prevent the flow of honey. Some of my neighbors in the country have had no swarms or honey yet this season. Their bees are blacks while mine are Italian.

Should my bees continue to increase another season as they have this, I will need a factory to make hives. I fully believe I shall save them all the coming winter without much feeding, as they are very industrious, gathering honey from white clover, which is fresh and green. The buckwheat crop will also soon be in bloom. I lost no colonies last winter. I carefully covered the tops of the hives with chaff, then pressed the covers on the chaff, and fed a little white sugar in the spring, and had them full of brood early and ready for work as soon as there was anything for them to get. I like to handle bees very much, and wish I knew more about them. I have read the INSTRUCTOR carefully all this season, and have learned much from its articles.

JAS. M. INGHAM.

Chillicothe, O., Aug. 19, 1882.

We have been much interested, friend Ingham, in perusing your letter, as you appear to be on the right road to successful bee-keeping. You have certainly had rather a peculiar swarming experience, and yet all is easily accounted for. In the first place, the colony was a very prolific one. This is shown by its swarming so early in the season. The second, third and fourth swarms, and the second swarm of No. 1, were all what are termed "after swarms," that is, swarms that issue in from eight to eighteen days after the first swarm. The first swarm with the old queen usually issues just before the queen cells are capped over, or from 8 to 10 days before the first cell hatches. The first young queen that hatches will generally destroy all the rest of the cells in the hive within a few hours after hatching, if the bees allow her to do so. The instinct of the queen seems to lead her at once to search the hive that she may know that she is the sole sovereign of the colony. She trav-

els over the combs making a peculiar piping noise which is frequently answered by the unhatched queens. This leads the queen to the cells, which are at once destroyed with their royal inmates, unless protected by the bees. If the newly hatched queen cannot get at the cell or cells, she becomes very restless, and (as a rule) finally leaves the hive, taking a portion of the bees with her, rather than stay and risk a battle.

Now the trouble with you, friend Ingham, was that you let the bees have their own way fully, instead of controlling them by cutting out the queen cells. You should have examined your colony just after the first swarm issued, and cut out all the queen cells except two, or three at most, leaving those that were in different stages of development; and at the same time noting the stage of the most advanced cell, so as to be able to know when it should hatch. An experienced bee-keeper ought to be able to tell this to within 24 hours at most. After swarms should always be prevented, if possible, from the fact that they are generally small, and issue with a virgin queen. It is often the case, however, that one swarm will increase in a good season to a dozen or more, and all do well, illustrative of which fact is the case given by Mr. Heddon in his article in this issue.

A colony sometimes gets the swarming impulse so that it is difficult to control it by cutting out queen cells. In such cases take a frame or two of brood and honey from them and give to weak colonies, or else form a nucleus, even if you have to unite them after the swarming season is over.

My Experience with Heddon Queens.

Mr. Heddon's bees, as far as my experience goes, are light yellow. The leather color of the dark Italian seems to be lost in the mixture. They are not

so quiet upon the frames as my own bees, yet they are quiet. I think those who fancy color as well as good nature and good work, will hardly like his bees, if they can get the same good qualities in the dark brown Italians. We may want a little German blood in our bees; I am inclined to that opinion myself. The Germans are better comb builders and quicker to work above. But in getting these good qualities we must not let go any of the good qualities of the Italians, for they possess (by common consent) more valuable traits than the Germans or any other bee, so far as we know. In this mixture we must not go too far. We must hold on to the type and fixedness of the Italians.

Of three queens I raised from a Heddon queen, two of them produce poorly marked bees (he cares not for bands). Of fifty queens raised from my own stock only two or three have shown poorly marked bees. From this I conclude that the Heddon bees may be too deeply inbred with German blood, and therefore have no fixedness of type. The queens will sport in their markings and other qualities as well. If *Apis Americana* is to be found in the mixture of these two races of bees, it will be found, I think, nearer the shore, nearer the dark Italians, where only a little German blood has been infused into their veins, making them better comb builders and more ready to go above. You will remember some few years ago Heddon would have only black bees and no Italians. These made his money. He prospered with them. May it not be that he is just a little too much bent over that way yet? But I like his independent way of thinking and working and talking it out. His purpose is good and his work will bring good results.

