THE * AMERICAN * APICULTURIST.

A JOURNAL FOR THE NOVICE AND EXPERT IN BEEKEEPING.

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HENRY ALLEY, - - - EDITOR.

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The Editor's Department.

A happy new year to all our subscribers.

How do you like the appearance of this copy of the API?

Mr. Doolittle has sent us a long reply to our criticisms of his method of queen-rearing. It will appear in a later issue.

The programme of the International Bee-association was sent us by R. F. Holterman, but too late to be inserted in our December issue. This is why it did not appear.

We want about three thousand more names upon our subscription book than we now have. We can have them if each reader of the API will send in a new name with his own.

Wide top-bar frames.

It is with a good deal of satisfaction that we note the discussion now going on in *Gleanings* concerning wide top-bars for brood frames. For nearly thirty years we have urged beekeepers to discard the narrow top-bars and adopt the wide one. I am pleased to know that our time used in this line has not been wasted. The person who uses the narrow top-bar knows little of the value of a wide top-bar, or of the comforts of beekeeping.

The Paris Exhibition.

American beekeepers ought not to be censured for not making a better exhibit at the Paris Fair. It could not be done. In order to make a good display of goods, it is necessary for the exhibitor to attend in person or at least to have a competent and trusty person to take charge of and place his goods in position, and, above all, to have some one on the spot at all times during the exhibition to show the goods; explain what they are for, and how to use them.

There will be plenty of time in the year 1891 for American beekeepers to make preparations for the fair to be held here in 1892.

New subscriptions and renewals.

Though renewals are pouring in by every mail, there may be a few old subscribers who will forget to send in their subscription, and for that reason this issue of the API will be sent to all whose names were upon our book in 1889. We also want our old friends to see the improved make-up of the API. Now, friends, please don't forget that the API will cost you but 75 cents per year, and that we give more than the money's worth in any issue of our Journal. One old subscriber says of the December API, "Your suggestions regarding feeding bees, on page 179, are worth five years subscription to the API."

It is our intention to make each number of our paper better than the previous one.

The *Canadian Honey Producer* of which R. H. Holterman was editor went out of existence with the December (1889) issue. If many more of the bee-papers go off, those remaining will begin to feel lonesome. It is now nearly a year since anyone started, or even have threatened to start a bee journal.

The editor of the Honey Producer says:

"To the public generally we may say, that the *Canadian Honey Producer* is self-sustaining; and every prospect that its subscription list will in-

crease. Yet, as before stated, there are difficulties in the way which would not be easy to surmount. We trust no one will attempt to publish a new bee paper. There are enough good ones at the present day, and but little room for more."

We think the parting words of the editor of the C. H. P. should be about all that is required to discourage any one from starting another bee-paper. Though Brother Holterman does not advise any one not to do such a rash act as to attempt to start a bee publication, yet that is just what is meant.

One of the best authors upon bee culture, and also one of the best known beekeepers writes thus:

"I don't know why the API, which first started the query department should discontinue it."

If you look this issue of the API over you will see that the Query Department is all right again. It will also be seen that those persons' names usually found at the end of the replies to queries in other bee publications are not found in our department. We think that the parties who are now spending their time replying to queries for other papers are being worked full hard enough, and, though nearly every one of them would be glad to send replies for the API, we concluded it was best to get a new set of writers, considering the fact that competent persons can be found willing to spend their time in our service.

The API never did engage novices as teachers. We want only experienced beekeepers to reply to queries, and to furnish the leading articles for our columns.

Winter care of bees.

Under the above head we find an article in the *American Agriculturist* from which we take the following:

"The only resort, therefore, for feeding in cold weather, is to make candy and use it. This is a very good and healthful food if properly made and administered. It is made from granulated sugar by melting it, adding a little water—no more than will thoroughly melt the sugar—when it is boiled a few minutes and poured out into cakes or slates of three or four pounds each. When cool, this becomes very hard, almost like rock candy."

Yes, when cool the candy is more like a rock than anything else, and what is worse still, it is no better for bees than a rock. The above is a fair sample of the advice beekeepers get who read agricultural papers for information concerning bee culture.

Why put water with sugar and then boil it out? Why not put the dry sugar in the hive in the first place? Dry sugar is much the best if some way be provided so that the bees have access to water to aid in dissolving the hard grains of sugar.

We told you in the December API how to feed bees. Adopt that method and no rock-candy, dry sugar or water will be needed.

Comb foundations; patents on bee-fixtures.

Someone wrote the editor of "Gleanings" and asked this question: "Why not take close, smooth print cloth, or good cheese-cloth, or even the veiling or strong unsized paper, or else fine wire cloth, or any such material which upon trial may be found suitable and pass it through the melted wax the same as the wire cloth is passed through the melted metal to coat it . . and then run through the machine as the dipped sheets are?" Here is Editor Root's reply:—

"Friend C., you are wasting your time and brains in giving any further attention to cloth or other material as foundation as a base for making foundation. Everything you suggest has been invented again and again. Cheese-cloth or any other kind of cloth will eventually be torn out by the bees. They seem to regard it as some indication that the moth worms are at work. Paper has been used to some extent, but it is open to the same objection. Very fine light wire cloth will do, but it spoils your rolls, and makes your foundation unnecessarily heavy. You can not incorporate anything of the sort without using a great deal more wax than you use with the ordinary wired frames. No doubt you could get a patent, and very likely it would be worth fully as much as the patents we have already on bee-hives and their fixtures—just nothing at all."

Chestnuts, Brother Root. What would the beekeepers of the present day be doing about this time had it not been for a patented bee-hive? If my memory serves me correctly, the best foundation mill in use was patented. Wasn't it, Brother Root?

Charles Lake, an enterprising beekeeper of Baltimore, Md., sent to us in 1888 several pounds of foundation which had for a base some kind of cloth or heavy paper. We cannot say just what the material was. However, it came to hand too late that year to be tested. In June last a set of frames were filled with this foundation and a colony of bees placed in the hive. At the proper time the combs were examined and the bees had worked out the foundation nicely and not a particle of it was removed.

One swallow does not make a summer, and this one case which we tested may not be a good test. While Brother Root is generally correct in his statements, I do not feel like accepting them when my experience in the same direction is exactly opposite to that of Mr. Root's.

Speaking of Brother Root's opposition to patents; there is one thing to be said in his favor. Brother Root does not, we think, object to using and paying all that a patent having real merit is worth. We believe he has done the fair thing in all cases. But what is meant in these words, "Patents amount to nothing at all?" No doubt Brother Root means that no one can get any, or at least much money out of patents on bee supplies. Ask Brother Heddon if he has not done well on his patent hive. As a rule there is not much money in patents. However, we have just applied for a patent for one of the most valuable articles yet introduced to the beekeeping public. It is the long-sought-for article. Well, if we are successful in obtaining a patent, we do not propose to bother the beekeeping public with patent rights, any more than we did with the patent on our drone-and-queen trap.

Correspondence.

Apicultural Notes and Comments.

DR. TINKER.

The best section for comb honey, if we may judge by the first premiums awarded at the Buffalo and Detroit International Fairs, is the open side section, Mr. M. J. Bundy of Angola, N. Y., being the exhibitor. It seems that bees will fill out no other style of section so plump and perfect as the open side.

Bees often attach the combs in sections to the adjoining separators. In some seasons and often where the bees get crowded for surplus room, a large per cent of the combs will be so attached causing no small loss to the beekeeper, as broken and dripping combs do not sell well. The cause of the bees thus attaching the combs is usually due to the use of a separator of less width than the section is high. If the top and bottom bars of the sections are made one-half inch less in width than the sides and the separators are made as wide as the section is high, the bees never attach the combs to either wood or metal separators, if the starters are properly fastened. Quite a number of noted producers of honey are arranging to profit by this fact the coming season.

Wood separators are preferred to metal ones. They cost less and if well sawed will last many years. Comb honey obtained where wood separators are used will be found whiter than where metal separators are used. In the one case, the bees travel freely over the wood in passing back and forth to the brood-comb; in the other, they prefer to travel over the combs rather than the smooth surface of the metal.

Mailing bees by the pound is still defended by Mr. Doolittle. See *A. B. J.* for November 16. Mr. Root in *Gleanings* for December 1, concedes that it would be desirable, if it could be safely done, but adds "that no kind of cage can be made stout enough and still light enough, to make it safe to risk by mail." Mr. Doolittle, as the author of a book on queen rearing, can ill afford to endanger the traffic in queen bees through the mails by even broaching the subject of mailing bees by the pound.

"A Hallamshire beekeeper" claims that bees "will truly hybernate" if properly prepared for winter. (See C. B. J. for November 27.) That bees under favorable conditions do hibernate in winter, is quite universally held at this tims, notwithstanding the objection of some of our scientists. The Rev. W. S. Clark has left a heritage of ideas on this subject that will survive him.

The width and thickness of top-bars of brood-frames and their relation as affecting the building or the prevention of building burr-combs, is one of the live topics presented in *Gleanings* at this time. Mr. Alley has been advocating for some time the use of thick top-bars to prevent the building of burr-combs. One thing is certain, top-bars should be made heavy enough so they will not sag and be not less than one inch wide. It appears that top-bars $\frac{1}{4}$ inch wide or one inch deep will largely prevent the building of combs in the bee-spaces; while lessening the width to $\frac{7}{8}$ wide or the thickness $\frac{1}{4}$ inch is favorable to such building. It may be predicted that cheap brood-frames of the latter description will go out of use.