I am working in a quiet way for *Apis Americana*, but I am keeping close to shore, where only a little German blood is infused into the dark, leather-colored Italians. I am working for the best workers, and so gentle and self-possessed that they will not run or tremble upon the combs in opening the hives, or even from letting a comb fall upon the ground; and with all this I want to retain the three dark brown bands if they will stick.

Keene, Ky., Sept. 13, 1882.

The above seems to be a fair and impartial criticism from one who has had some experience with Mr. Heddon's strain of bees, and we therefore willingly give space for it

in the INSTRUCTOR. But it seems to us, friend H., that your queen rearing was hardly extensive enough to warrant the truth of the conclusions you arrive at. If you only reared the three queens, and, as would seem to be indicated in your letter, there are black bees in your neighborhood, it is very probable that the two producing poorly marked bees, mated with black drones. The fact that the bees produced by the two queens you originally bought are yellow, would seem to preclude the idea that their royal progeny, when mated with Italian drones, would produce hybrids. Of course, being mixed with German blood, they might revert to that race, but it is not very probable.

Friend Lake's Report.

I intended to follow the article you published on the manner of producing comb honey by another on marketing and how to take care of it, for the August number of your valuable journal, but business demanded my attention. After working all day in the breeding yard and then riding six miles home, over a rough road, no one can be in a very good humor to write "bee articles." But as Mr. E. Taylor, of Lewistown, my assistant in charge of my honey yard at "Honey Dell," our principal honey apiary, has just put in his report of this season's crop to date, and as it presents, for *this* season a fair record, I will give you the figures. It must be borne in mind that this apiary was started this season, and after the *maples* had ceased to bloom. The bees were transported from our distant apiaries, a large majority of them over 150 miles—including a seven mile ride over a rough "pike,"—and of course could not be built up to do the large work of some of our "big guns" at the west. The report stands thus:

Largest yield from one hive, comb honey, finished, 220 lbs.

Smallest yield from one hive, 13 lbs.

Eighty-three hives gave 4,454 lbs., or an average of about 50 lbs. per hive.

Nine hives stored respectively 104, 118, 124, 126, 220, 108, 104, 100, and 121 lbs.—a total of 1125 lbs. and an average of 125 lbs. per hive.

Thirty-three hives made over 60 lbs

each, while 36 made less than 60 lbs. and over 25, and ten made less than 25 lbs.—a very small amount.

But few pure swarms were worked at this apiary, they being made up of hybrid "Bellizonas," hybrid Italians, and blacks. Thirty-one hives of hybrid Bellizonas produced 2863 lbs. of the total amount, an average of 92 lbs. This honey was mostly stored in the 1 lb. section used in the "Perfection Boxes." I use no other.

The Bellizona Italian is the business bee of this country, and if friends Doolittle, Heddon, Carroll, and others, wish to accept a challenge from the little State of Maryland, tell them to name their terms.

CHAS. H. LAKE.

Baltimore, Md., Sept. 25, 1882.

Question Box.

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

All communications for this department should be sent to the above address not later than the 20th of each month, to insure an answer in the INSTRUCTOR the following month.

Foul Brood.

1. If you had a colony of bees that had "foul brood" would you think it necessary to destroy them, or could they be cleansed in some way so that they would be perfectly safe?

2. Please give a description of foul brood, so any one can distinguish it.

3. I have heard that foul brood was never known in the old country. Is this so?

4. Do you think it is caused by very cold winters?

ENQUIRER.

1. If we had but one colony of bees that was afflicted we should build a good hot brush fire this very evening and burn them up, "root and branch." If, on the other hand, we had a number of choice colonies so troubled, we should do our best to cure them, and not until we had exhausted every resource would we consign them to the flames. One colony would scarcely pay to bother with, to say nothing of the danger of having it spread to other colonies; but fifty or sixty stocks are worth something, and a man could scarcely spend his time to better advantage than doctoring them. We consider the disease curable. Have never seen a case, but know that many of our friends have been troubled with it in their apiaries and have cured it.

2. Having never had a case, nor seen one, we do not feel competent to describe the disease. Will some one of the INSTRUCTOR's numerous readers who is familiar with it, give a concise description

for the benefit of our friend?

3. Could not say, but think I have heard that it is very troublesome in some of the old countries, and believe something was said about it in a back number of one of the bee journals, but can not just now run across it.

4. No sir, we do not, and from the fact that it is much more malignant in hot climates, we infer that extreme cold winters rather check it by destroying the germs.

Principal Honey Plants.

What are the principle sources from which honey is obtained in Michigan, the amount usually obtained per colony, price, etc? J. D. C. Salem, O.

I have prepared below a list of our principal honey plants and trees, giving date of blooming of each. We name only those considered of value. Those of special value are in small capitals and the next best in Italics:

Last of April—*Willows*.

" " —Soft Maple.

May—*Sugar Maple*.

" —Dandelion.

" —*Fruit trees*.

June—*WHITE CLOVER*.

" —Catnip.

" —*Motherwort*.

" —Whitewood.

" —*RASPBERRY*.

" —*ALSIKE CLOVER*.

" —Borage.

" —Sumac.

" —Blackberry.

" —Mustard.

July—*BASSWOOD*.

" —*MELILOT*.

" —*Boneset*.

August—*Buckwheat*.

" —Snapdragon.

" —Corn.

" —Pumpkin, etc.

Aug. and Sept.—*GOLDENROD*.

September—*Asters*.

" —Spanish needle.

" —*Fire weed*.

" —Marsh pennyroyal.

" —Red clover.

" —Sunflower, etc.

I have of course not named all that are of importance, but only those that seem to do well the whole State over.

The amount varies from 20 to over 100 lbs. I had about 100 in '81 and '82, and expect 125 lbs. per colony this season.

Price varies as to locality. I am selling very fast here at home for 15c. for comb and 12c. for light extracted. I extract but very little.

Editor's Corner.

Bee and Honey Exhibits at Fairs.

One of the most encouraging signs of the spread and growth of bee-keeping is to be found in the fact that nearly all the great fair associations of the country now include in their catalogues more or less liberal premiums on bees and their products, and the fixtures necessary to their successful management, where a few years ago such a thing would have been unthought of. The Michigan State Fair offers this year \$115 in premiums on bee-keepers' exhibits, the Ohio and Indiana State Fairs likewise offer liberal premiums on apiarian exhibits, and concerning the Great St. Louis Fair, to be held in October, Messrs. R. C. Greer & Co., the well-known commission merchants of St. Louis, who for a long time have furnished us our monthly quotations of honey and beeswax from that city, write us as follows under date of August 29:

Bee-keeping has become such an important factor among our industries that our fair association has seen fit to offer premiums for bees and all their products, at our coming fair, which opens Oct. 2d. As the circumstance may be of interest and value to some of your many readers, we mail you a catalogue giving full details of premiums offered, and call your special attention to the premiums on bees and their products, and the various appliances of the apiary, found in Class "E," Department of Jellies, Butters, etc. While not large they certainly give proof of a commendable effort on the part of our fair association to further bee culture. The premiums offered are as follows:

- Best display of Italian bees, \$20.
- Best display of native black bees, \$20.
- Best imported queen, \$10.
- Best display of comb honey, 25 pounds, diploma and \$20.
- Best crate of honey in comb, large silver medal and diploma.
- Best display of apiarian implements, diploma and \$10.
- Best bee hive for all purposes, diploma.
- Best honey extractor, diploma.
- Best wax extractor, diploma.
- Best bee smoker, diploma.
- Best honey knife, diploma.
- Best bee veil or face protector, diploma.