The building of burr-combs may be largely prevented by this management. Placing a set of empty combs either in brood-frames or sections over a colony before they begin building new comb is a preventive. So, too, the hiving of two or more swarms together in a brood-chamber of moderate capacity with a wood-zinc honey-board

having direct passage ways and two or more section cases in which the bees have begun work, is a preventive. Under these circumstances we often find not a single burr-comb anywhere, but care is required that the bees do not get crowded for room. Any large swarm capable of occupying both the brood-chamber and surplus case at once will not build burr-combs but if all the comb building is confined to the brood-chamber at first burr-combs are sure to be built before the bees will enter the super.

Those who winter bees in chaff hives will find great benefit from taking off the covers on clear days and letting the packing dry out and get the air. This may be done once a week where the weather will permit. If the bees are able to take a flight, the packing over the brood-nest should be removed. The effect of the sun shining on the covering of the brood-nest is highly invigorating to the bees.

New Philadelphia, Ohio, Dec. 5, 1889.

Wooden combs.

DR. C. C. MILLER.

I am not very sanguine about the success of Mr. Aspinwall's wooden combs, but I think Brother Pratt will take it good-naturedly if I suggest that he is a little hasty in his denunciation. Whatever may be the final outcome, I believe that Mr. Aspinwall has made an honest and a very painstaking effort to get up what may yet prove to be a good thing. Whether the cost may not be prohibitory if it should prove otherwise successful, remains to be seen. But there is at least a small number of beekeepers who would endure considerable expense for the sake of having a hive in which a colony of bees would work on continuously without ever swarming. Mr. Pratt says "drones can be reared in worker cells." Yes, I have seen plenty of them raised in worker cells, and I have also seen workers raised in drone cells, but I do not know that I have ever known drones to be raised in worker cells with a good prolific queen in the hive. Drone eggs are usually laid in worker cells by laying workers or by an unimpregnated queen and in such cases a swarm will hardly issue. A queen, on first commencing to lay, may deposit a few drone eggs, and on becoming very old may become a drone layer, but swarms are not likely to issue in such cases. Brother Pratt says, "The reluctance on the queen's part to lay profusely in wooden combs might depopulate the colony." How much reluctance is there?

Mr. Aspinwall frankly says that bees prefer to use combs of their own building for brood-rearing, and I suspect that is all Brother Pratt knows about the reluctance. But bees prefer old black combs to new ones, and yet that does not prevent the queen from laying profusely in new, white combs if she cannot have the kind she prefers.

Admitting, however, that Mr. Pratt has offered no valid objection, the important question yet remains, Will no swarm ever issue from a droneless colony? Can Brother Alley or any other of the veterans tell us anything about this? If we should find out that drones are not necessary for swarming, then I can hardly see any great value in wooden combs for any one.

Clipping queens' wings.

While I have the ear of Brother Pratt, will he allow me to ask why he thinks "the clipping of queens' wings a cruel and inhuman practice." I have clipped hundreds of them and I never thought of there being anything cruel or inhuman about it any more than there is in trimming one's finger nails. If I understand the matter rightly, there is no more feeling in a queen's wings than in my finger nails, and I

always supposed that the operation of clipping the wings was an utterly painless one.

Low prices.

Brother Alley is opposed to the talk about low-priced queens. I do not think there's any great danger. I am a queen buyer not a seller, and while I like to get things for a small amount of money, I cannot afford to buy the cheaper of two queens, as a general rule. If I have good queens and yet by buying a new and better queen I can raise the average yield of each colony as much as one pound of honey, I can afford to pay what might seem to be an exorbitant price for such a queen. No matter how low prices may be, there will always be a good market for the best at paying prices.

Marengo, Ill.

The Progress of Queen-rearing.

E. L. PRATT.

Almost every beekeeper will rear a few queens next season. In fact, the number interested in this vital branch of apiculture swells every year. Beekeepers are beginning to realize the value of good queens as never before.

The first thing to be considered before going to work is what method shall be used for rearing these queens. We should bear in mind that this is a progressive age, and methods that were considered the best last season are really the worst this—therefore the need of constant study and the interchanging of ideas.

Above all things don't use the old methods of taking away the queen from a full colony, and thus cruelize the poor bees. A queenless colony of bees is the most expensive piece of property a beekeeper can have in his yard.

Perforated zinc has opened our eyes to interesting facts. This wonderful metal has not been fully utilized in connection with queen-rearing as yet. By its use, even during the latter part of the past season wonderful developments were brought to light. Several months ago I made the remark in print that the proper use of queen-excluding metal would revolutionize the queen-rearing industry, and to-day it is coming true.

I would no more think of going back to the dequeening methods than I would to the old, old, nucleus plans way back in the lamented Quinby time. Just think of a bit of zinc two or more inches square, reducing the expense of a batch of twelve to fifteen queen cells, to almost nothing. Don't use old fashioned methods! Don't!

Marlboro, Mass.

Foreign Notes.

CONDUCTED BY L. STACHELHAUSEN.

Artificial heat for bees in winter.

Much attention is given at present in Germany to some experiments with artificial heat for wintering and springing bees. Rev. C. Weygandt, a well known beekeeper in Germany, used a natron-carbon stove in his house-apiary with good results in the winter of 1888–89. He made fire on every day during the winter, when the bees could fly (heating to 25°–35° F.). Beginning in the middle of March or April the bees are warmed 10° F. at day time, 20° F. at night. It is necessary to have the air always dry, and warm, as wet air is death to the bees. The results were very good, and Rev. C. Weigandt hopes for a revolution of beekeeping by his experiments.

In "Deutsche illustrierte Bienen-Zeitung" is an article from Prof. P. T. Colliander in Helsingfors (Finnland) concerning the same matter. He warmed his colonies separately by a bottom-board of peculiar construction. It is merely a box-trough, to which

is fastened a pipe of oval shape. This is surrounded by sawdust, where the heat is accumulated, and by fine gravel, where the heat will be quickly given off. This pipe from time to time is filled with hot water. The Professor says the results were very good; his colonies got strong, while snow covered the fields.

Ancient history of the bees.

In "Deutsche Finker aus Boehmen" Mr. Tony Kellen publishes an article, "The bee in the literature of the world." He quotes from about two hundred writers in about twenty different languages. The first part is from ancient India, and we see that in India the bee was well known and valued 1500 or 1300 years before Christ.

Why some bees are cross.

Mr. Warnken says, in "Bienenzeitung," he had observed that bees, suddenly transferred to a quite different climate and honey resources, are sometimes crosser. Bees of a foreign race, raised in their own country, are more gentle than imported ones. This may in some degree explain why some bee-keepers do not find the Carniolan bees as gentle as do others.

Selma, Texas.

Queen-breeder's Department.

CONDUCTED BY E. L. PRATT.

Salutatory.

In taking charge of this department I shall endeavor to give to the readers of the AMERICAN APICULTURIST my best thoughts on the special branch assigned me.

To me queen-rearing is the most interesting branch of apiculture, as it brings one so close to the wonderful workings of nature.

There are thousands of interesting facts connected with queen-rearing that have never been made generally public. Among the things yet unlearned there is a storehouse that is inexhaustible.

In order to make anything of this kind a success, interest must be taken; and therefore I ask all the readers to "lend a hand," and together we will "duff in," and try to learn something about the *very foundation of the whole bee industry*, her majesty the queen.

Brief notes.

Guard against chance matings of young queens.

Never misrepresent your goods for the gain there is in it.

Treat all customers alike, as you would be treated yourself.

To my mind cross-mating for a higher standard is a fizzle.

A careful breeder will always succeed. A careless man never will.

I think the black bee, or native, as it is often called, is a deteriorated race.

Testing in the near future will mean for quality alone. Purity will be understood.

Black queens mated to Italian drones are very gentle, but what more can we say of them?

Perforated zinc bids fair to be of more value to the queen-breeder than to the honey-producer.

If you find a colony that does not succeed in earning a living, that is where superseding should commence.

It requires eternal vigilance to keep any race or strain of bees pure. Purity ranks next to honey-gathering quality.

A convenient record book can be bought for a nickel. If carried in your pocket, it is always convenient for reference.

Be ever on the watch for something new. Try to trace cause and effect to the very root. With bees this is an arduous task.

Ill disposition in bees is needless when gentle stock can be had for the same money. Stings do not gather honey, by any means.

Always welcome visitors to your yard. Give them the benefit of your discoveries, for it may help to further the interest of apiculture.

I believe that untested queens will be among things of the past very soon. Even now, many breeders are guaranteeing purely mated queens.

I am now testing a new winter feeder that will admit the use of liquid food during midwinter; shall report later on the success of the implement.

What a wonderful hardy race of bees the Carniolans are. Just think of shipping them by mail in November and December as far north as New Hampshire and New York.

Fill the orders promptly or offer to return the money. If a proper explanation of your difficulty is not taken in good part put the man down as a "chronic kicker" with whom you cannot afford to deal.