Best crate of honey in comb, large silver medal.

We hope the bee-keepers of Missouri and adjacent States will see to it that a liberal number of entries are made for these premiums, for if they take an interest in the exhibit this year, and make it a success, undoubtedly the managers will offer more premiums and a greater variety another year. Our word for it, the managers of fairs will in nine cases out of ten be ready to do their part if only properly supported by those most interested—the bee-keepers.

Test of Foundation Machines.

The following circular has been issued by Prof. Cook, President of the North American Bee-Keepers' Society:

To the manufacturers of Foundation machines:

Many have expressed a desire that all of the foundation machines of the country may be at the National Convention, and that foundation may be made so that all may see how they work. While visiting that Goliath of American bee-keepers, D. A. Jones, of Beeton, Canada, last week, he showed us how beautifully the Dunham machine worked, and the fine foundation that it would produce, and said that if Mr. Heddon could do better with the plates, he wished to see it done at the National Convention. I could not help uttering a vehement amen. I remarked that we should also wish to see the one who has done so much for foundation, and foundation machines, A. I. Root, there, with his roller machine, and with the great praise that has been given to the Vandervort foundation, which, as we all know that have used it, is well earned, we want as much to see that machine work. Now, I wish to suggest that Mr. A. I. Root bring a cistern and wax reservoir, that C. F. Muth furnish wax, and that every manufacturer bring his machine, and we all see them tried. We all know that Messrs. Muth and Root, so full of generous purposes are they, will not refuse to do as suggested above. Such an exhibition would be not only very interesting, but would prove a wonderful educator. I hope that all of you, Mrs. Dunham and Messrs. Vandervort, Given, and Root, will at once express a willingness to comply with the above request, which is the wish of a host of bee-

keepers that intend to be at Cincinnati. Lansing, Mich., Sept. 7, 1882.

The suggestion is a good one, and if carried out would no doubt prove one of the most interesting and instructive features of the convention to many, and would afford a splendid opportunity of testing the comparative merits of the different machines. There has been much discussion through the various bee journals as to the comparative merits of the different makes of foundation, and a test like the one proposed, where everyone would meet on equal ground—the foundation all made at the same time, under the same conditions, and out of the same quality of wax—would be one of the best possible means of settling this vexed question. We hope the proposition will meet with the favor of those to whom it is addressed, and that the gentlemen named can make it convenient for them to be present, as suggested. Should the test be made we predict that Mr. Heddon will carry off the honors of the day.

With the October issues of *The Century Magazine* and *St. Nicholas*, these magazines closed the first year of their existence under the present management. To show that the people fully appreciate these sterling publications, it is only necessary to state that their circulation has been steadily increasing month by month, the editions for the present year averaging many thousand copies more per month than the corresponding editions of last year. In literary and artistic excellence they may be truthfully said to have no superiors, and few, if any, equals. The illustrations are beautiful specimens of the engraver's art, and in all respects they may be said to be model publications of their kind. The Century Co., Publishers, Union Square, New York.

Owing to a breakage in our press, compelling us to send to the foundry at Cincinnati and get a piece duplicated, this issue of the INSTRUCTOR is two weeks later than it would otherwise have been.

Preparation for Winter.

Now is the time for bee-keepers to "take time by the forelock" by making preparations for winter. In many sections there has been but little, if any, surplus honey made, and in some localities bees have not much more than gathered enough to keep them from one month to another. In all such cases feeding should be done early, so that the syrup may be sealed over before the weather gets cold and unfavorable. The first thing to do will be to make all colonies strong by doubling or uniting them, so that the number to be fed may be put down to the minimum point, remembering that a strong colony when it comes to feeding will have every advantage over a weak one. It will fill up more rapidly, and from the greater amount of heat the colony generates, the syrup will be evaporated and sealed over in a much shorter space of time than in a weak colony. This is of great importance, as only sealed stores can be relied upon as healthy food for wintering bees.

The next thing to attend to after the colonies are all fed up is to prepare for winter. And here again the strong colonies, with proper ventilation, have greatly the advantage. We should always bear in mind that the stronger the colony the more ventilation is necessary, and *vice versa*. In northern latitudes, where the thermometer sometimes runs down twenty or thirty degrees below zero, bees will probably do best in the cellar; but in milder latitudes we prefer wintering on summer stands. In all cases where hard freezing weather is expected, they should be well protected in some way, so that they may not be disastrously affected by sudden changes in the weather.

Bees should be kept breeding up to the middle of October, that there may be plenty of young bees to go into winter quarters. This can be done by slow feeding, giving them a little each day until they have a sufficient amount of brood under way. When you begin to feed to fill up for winter, let the bees

have the syrup as rapidly as they will take it, so that the combs may be filled and sealed over in as short a space of time as possible.

Strong colonies with plenty of ventilation can withstand the coldest weather, provided it is not too protracted. Act upon the injunction so often given by our leading apiarists, and "keep none but strong colonies."

This Year's Crop.—It is most too early to get accurate reports of the season's operations, but so far as they have come to hand the majority of them are by no means encouraging. In some portions of Tennessee, Kentucky and Ohio, the honey crop is almost an entire failure, though in northern Ohio the yield is a fair one. In some portions of the west, to counterbalance this, the yield has been an unusually good one, so that taking the whole country over the crop is probably an average one. We hear of some having large apiaries, in the localities first named, who will have to double them up to one-half their present number, and then have to feed many colonies for winter. In this way they will go into winter quarters in good condition, but without having realized anything for their owners during the season.

We are satisfied that there is only here and there a location where bee-keeping can be made uniformly profitable without planting for honey, and think this is becoming the settled conviction of beekeepers generally. The great problem now to be solved is to select and classify the best honey-producing plants, so that each may be cultivated and depended on in its proper season. We give an article in this issue on "Alsike Clover," by L. C. Root, which will be found interesting reading to those desiring to plant for honey. It was written for us in the spring, but received too late to be of benefit to those wishing to plant then. We had not intended to publish it until next spring, when it would be timely, but as this is our last issue we give it now.

In response to our inquiry of last month in regard to a phrase used by R. C. Greer & Co. in their market report, they write as follows:

Wax for "feeding purposes" is a term usually applied in our market to the demand by engineers for their machinery. It is probably too little known to apply in a market report.

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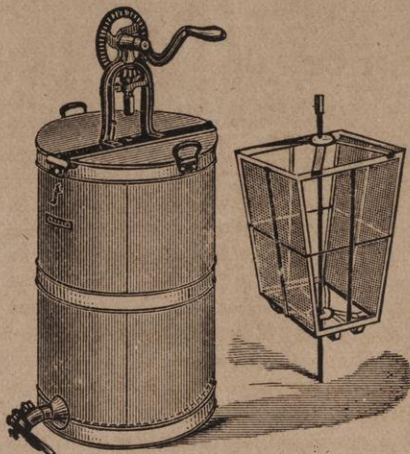
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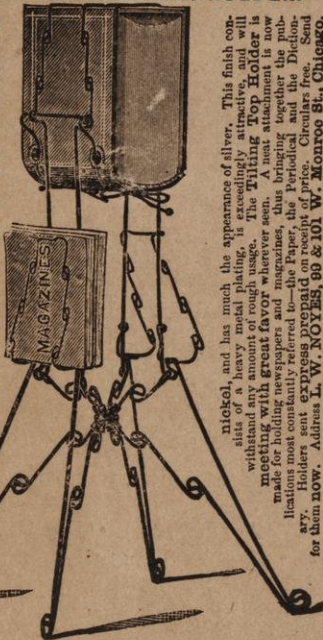
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