Unpleasant weather is the most discouraging thing a queen-breeder has to bear.

What folly to suppose that weather can be "custom made." Purchasers of queens should be reasonably patient during inclement weather.

I shall use my new electric attachment to nuclei hives for the first time during the season of 1890. This appliance will open any number of entrances automatically at any minute of the day desired; shall endeavor to fully illustrate and explain this apparatus to the readers of the API.

If worker bees have the power to change the common larva from an imperfect female to a perfect one, why do they not to a certain extent influence all larva fed by them in their good or bad traits, as the case may be? After reading that excellent production of Mr. R. A. Grimshaw, as read at the British convention, I am rather inclined to take a little stock in the theory.

Marlboro, Mass.

Siftings in Bee Culture.

CONDUCTED BY M. A. KELLEY.

Periodicals for review, exchanges and correspondence intended for this department should be addressed to

M. A. KELLEY,
Milton, W. Va.

Hutchinson's "baby" is the most robust and sprightly youngster in all bee-journaldom.

Mailing bees by the pound is one of the latest "bones of contention." Do not "monkey with the buzz-saw."

Mr. Doolittle's remedy for stings: groan and bear it. Mine: spit on it; keep it wet with saliva for a little while.

The standing frame seems to be gaining in favor at the expense of what some one has called the "rattle box hive."

Barrel staves nailed on two short pieces make good shade boards. I have been using them for years and find them neat, cheap and handy.

The value of apicultural facts should be determined by their usefulness. A fact may be useful even if "known years ago" or "found in our back numbers."

A "section" out of a mower sickle is a handy thing to have in the apiary. It will answer at times as a scraper

and is real good to pry the frames loose with. Try one.

Have house-apiaries been a success with any of our readers? If so, let some who have had experience tell in some bee paper just how they should be built and managed.

I would as soon be stung by a bee as be "bored" by an individual who wants to talk bees, and only knows that they "make honey" and have a terrible sting.—Mrs. L. Hamson, in *Prairie Farmer*.

Dr. C. C. Miller, in *Gleanings*, tells us how to make what he calls a "robber-cloth." It is simply a square of cotton cloth with strips of wood nailed on two sides. It is cheap, simple and useful.

Mr. James Heddon, in the *Review*, says: "It would be much more appropriate to call the apiarist a manufacturer than to call him a producer." Beware of the word "manufacturer," James, it is "loaded."

Mr. H. H. Knapp, in *Gleanings*, advocates frames $1\frac{3}{8}$ inches from centre to centre. Mr. Z. T. Hawk is on that side too, and the reasons usually given for any greater width seem to me to be inconclusive.

The *American Bee Journal* has gone "gunning" after the Chicago *Herald*,— a "wily sort of a paper,— for a misstatement about comb honey.

Mr. Newman is ever alert to find and fight the foes of the beekeeper.

No part of our pages will be given to receipts for poisoning bees, nor to agricultural pursuits.—Apiculturist.

Very good, Mr. Alley, very good. A bee-paper should be devoted to bee-keeping and not to agriculture, religion or politics.

I have never yet had a season that I could fill all my orders.—C. H. Dibbern, in *American Bee Journal*.

There is some "business" in the way Mr. Dibbern handles the honey trade. You shiftless one, "go thou and do likewise!"

We all know that Albino bees, as sold in the market, are simply a light variety of the Italian race.—Prof. A. J. Cook, in *Gleanings*.

This, coming from such high authority, is rough on the "boomers" of the so-called Albinos.

Mr. John Craycraft, in *American Bee Journal* advocates sending colonies of bees in cages from the north to the south to be wintered and returned north in time for white clover bloom.

This may be done, but there are some drawbacks. It is an idea that should be remembered.

Judge H. H. Andrews says in *American Bee Journal:* "Ninety-five per cent of all the bees in North America, kept by professionals and their neighbors, are just mongrels." What think you of this, ye queen-breeder?—*Beehive*.

Think? Why, that the Judge was mistaken. "Only this and nothing more."

Mr. H. R. Boardman tells, in *Gleanings*, how he "skinned" the ground by removing the sod in his apiary and then calls it "a model bee yard." Why he wants bare ground to keep bees on is a query. The splattering of the hives with dirt by the rain, the mud and the result to floors and carpets should be enough to condemn this plan.

Milton, West Virginia.

THIRTY YEARS AMONG THE BEES.

BY HENRY ALLEY.

QUEEN-REARING.

[*Continued from page* 177, *Vol.* VII.]

Methods for rearing drones during the warm months.

Rearing drones in the spring.

The queen-breeder must have drones in his apiary as early as the 10th of May. If a colony of bees is left to act its pleasure in the matter of rearing drones, the queen-breeder would often find himself in a bad fix, as very few colonies would rear drones as early as they are needed to mate the first queens reared by artificial methods. Then again the colony from which it is desirable to rear the drones might not have any drone brood-comb near the centre of the brood-nest or may not be strong enough in numbers to rear drones. In a case like this, no drones would be reared until quite late in the season, especially if the drone-comb is on the outer frames. I have sometimes found that at the beginning of the honey season quite a small colony would pass over a comb containing no brood and no drone-comb, in order to reach some drone-cells for the purpose of rearing drones. Many colonies will not start drone-brood until stimulated to do so by the early blossoms and flowers. That will not do for the queen-breeder. He must have drones at the time the first flow of nectar comes.

A method for getting early drones.

The colonies from which the drones are to be reared should be selected the previous season. As there is more or less loss of bees in winter, several colonies should be selected so that in case one colony dies, there will be others in the apiary to fall back upon for drones.

We always have had good success in getting drones early in the season by this method: One of the outside combs is removed, and the other combs as far as the centre of the brood-nest are removed to the side of the hive, and then a frame of nice, clean drone-comb is placed directly in the centre of the brood-nest. A syrup composed of at least one-half honey, is then given the bees each day until the drone-brood is capped. Usually the supply of syrup is kept up until the flowers yield some honey as it is not safe to discontinue feeding until the bees can gather natural forage.

Feeding bees to induce drone-rearing. Some of the discouraging features of beekeeping.

I have found it was not safe to discontinue feeding syrup for even one day. How often have I been disappointed and disgusted as well, on opening a hive to find that a nice lot of drone-brood had been destroyed I had spent my time in feeding and nursing a colony in order to encourage the bees to rear. Those who keep bees, and more especially those who rear queens, are often disappointed; in fact, disappointment with the latter class is in order all the time. On some occasions I have been so discouraged and disappointed I have have declared I would never attempt to rear another queen-bee. A few days of unfavorable weather will often upset the plans and labor of several weeks.

Many times during the first month of queen-rearing, and about the time the first queens should emerge from the cells, a long, cold rain storm has set in, lasting from a week to ten days. The temperature would be so low that every bee that left the hive would chill and neve

return. What can be done under the circumstances? Why, every hive in which queen-cells are being built must be removed to a warm room, as it is impossible to do any work in the open air when it is cold. Though it may seem to the inexperienced beekeeper that nothing can go wrong in the apiary of an old beekeeper, yet the case is just the opposite. It is seldom that anything goes to suit the breeder of queens on a large scale. A little bad spell of weather, when no queens can mate, will bring hundreds of letters, and though only a few customers will really complain, yet it is annoying and vexatious in the extreme to be obliged to reply to those mild complaints and say that the weather has been so unfavorable for bees that we have no queens to send. This is just what happens nearly every year.

The first discouraging feature which presents itself to the queen-rearer is met at the start. If a watchful eye is not kept upon the drone-rearing colony, all the early drone-brood will be destroyed. Unless the season is a forward one and the colonies very strong, it is not a good plan to form a queenless nucleus colony so early in the season as the 10th of May, to preserve the drone-brood. I rather leave it in the full colony and feed liberally to encourage the bees to nurse and preserve the drone-brood.

Rearing and preserving drones in the months of July, Aug., Sept. and Oct.

During the month of June, or at any time when bees are gathering honey, there is no special need of doing anything to encourage a colony to rear drones as the bees will take care of that business themselves. However, just before the harvest closes, I have made it a practice to get as many combs filled with drone-brood as I had drone-comb to use. In this way I secure thousands of drones without much effort or trouble. The empty drone-combs are inserted in the drone-rearing colonies, and as they are filled with unsealed brood, the combs are removed to queenless colonies.

Sometimes a queen may be found that seems to take pleasure in depositing all the drone eggs that she can find the proper drone cells to drop the eggs into.

When I find a queen of this kind I usually work her to her full capacity in the line for which she seems to have a special gift. As she fills a comb with drone eggs it is removed to the queenless colony or to one rearing queens, and another comb is inserted in its place.

Rearing drones from young queens.

It is said that young queens will not deposit drone eggs the first year. This is not true in any case unless the queen was reared very late in the season; even then, I think by feeding, I could make a queen deposit more or less drone eggs before she is thirty days old.

Now in case any queen-breeder gets hard pushed for drones, or pinched for a suitable queen from which to rear drones, he can by adopting the following method get a good supply of drones from a young queen. I have practised the plan successfully for nearly thirty years.

In order to be successful with this method there must be in the apiary a strong colony of queenless bees. The next move is to take all the bees from a colony having a fertile queen and in good condition in all respects. After the bees and queen have been disposed of, the next thing to do is to place the queenless bees on the combs of brood, and at the same time introduce a smart, young, fertile queen; if you please, one that has never laid 1000 eggs.

One of the combs should be removed from the middle of the brood-nest and a comb having more or less drone-comb should be inserted in its place. Three days later examine the drone-comb and see if the cells do not contain eggs. They certainly will; that has been my experienced.

Do the bees or queen decide what eggs shall be laid?

To me the above illustrates the fact that the bees and not the queen, de-

cides what eggs the queen shall deposit. When the bees see the need of drones, they at once clean up the drone cells, the queen takes the hint and drops an egg in each cell. The queen seems not to know the necessities of the colony, but does the bidding of her subjects.

In proof of this theory, I will give another fact illustrating and corroborating my opinion. Years ago when there were observatory hives in my apiary, I used to study the habits of the bees a good deal more than I do nowadays. I have more than once seen the bees pass over a frame of dry worker-comb in order to reach a comb containing some drone-cells, which was at the side of the brood-chamber. This seldom happens except at the last of May, or early in the month of June, and usually on the first flow of honey from the fruit bloom.

Queenless bees are in condition to rear drones when eggs or brood is furnished them. If a queen, young or old, is introduced to such a colony the desire for drones is not satisfied for several days after a queen has been given to them.

This is the reason why queenless bees will so readily rear drones even when a young queen is present in the hive.

Should an attempt be made to rear drones from a young queen after she had been installed in the colony a week or more, it would most likely result in failure.

The bees would say we do not now need any drones; we have a nice young ruler and we need no males till another year.

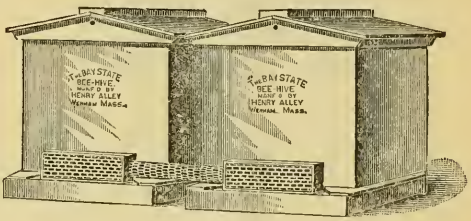
I have found that it requires as much science to rear drones and have them just when wanted, as it does to rear first-class queens.

(*To be continued.*)

The Swarm-hiver.

We herewith give a description of a new device for hiving bees, or rather, a device that works automatically and causes a swarm of bees when they issue to hive themselves.

The swarmer, as here represented, is in connection with two Bay State bee-hives. By removing the upper chamber from two of the drone traps and placing them on two hives, connecting the two traps with a tube, you have the arrangement nearly complete. The cone-tube which is placed in the upper chamber of the trap should be placed at the end of the swarmer and in the tube which connects the two traps. This prevents the queen when a swarm issues from returning to the home hive. After the queen once enters the tube she will pass to the new hive; when the bees miss their queen they will readily return and have no trouble in finding her located in the new home and all will at



once join her. Even should a majority of the bees return to the home hive before they discover that their queen had taken up new quarters, they would soon find her whereabouts, and join her.

Set the swarmer on the hives and go to town, or to meeting and in the meantime should a swarm issue they would be found in their new home and at work putting their house in order.

This arrangement can be applied equally as well to one hive as another. As a drone-and-queen trap it will work as satisfactorily as the drone-trap.

We will mail the swarmer, with directions for use, on receipt of one dollar.

We have applied for a patent and believe one will be granted.

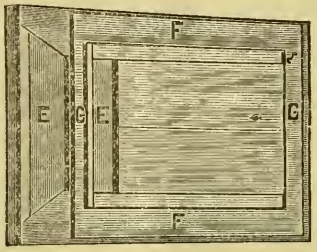
Packing bees for shipment.

We have read lately several articles from the pens of expert beekeepers

detailing the manner of packing bees for shipment, and giving the number of minutes required to pack a colony in the hives these parties had in use.

We are inclined to think we can beat the record of the best of them with the Bay State hive.

The Bay State hive has a standing closed-end frame. Of course this frame never needs any nailing to keep it in place. The bottom-board, of which a good illustration is here given, is so arranged that there is always a



good ventilation under the frames. A rim *FF*, *CC*, $\frac{3}{8}$ of an inch thick, is nailed to the upper side of the bottom-board. The frames rest upon these strips. It will be noticed that the entrance *EE*, to hive is sunk below the centre of the bottom-board, and the bees in entering the hives pass under the strip *C*. The strips nailed to the top side of the bottom-board not only keep the frames at a proper distance above the bottom-board, but hold the outer case of the hive in place. These strips keep out the water, and as the entrance is below the level of the bottom of the hive no water can enter.

Now about packing a colony of bees for shipment in one of these hives. Nail one of the wire-cloth honey-boards (described in the December Api) over the frames, close the entrance with a screen and after nailing some strips to the sides of the hive to keep the bottom-board and the outer case together, the job is done. Should say that it would require about five minutes time to pack the hive to go safely one thousand miles.

Every mail brings letters requesting us to describe the Bay State hive in the Api. A good description will be given in the February number. Several cuts will be shown describing the hive.

Reversing brood-combs.

J. W. Tefft.

Friend Alley: In the last very interesting Api, page 185, in your reply to Henry Harker, you remark, "that reversing the brood-combs for any other reason than to get the combs fastened to all sides of the frame, or for the purpose of destroying queen-cells at swarming time, is not of any practical value to the beekeeper." Pardon me if I bring to your notice some things that I have practised for the past ten years, and find them of immense value.

By reversing the brood-combs containing two-thirds of brood and one-third or more of honey; by uncapping the honey during the honey harvest, the honey is carried above and the queen will utilize the cells for brood as fast as the bees remove the honey. The advantage is: First, more room for brood without inserting another frame; second, I get full frames of solid brood without an ounce of honey in them: third, I get full frames of honey above without a cell of brood in them; fourth, it upsets the swarming fever during the honey season; fifth, it takes a less number by one-half of beehives. *Collamer, N. Y.*

1. I do not think the bees would remove the stores to the combs above should the honey in the brood combs be uncapped during the honey harvest. Should the colony wake up some fine morning and find a lot of empty cells in the brood chamber, the bees would fairly screech for joy. How quickly the little fellows would fill those empty cells with nice, new nectar, that had secreted in the blossoms during the night.

2. Full frames of brood can be found in any hanging-frame hive, provided the colony has a prolific queen.

3. The frames will be filled solid with honey and not a cell of brood in them if a queen-excluder is used between the two hives.

4. Reversing the brood-combs will usually retard swarming; nevertheless it is not the most practical method (nor is it at all practical) to break up the swarming fever.

While there is some advantage in reversing the brood-combs, I cannot agree to all our friend claims for the invertible system.

Query Department.

Although the names of the parties attached to the replies to the questions below may not be familiar to all our subscribers, yet they are well known to the editor of the Apiculturist, and we assure our readers that each one of them is well posted in practical bee culture, and thoroughly competent to give instructions in beekeeping; as all of them have had many years experience in the bee-yard.—ED.

Feeding bees in winter.

QUESTION 1. Sometimes it is necessary to feed bees in winter. 1. Is there any practical method of feeding a colony of bees after the weather has become so cold that it is not safe for the bees to fly? 2. Has any one tested a method of feeding and a feeder that has proved successful in a majority of cases? W.

1. Yes. Feed candy on top of frames.

2. I have not. Those who have can tell you how to do so. M. A. KELLEY.

1. I lay a comb of sealed honey flatwise over and on the frames and cluster. 2. Never used a feeder in winter. C. W. COSTELLOW.

We have had no experience in this matter, as we feed our colonies enough before cold weather comes to last till spring. H. D. DAVIS.

1. I think there is. 2. I am now testing a feeder that will permit feeding syrup any time during the winter or summer. (In the queen-breeder's department you will find more about this question.) E. L. PRATT.

If it is necessary, should give them a comb of honey if I had it; if not, feed candy on the top of the frames.

But "an ounce of prevention, etc."; *feed your bees in the fall.* J. D. GOODRICH.

1. I feed honey in the frame. Have fed coffee and sugar syrup, by pouring it in empty combs. Have also fed candy made of coffee and sugar in thin cakes and placed immediately over the cluster on the top of the frames, and then covered with cloth.

2. Have never used a feeder and cannot speak of its practicability. W. P. HENDERSON.

1. Yes, by giving combs of sealed honey. Come out to the honey house and see the combs of honey I have saved for just such cases.

2. I presume so. J. H. LARRABEE.

I have fed very little in cold weather. If feeding were necessary, I should remove the coverings as gently as possible, and place, flatwise, just over the brood-nest, a card of sealed honey, or part of a card, or some sealed sections. If I had no sealed honey I should purchase such. If I could not get sealed honey, I should use the candy made from extracted honey and pulverized sugar; placing it just over the brood-nest.

Mrs. H. HILLS.

1. Yes.

2. Make a rim same dimensions as the hive and two inches deep; place it top of hive; next lay combs of capped honey flatwise on top of brood-frames (unsalable section-honey may be used if you have such); provide bee passage above and below said combs; replace the covering, and the work is done; if you have given them enough to last them through. This method has always proved successful with me.

JOSHUA BULL.

1. They may be safely fed in the cellar, or on summer stand in mild weather. Fill a pint glass jar with warm sugar syrup, tie a strainer cloth securely over it, and invert over the bees just at night; set it level; give the bees room under it and cover up warm.

It is well to have a coarse wire screen, so arranged that the feeder can rest on it. Then the feeder can be removed without letting out.

2. The foregoing is the best way I have tested.

J. L. HUBBARD.

1. I think it is practical to feed bees in winter. If combs are empty, or nearly so, the bees will be found clustered in the upper part of the brood-nest. Bees in a state of activity can endure a great deal more cold than those which have not got their blood warmed; hence to put two or three pounds of syrup or honey warmed to blood-heat in a feeder that will cover an entrance over the cluster, and the cushion on top, would be a practical method of feeding. I have, however, always done my winter feeding before winter so far, and hence have not tried the plan. To pour a little honey not warmed, say half a pound, over the cluster occasionally, might be as good a way as any. 2. I believe Mr. Heddon makes a winter feeder, but I have not seen it. GEO. F. ROBBINS.

1. I have had very little experience in cold weather feeding; but this season a few light colonies were brought to regulation weight by placing cases of unfinished sections over the broodnest. In several instances when the bees were too contrary to carry the honey down I placed the cases under the broodnest. This method was successful with all but one or two colonies and these were given frames of honey from colonies that could spare the stores. The best feeder in existence for cold weather is sealed honey in your regular frames. If this is not at hand dash sugar syrup into empty combs and hang them in the hive. Some of the bee-books recommend molding sugar candy into frames and placing these in the brood-nest. I have no doubt this is a good plan but I have never tried it. I would strongly recommend that you do not permit the "necessity" mentioned in the question to occur very often in your yard. Z. T. HAWK.

Mr. F. E. Merriman of Boston, Mass., has devised and patented a feeder which we shall soon describe in the API.—ED.

Giving bees a flight in winter.

QUESTION 2. Will it do to let the bees take a cleansing flight in winter in case the weather is warm enough so that no bees will drop to the snow? C.

Yes. MRS. H. HILLS.

Yes, if the weather is dry. JOSHUA BULL.

Let them fly; it will result in injury to confine them when they desire to fly. C. W. COSTELLOW.

Yes, if on their summer stands. I never confine them to their hives, or remove them from the cellar to give them a flight. J. L. HUBBARD.

I should think it would do very well but I doubt if the benefit to be derived from it will ever pay for the fun of moving the bees out and in.
G. F. ROBBINS.

We practise out-of door wintering exclusively and arrange the hive entrance so the bees have opportunity to fly at any time they feel inclined. A good flight at any time is beneficial, if there is no light snow for them to fall into. H. D. DAVIS.

The bees will drop on the snow, more or less on the best of winter days, and, if allowed to fly, the day should be with no wind, a bright sun, shine and the snow hard enough to bear the weight of a bee. J. D. GOODRICH.

If wintered in the cellar it "won't pay" unless they show strong symptoms of disease and then the flight may be of doubtful utility.
If wintered on their summer stands a flight cannot well be prevented. J. H. LARRABEE.

At any time during the winter when it will allow bees a cleansing flight. If the weather will permit; if there is snow on the ground, it will not do to allow them to come out with a rush. The snow will blind them.
Bees wintered in cellars should not need a cleaning flight at all during the winter, unless diseased. E. L. PRATT.

Yes. In this latitude, 38 north, bees are seldom confined to the hives more than a week at a time.
My bees as well as all others in Middle Tennessee remain in winter on the summer stands, and have frequent flights during the winter. Scarcely ever a spell of cold weather occurs confining them to their hives twenty days. I think it would be beneficial to give them a cleansing flight where they are housed for winter.
W. P. HENDERSON.

I do not know that it would do any harm to let them have a flight but I am quite sure it would do no good unless they have the dysentery. If you cannot rest contented until you have tried the experiment be careful to set the hives some little distance apart, for if the day is warm and pleasant there will be such a roar in your yard as you never heard before and you will probably have such a "mix" on hand that you will wish you had taken good advice and left them in the cellar.
My bees are in the cellar four months every year and I never think of carrying them out for a flight. I do not like to work well enough for that. I have lost one colony in four years, and that was a queenless stock that crawled in with its next neighbor. Z. T. HAWK.

Apiculturist Mail-box.

The Beekeepers' Directory.

Bismark, Ill.

Directory to hand. And I think it well worth the money.
S. B. STRODER.

Fayette, Ohio, Nov. 27, 1889.

Ed. AM. API: Have received the beekeepers' directory this date. I find it well arranged and very nice.
N. E. CARTWELL.

Worth five years subscription.

Collamer, N. Y.

FRIEND ALLEY—Your suggestions regarding feeding bees, on page 179, are worth five years subscription to the API. J. W. TEFFT.

A good word for the drone-and-queen trap.

Port Jervis, N. Y.

Editor AM. API: Please send me the price of the P. metal for the drone-and-queen trap. I used them the last season and had excellent success with them.
JOHN SCHMIDT.

The best bee-periodical.

Lancaster, Pa.

AMERICAN APICULTURIST: Please find seventy five cents enclosed for which renew my subscription to the API. I like the APICULTURIST better than any other bee-periodical that I have yet had. You can count me a subscriber as long as I have a colony of bees.
JOSEPH EIPEL.

A very nice queen.

Worcester, Mass.

MR. ALLEY: The queen I bought of you was not received in season to build up the colony in time to gather the fall crop of honey, so I fed them thirty-five pounds of syrup.
They are the gentlest bees I ever saw; can almost handle them without smoke, and have not had a sting. They guard the entrance fiercely, and "fire out" any intruders. If they pull through the winter all right, I expect wonders from them next spring, for they are hard to beat.
W. S. YEATON.

I think the above queen was one of a lot reared from our $100 queen, of which mention has been made in the API. We shall have to work our *hundred dollar queen* pretty hard in the season of 1890 to fill all orders from her stock, at the rate the orders come in.

Maumee, Lucas Co., Ohio, November 10, 1889.

DEAR FRIEND ALLEY:—Would you be kind enough to describe the manner of tiering up the sections and also the method of working for extracted honey (when using your Bay State Reversible Hive), in the December number of the API, for the benefit of your new subscribers (myself one of the number)? As your hive is unlike any other, I presume it requires a different management also. You say that queen-excluders are not needed in producing comb honey. Do you use them in producing extracted honey? If so, how and what kind, zinc, or zinc and wood combined?

Can Dr. Tinker's $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{7}{8}$, with open sides sections and wooden separators, be used in your "reversible section case?"

Hoping to see an answer to the above questions in the December API, I remain,

Very truly yours,

LEWIS JAESSING.

[We will reply to the above in the February issue.—ED.]

Honey crop of 1889—fine queen bees.

Angelica, New York.

Editor AMERICAN API:

My crop of honey of 1889 was better than those for the two preceding seasons, but the long-predicted good honey season has not yet arrived. White clover blossomed heavily but secreted little honey, as the weather was too wet and cold.

Bees have started for winter with plenty of food, although they gathered a good deal of dark honey and honey dew. My crop of honey averaged over thirty pounds per colony.

The two queens I ordered of you came to hand safely and were successfully introduced. They were the largest and finest queens I ever saw. I can't see how any improvement can be made in your shipping-and-introducing cage.

I cannot see what any one wants to ship a pound of bees for by mail, as the few that come with the queen are enough.

I am using both chaff and double-wall hives; this winter; will see which is the best for wintering bees. My hives have the Simplicity frames ten frames to the hive. Shall try eight frames next season to see if I can get more box-honey.

J. H. COMMON.

Warm weather.

All our bees had a good flight December 25. In the afternoon the sky was cloudless, no wind, and temperature 60° in the shade.

Shipping queens in cold weather.

Mr. E. L. Pratt shipped a queen safely by mail in November. In January, 1862, we mailed a queen to the late Samuel Wagner, who was then publishing the *American Bee Journal* in the city of Washington, D. C. This queen was mailed in a shipping cage we devised and the bees were in a good condition when received.

I found it was safer to ship queens in November, December or January, than it was during cold spells of weather in September, and the early part of October. While the mail cars are warmed in November, and later on, they are not warmed in September and but little in October. For this reason it does not require as much "science" to ship bees after the middle of October, as it does in September.

Bees by pound.

The present methods of shipping bees-by-pound any distance are total failures. By them it is almost impossible to send a pound of bees over two hundred miles without killing seventy-five per cent of them and more. I have had considerable experience with bees-by-pound from many dealers and for me there has been no money in them. Southern expresses either handle them roughly or else they are not properly packed. Breeders will need to give this subject a little more thought than they have in the past. Where is the trouble?

Missing copies of the Api.

If our subscribers who do not get the APICULTURIST before the tenth day of each month will tify us promptly, they will do us a favor, and save us considerable trouble.

We have a person to look after our subscription book and seldom look at it ourselves and not at all unless some complaint is made. If the API is not received on time, please do not wait from three to six months before you notify us of the fact.

We usually mail the API the first day of each month or a few days before.

Club rates for the Apiculturist.

Five copies of the API will be sent for $3 00; or ten copies for $5.00, all to one address, or addressed to ten different offices.

Any one sending for three copies and $2.25 will receive a copy of the Beekeeper's Directory, bound in cloth, free by mail.

Any one wanting the API and one or all the other bee-papers, may send their subscription direct to us, and we will order from the publishers. We will allow a discount of 10 cents on each paper, if one or more are ordered with the Api.

Beekeepers' Supplies.

We can furnish Bee Supplies of all kinds. What we do not keep in stock we will order from the manufacturer and no article shall cost the purchaser more than the manufacturer's price. See our price-list on second page of cover, Dec. issue.

Bee-escapes—when to get them.

Our readers who wish to use bee-escapes can obtain them at this office The bee-escape is the same thing as we use in the drone-and-queen trap. I know of no bee-arrangement so good as the trap for a bee-escape for getting bees out of sections, or one so effectual in preventing any bees from entering the sections when once out. The trap can be used in this way: Lay the trap backside down, letting the entrance to the trap cover a small hole in the section case. Place anything over the metal of the trap to prevent ingress or egress of any bees through the perforations.

Special Notice.

Mrs. Preston, whose husband died in July, 1889 and left quite a large apiary, desires to dispose of a lot of bee fixtures at a low price. Call and see them, or address, Mrs. John Preston, Georgetown, Essex Co., Mass.

Individual rights to manufacture the drone-and-queen trap.

So many beekeepers desire to make the drone-and-queen trap that we shall offer one trap by mail, and the right to make and manufacture them for one's own use, for the small sum of $1.50.

If any one desires to make the bee-escapes, the same as is used in the traps, and the same things as are used for bee-escapes for getting the bees out of sections, we can furnish the tools for $3.00. They can be sent by mail for 25 cents extra.

Five of the tubes are made at one blow with a heavy hammer. In one day a smart man can make 1000 of the tubes.

The Bay State bee-hive.

Those who are thinking of adopting a different style hive should not fail to examine the Bay State before making up their minds what hive is best. The Bay State Hive is not perfect perhaps, but then it is so much nearer perfection than a large majority of hives in use that all who have tested the B. S. H. have adopted it. Something may be found in the API Mail-Box concerning this Hive.

We can ship these hives direct from the W. T. Falconer Manufacturing Co., at Jamestown, N. Y.

We have a large part of our supplies sawed at the above factory, and better work and stock are not furnished by any one in the business. We have a quantity of the Bay State Hives made up at the factory and ready to ship. Any one desiring to examine the hive can obtain one of them by sending $2.75 direct to W. T. Falconer & Co. The hive is complete in frames, sections and all.

The Bay State Hive has but eight frames, and are of the closed-end style.

The Beekeeper's Directory.

A new book is on our desk. It is entitled "The National Beekeepers' Directory," and contains a classified list of 2,000 beekeepers of the United States and Canada (including about 200 supply dealers), with essays and hints regarding the successful management of the apiary. It is "compiled by Henry Alley, Wenham, Mass." It contains 140 pages, one-half of which are devoted to names and addresses of beekeepers, and the other half to the practical hints mentioned above, including Mr. Alley's "method for rearing queens in full colonies, while a fertile queen has possession of the combs." Price by mail, $1.00 bound in cloth.—*American Bee Journal.*

Special notice.

Our latest methods of queen-rearing will be issued in pamphlet form. It will make a book of over sixty pages. Price, by mail, in paper, 50 cents.

The Beekeepers' Directory, just out; comprising sixty or more pages of the most important matter relating to bee-culture, bound in paper, one dollar; and the APICULTURIST one year, seventy five cents. All will be mailed for the small sum of two dollars.

A beekeeper possessing such a library of bee-literature is well fixed to make bee culture a success under all conditions.

How to remit.

All remittances to us should be made payable to the order of THE AMERICAN APICULTURIST. Please bear this in mind.

THE AMERICAN APICULTURIST

A JOURNAL FOR THE NOVICE AND EXPERT.

PUBLISHED MONTHLY. WENHAM, MASS.

SUPPEMENT, JANUARY, 1890

Raising Queen Bees for the Market—Habits and Length of Life of the Little Insects.

"Don't thrash around. Keep still. Let them light on you, but don't try to brush them off. You won't be stung if you keep still. Why, they are the most gentle bees there are if you don't aggravate them."

Just imagine yourself surrounded by hundreds of bees who are lighting on face, neck and hands, whose feet feel mighty ticklish, and you are told that you must not thrash, but just keep still and let the little insects have all the fun they want with you.

The Globe man yesterday inspected the colonies of bees of Eugene L. Pratt, Marlboro, Mass., who is a breeder of queen bees. He does not keep bees for honey, but is a breeder of fancy stock, to which he gives as much time and attention as if he was breeding blooded and thoroughbred stock of greater dimensions. He is an enthusiastic disciple of apiculture, and from him were gained many points of interest concerning the breeding of these little fellows.

Mr. Pratt winters about 40 hives, and in the summer increases to about 125, all for queen rearing. The average price for a queen bee is $1 and the price ranges as high as $10. Mr. Pratt has one breeding queen for which he says he would not take $100. The difference in price is caused by the development of good points, the same as the prices of horses differ for the same reason. This particular queen will have its life prolonged a year or more by keeping her with a small colony. She is capable of depositing about 3000 eggs per day, but by scientific methods and by having her reign over but a small colony she will lay about 300 eggs per diem.

A queen bee when shipped to a customer by mail, is placed in a small box about an inch deep and wide and four inches long. With her are placed from eight to ten "workers," who feed her on her journey with the paste prepared, which is made of powdered sugar and honey. If the journey is made in cold weather the workers will huddle about the queen to keep her warm. Mr. Pratt breeds from a race of bees which is comparatively new to this country and known as the Carniolan race, which comes from the province of Carniola, Austria. They come from a valley which

is surrounded by high mountains. It is very cold there and there is but little vegetation. For centuries this race of bees has been in existence there and it is now considered the most hardy, prolific and gentle bee in the world.

For three different generations the Pratts have raised bees, and Eugene becomes naturally enough an enthusiast on the bee question. Of this particular race of bees there are but few breeders in this country, and he is the largest in point of product. He is also importing all the time. The average life of ordinary bees during the busy season is 40 days; this race being more hardy will live half as long again. The bees that go into winter quarters remain dormant all through that season, and their life is preserved until the working season opens, when they take to the field, but live only a very few days.

When a queen bee is about five days old she emerges from the hive for the first time. The first day she flies back and forth just in front of the entrance to her home, but each succeeding day she flies farther and farther away. The workers, which are imperfect females, will not recognize her as a queen until she has mated, and when she starts forth it is for the purpose of finding her mate or affinity. The male bees or drones are somewhere in a swarm about the apiary. After she has mated with the drone of her choice she returns to the hive and is then recognized as the queen of that hive. When this queen is shipped away the same process is gone through for yet another queen for that hive.

A queen bee will live from three to four years, and has the power to lay thousands of eggs. It is optional with the mother to bring forth workers or drones, and the workers decide whether an impregnated egg shall produce a worker or a queen bee by the food given.

A queen bee never will sting anything but another queen when in mortal combat to see which shall rule the hive, and she never stings then until she can do so effectively and without injury to herself. Two queens at war will clinch like wrestlers. Where there are two or more queens in the same hive, only one will live, and that must be the victor in a series of battles with her rivals. Often a queen will tear cells apart to attack the young queens and sting them to death, thus killing them in their cradle, as it were. When this is done the workers tear down the cell and carry off the dead. When all the queens in a hive are killed the colony is gone if there is no young brood left in the hive from which to rear another.

The above article was taken from "The Boston Daily Globe."—[Ed.

THE * AMERICAN * APICULTURIST.

A JOURNAL FOR THE NOVICE AND EXPERT IN BEEKEEPING.

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HENRY ALLEY, - - - EDITOR.

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The Editor's Department.

Our supplies at the west.

We have made arrangements with A. F. Stauffer & Co., Sterling, Ill., to supply our drone-and-queen traps, also the Bay State Bee-hive. See his advertisement on page 35.

Brother Newman, editor of the *American Bee Journal*, has been confined to his home several weeks on account of "la grippe."

"Thirty Years Among the Bees" is crowded out this issue. We have not had "la grippe" but about everybody hereabouts has.

The editor of REVIEW and the editor of the AMERICAN BEE JOURNAL made kind editorial notices of the January APICULTURIST. Thanks, brother editors.

This issue of the API is late. All the type setters have had "la grippe." The editor managed to steer clear of the prevailing complaint, though several members of his family have been afflicted by it.

That Honey Almanac of Mr. Newman's.

How many of our readers ordered one hundred or more of Brother Newman's almanacs? If you have not bought a quantity of them and distributed them in your neighborhood you stand in your own light. A cheaper and more effectual way of advertising your honey about your home cannot be devised.

But little to say.

If we tell the truth, friends, we must say that we have but little to tell you *editorially* this month. We can say that the API has received a larger number of subscribers since Dec. 1, 1889, than it ever before received in the same time. The new dress and general make-up of the January issue seemed to please our readers very much. We are getting compliments from all quarters; some of the letters will appear in the API by and by.

The Swarmer.

We knew that a *Swarmer* was a thing that a large majority of beekeepers wanted; but we had no idea that so many would order so soon after we advertised them.

The fact that the *Swarmer* catches drones, as well as the drone-trap and also hives the swarms, is the feature that will make the *Swarmer* popular with nearly all beekeepers. Why, where the Swarmer is used, the bees can be hived in a standard hive, in a box, or in anything to which the Swarmer is connected.

We have hundreds of customers who keep bees and are away from home nearly all day, certainly that part of the day when bees are likely to swarm. Well, the *Swarmer* is just the thing such beekeepers need. How pleasant it will be to the beekeeper on arriving home at night to find that the bees have swarmed and hived themselves.

How nice it will be for our readers who preach on Sundays to go to church and give their whole attention to the congregation and not think even once about the bees swarming.

The *Swarmer* saves anxiety, bees, time, honey and money. Bear in mind that we mail the *Swarmer* to any part of the United States or Canada for the small sum of $1. After you see the sample and find you need more they can be had by express at the low price of $3.50 per doz.

Our price list may be found on page 36.

Correspondence.

Honey-boards.

DR. G. L. TINKER.

THE break-joint principle in honey boards has had its day. Conceived as a plausible theory, it has been accepted as a principle of value by the masses of beekeepers without serious question. It was held that if slats of wood were placed bee-space above the frames so as to cover over the spaces between the brood combs, the queen in attempting to pass above into the supers would bump her head against the slats and go back to her brood again in disgust. A nice theory was that! But it seemed plausible, and has proved a sort of knock down argument to the advocates of direct passage ways for the last ten years. The slat was also held to be a bar to the extension of burr combs.

Some two years since, the writer began experimenting anew with direct or continuous passage ways; although the horizontal bee-space of Langstroth was retained and honey-boards for direct passage ways were exhibited at a convention of the Ohio State beekeepers at Columbus in Jan., 1888. The season of 1888 being a poor one for honey the trial was inconclusive, but the season of 1889 has demonstrated clearly that the break-joint principle in honey-boards is not only without advantages but a positive obstruction to the working of bees in supers. Moreover the break-joint slats did not prove a bar to the extension of burr combs in any case. It was found that, if anything, there were less burr combs built where the passage ways were continuous than where they were broken by the slats. It was also found that the break-joint slats interfered with the perception of light at the entrance by the bees in the upper parts of the hive, and if they were tiered up more than twenty-four inches high the bees in the upper stories were unable to find their way out of the hives. They were practically lost in their hives, ridiculous as it may appear, and so became consumers rather than producers. Did they find their way out finally? Oh, yes! After the lapse of several days some of the last bees would get below the honey-board and see the light at the entrance and set up a hum and soon the whole upper hive would be in a hum. This continued until all the bees had hummed their way out, and taken wing. My surprise may well be imagined at seeing so many bees coming out of the hive humming. It finally occurred to me that this was the only way they could get out. In the hives where the passages were continuous no such results were observed.

It follows, if we are to storify hives and supers very high we must have continuous passage ways, so the bees in the upper parts of the hive can get occasional glimpses of the light at the entrances and so find their way out readily. Aside from the above facts it must be seen that there can be no advantage in causing all the bees to travel out of a direct line in passing a honey-board when nothing is to be gained thereby.

New Philadelphia, Ohio.

REPLY TO DR. C. C. MILLER.

Wood-combs—Clipping queens' wings, etc.

E. L. PRATT.

DR. Miller having drawn his sword, there is nothing for me to do but defend myself, so I will say, as did Macbeth "Lay on McMiller," etc.

Wooden combs.

First of all, I shall want to say that I do not wish the "Doctor" or anybody else to think that I shall ever stand in the way of progress when I know it. No, no! I would rather stand before a locomotive in motion and suffer the results than be the

means of handicapping progress. I am sorry to say that I do not believe wooden combs are going to entirely prevent swarming. About "the queen's reluctance," allow me to say that I had not seen a word from Bro. Aspinwall on "the bees preferring natural comb." It was my own conception of the matter. I do not *know* about this, but the way I now look at it, it *would* be with reluctance that the queen would use such combs for brood. I know it to be a fact, from my own experience, that young queens desperately in want of drone comb will use worker size for drone brood.

I believe bees will swarm even if they have no drone brood at all, providing there are drones anywhere in the yard.

I do not generally give away my experimental failures, but I will do it this time for the sake of explanation. I tried keeping drone brood from off a hive by cutting out the drone comb, decapping, etc., for this very purpose. They were contracted down to six frames, solid with worker brood. Every time I opened that hive I found a few drones present that had come in from other hives. Well, to make the story brief, that colony swarmed naturally. This is why I have no faith in wooden combs as perfectly non-swarming.

Our good Brother Aspinwall has made a valuable implement for extracting honey producers. To him belongs the credit of first making a practical artificial comb for which his reward will doubtless come later, as with the perforated metal discovery.

Clipping queens' wings.

I could tell a long tale of woe on this subject but I shall not bore you with it now.

The act of clipping may be utterly painless but *the part is forever after useless.* I dislike to see cripples of any kind. If the wing would grow again, like a finger nail, I would not object to the practice. To my way of thinking the act is cruel and inhuman because you intentionally cripple the insect. It is like throwing out sheep's joints to keep them in the field. Is not that cruel, although painless?

Low prices.

My dear doctor man! you *must* understand that every beekeeper has not the experience and judgment in this matter you are blessed with, although perhaps it is just as well now that you have made the matter clear to all.

Marlboro, Mass.

How to increase the product of the hives, to secure the most honey and regulate and control the price.

A. C. TYRREL.

How to increase the product of the hives and secure the most honey therefrom, is a question that has been uppermost in my mind at all times when I have had leisure to ponder upon this vital matter.

While it is true that heretofore all crops have been disposed of by farmers, and apiarists have sold what surplus they may have had in store, yet in the majority of instances at prices which counting their labor and expenditures has left little or nothing to be placed to the credit side of the ledger.

It may be that there is an over-production of cereals (occasionally), but it cannot be said that there is now, or has been for many years an overplus of honey, viewed in the light that the visible supply of farm products is regarded in the great commercial centres of this country.

There are many who seem to think that great danger menaces the farmers of the west and northwest, and the country at large, which may also, they think, prove disastrous to apiculturists.

I refer to Major Powell's paper read before the Chamber of Commerce in

New York, Dec. 5, upon the best method of irrigating the arid lands of the country.

He claims that about 120,000,000 acres can be rendered arable by his method. In the wheat belt at the low estimate of fifteen bushels of wheat per acre this land would produce 1,800,000,000 bushels; in corn at 60 bushels per acre would yield 7,200,000,000 bushels; or sown to oats one-half that number of bushels could be easily raised. If planted exclusively to potatoes, and the yield be equal to districts where the system of irrigation is in vogue, we can approximate 12,000,000,000 bushels. What do the eastern people think of this output?

What would be done with this enormous surplus in addition to what is raised annually in this country, and what price would it bring in the market? The visible supply would appall them, the present storage room entirely inadequate to store it.

Even now at nearly all the railroad stations in Nebraska, corn is being dumped in great piles on the ground for want of shipping facilities and room in which to store it.

Cereals and nearly every kind of vegetables grown on irrigated land are superior in quality, they yield greater and command better prices as I can testify from personal observation.

On such land the yield of alfalfa is enormous and if it produces nectar in quantities as claimed for it, what a field for bee-men so fortunate as to be located near the heretofore arid lands of this continent, soon to be reclaimed and made to blossom as the rose.

A few more great honey-producing districts like California, opened up for settlement and rendered arable by irrigation, will practically solve the problem, how to *increase* the product. But will not the small producers be driven to the wall, and be forced to quit the business?

California apiarists, paying no taxes on land over which millions upon millions of bees roam at pleasure, can better afford to sell honey at five cents per pound than those in the states burdened with heavy taxes, and greater labor and expense attend the production of both extracted and comb-honey.

And if vast tracts of land in the west and northwest are reclaimed, actual settlers will soon be found to take up every quarter section, or at least when it becomes generally known that failure of crops from drought is an *impossibility*.

The prophet (?), who based his predictions on retrospective views, possessed no great faculty. No great stretch of imagination or mental acumen is necessary to fit a prophecy to events long since passed into tradition or history; but he who can discern the signs of the times in coming events, to a certainty, is a greater and more reliable prophet than I claim to be.

This brings to mind the second proposition of my problem, which I fear cannot be satisfactorily solved at the present time; for a retrospective view upon which I largely base my predictions for the future output (as I have heretofore said that it is not necessary to possess great mental acumen to judge the future by the past) leads me to infer and believe that "what has been will be,' and that no more honey will be consumed next year than during the year last past.

As to increased production: we all know that the seasons, or climatic conditions of the atmosphere regulate the flow of nectar.

It has been said that every season farmers raise a good crop of corn, the honey-producing plants yield rich stores of honey in abundance; which is a grave mistake, for the ground may be too wet or too dry during the life of those flowers, or too cold for bees to fly, and afterwards the season be sufficiently warm and long enough to mature the corn crop.

We cannot regulate the rainfall, neither can we supply the deficiency until we are prepared to irrigate our land, which in most of the eastern states is impracticable and not to be considered.

Much paper has been wasted and valuable time squandered in trying to *educate* "the dear people" to "*eat*" honey.

Total abstinence has been agitated for many years, and sumptuary laws enacted in at least three states, but still whiskey is consumed in every state in the Union, the traffic in the vile stuff made legitimate by legislative enactment, and the venders thereof by *requirement* are considered and held to be "*respectable*" men in the community.

The difference in the two articles of commodity is just this: After a man has once acquired the habit of drinking intoxicating liquors, he must have (or thinks he must have) it every day. A man may buy a pound of honey to-day, and pronounce it "very good;" but he does not thereby acquire an inordinate appetite for it, and say he cannot do without it to-morrow. A confirmed drunkard will spend his last nickel for a glass of beer, but the most attractive display of honey will not lure him into the corner grocery where it is kept for sale. He spends his money freely for tobacco and cigars, but his family who dearly "love" honey go without. Let Brother Root send out a few more car loads of smokers. Neither is honey a staple article, or one of the necessaries of life like whiskey (?), corn, flour and potatoes; consequently its consumption depends upon the *ability* of the masses to purchase the same. *NO ONE* will undertake to sell at a less price than the cost of production, no matter whether he be saint or sinner, preacher or layman; and so far as educating the masses is concerned, no one has suggested to my mind a practical solution of the enigma.

If a man has not the money and cannot get trusted for *luxuries*, it is very plain he must be content to go without.

Then, honey as it is now regarded an article of luxury may be likened to horses and carriages, sealskin hats and cloak, etc., the rich will buy them, the poor go without, as the Irishman once said: "The rich can ride in chaises, but the poor can walk if he plazes."

In view of the above facts I am fully persuaded that a beginner who is seeking to make the production of honey his sole and only means of livelihood has made a serious mistake; for disastrous results will surely follow an over-production in that line of business, and liable to plunge both him and the specialist into bitter disappointment if not abject poverty.

The darkey who was detected stealing a saddle, excused himself by saying that there were a "certain number of stole saddles to be stole, and a certain number of darkies to steal the stole saddles," and this remark fits pat to what I have been saying about the production and consumption of honey: that there will be a certain amount of honey produced, if the seasons are favorable, and a certain number to buy it.

Madison, Neb., Dec. 21, 1889.

Fixed Frames.

Z. T. HAWK.

How wide shall combs be spaced?—Fertile workers.

WITHIN the last year a widespread interest has been awakened in the question of out apiaries and the transportation of large numbers of colonies of bees from one locality to another in order to take advantage of the varying periods of honey-flow. It is evident that to be successful in either of these comparatively new lines of beekeeping the hive must be of such construction that it can be prepared for transportation with the least outlay of time and labor. The ordinary

suspended frames if not fastened in some way are very liable to give considerable trouble by slipping and swinging when the hives are hauled over roads that are not quite the best. This defect has recently given rise to quite an extended investigation into the merits of the various frames now in use among beekeepers. The chief features desired are that the frames remain in their proper places, no difference what the position of the hive may be, and that they be easily manipulated without killing bees. A third requisite demanded by a large number of beekeepers, myself included, is that the frame be reversible. For several years the closed-end Quinby and its modifications seemed to be the only frames that would answer all these conditions; but quite recently the Van Deusen metal-cornered reversible frame has taken place as a prominent candidate for favor among those apiarists who desire a fixed frame. It is described in my article in the January APICULTURIST, 1889, and another season of use in my yard only serves to strengthen my good opinion of it. Heretofore I have had one very serious objection to it and that was that it spaced the combs $1\frac{1}{2}$ inches from centre to centre; but Mr. O. J. Hetherington of East Saginaw, Mich., has lately removed that objection by having the castings made so as to space the frames a scant $1\frac{3}{8}$ inches from centre to centre. With frames the size of the L., or larger, the wide spacing may be all right but with such small frames as I use ($7 \times 16\frac{3}{8}$ inches) is not to be tolerated.

How wide shall combs be spaced?

This is an old question and I presume the veterans who see the caption of this paragraph will elevate their noses. That is all right and they may skip what I have to say about it if they like; but they must remember that not all the readers of the APICULTURIST are veterans and that many of the veterans themselves are modifying their opinions on this matter since the introduction of the shallow and the contracted brood-chambers. A comb having cells of the proper depth for brood-rearing may also serve as a receptacle for honey; but a comb having deeper cells is fit to be used for storage only. A brood-comb is just about $\frac{7}{8}$ of an inch thick, and it is evident that when combs are spaced $1\frac{1}{2}$ inches from centre to centre there is a space of $\frac{5}{8}$ of an inch between the combs when they contain brood. I believe it was our level-headed friend, Mr. J. E. Pond, who several years ago called this space a loafing place for bees that would better be in the supers or the field. He advanced the idea that crowding the combs close together forced the bees into the sections and gave a greater area of brood to the frame. Some experiments that I made at that time led me to doubt the correctness of his conclusion but I am now very certain that he is right. The character of the season undoubtedly makes a great difference in the area of comb surface that, by the bees elongating the cells, is rendered unfit for brood-rearing. When honey comes in rapidly and the bees go to work in the sections with a rush very little comb in the brood-nest will be drawn out for storage; but if the flow is only a little greater than is required for the daily needs of the colony the cells in the upper part of every comb will be deepened by the bees as fast as the brood hatches. As the season nears its close the entire area of the outside combs is drawn out for the reception of honey and the brood-area of the hive is materially reduced. In the season of '89 I was unfortunate enough to still further reduce the brood space in a number of my hives by inverting the frames and neglecting to turn them back at the proper time. The bees promptly deepened cells for a space of two or three inches from the top-bar and filled them with honey. As the result these combs are thick all around the edges, and

out of the one hundred square inches of comb in each frame perhaps not more than one-third is available for brood. From the time the main honey-flow begins until frost comes I use a brood-chamber containing eight hundred inches of comb and it is evident to the most superficial observer that I cannot afford to permit the bees to use very much of that space as store-comb. With the fixed frame I have been using, I could not prevent the evil, but happily relief is at hand and hereafter my frames will be spaced $1\frac{1}{16}$ inches from centre to centre. One of my correspondents says he spaces his frames $1\frac{1}{4}$ inches and prefers that distance to any other, though it makes it hard to handle combs containing drone brood. In a private letter, Mr. M. M. Baldridge, that veteran apiarist of St. Charles, Ill., who began keeping bees early in the fifties, and who has for many years numbered his colonies by the hundred — now upward of four hundred—says: "I want all my brood-combs only $\frac{7}{8}$ of an inch thick, and a space between them of $\frac{3}{8}$ of an inch is ample. . . . I cannot see why anyone should use $1\frac{1}{2}$ inches from centre to centre. That might do in top-story for extracted honey—and I use them thus." Who could ask for more conclusive evidence? I will add by way of postscript, that since '72 Mr. Baldridge has used a frame $7\frac{3}{4} \times 17\frac{3}{8}$ inches outside measure, nine to a hive—pretty good testimony for the contracted brood-chamber.

Fertile-workers.

For some years I have been anxious to meet that dreadful thing so much talked of and written about—the fertile worker. Well, she was so accommodating as to come along the past season—evidently several of her, for the first thing I knew her eggs were scattered through all the combs in the hive, and many of the larvæ were capped over. Did I carry the bees and combs away a hundred yards, shake the bees off and let them come home leaving the would-be queen (or queens in the grass), "then give them a ripe queen cell," etc? Not if I remember correctly. Time is too precious for fooling that way. I picked the colony up and placed it on top of its next neighbor. The latter was a powerful colony working at a good rate in the sections. I removed the section-case and honey-board and placed the queenless colony directly on the brood-chamber of the colony that had a queen. I then placed the section case above this double brood-chamber and work went on as though nothing had happened. In two or three days I gave the double colony another case of sections; and when the work was well begun in this second case I separated the brood-chambers in the evening and gave one case of sections to each. At the time of dividing I examined only so far as to see that the queen had occupied all the available cells in the brood-chamber that had before been queenless. I did not care which hive she was in for I knew that the other was in condition to raise its own queen. I do not think that the bees lost five minutes of time from their harvest; in fact I think there was a gain of energy resulting from the great number of bees in the double colony. The queenless bees were encouraged to go to work and the result was more honey from the two than I would have got had they remained separate. When an intelligent and well-read beginner will get on his horse and ride four miles to ask me what I do with fertile workers "because the bee-books and papers make such a fuss about 'em," I am led to believe that some of us have made much ado about nothing.

Audubon, Iowa.

The Apiculturist and some of its correspondents indorsed.

W. F. KANZLER.

FRIEND ALLEY: A thousand thanks to you for sending me Vol. VI, of the

valuable *Apiculturist*, for I found in it many a new idea and a great many articles on apiculture written by masterly hands and brains, and the one topic on the "New Races and In-breeding" (Api, 1888, page 80) is worth three times the money of the yearly paper. All the contributions of Mr. Stachelhausen are an honor to your *Apiculturist*, for their plain, clear and correct language, free of all conjectures and only based on facts and experiments, and also free of all personal reflections as any article in a good paper ought to be. I found the writings of Mr. S. years ago in some German bee-papers, and his name has there a very good sound, and I was exceedingly pleased to find him here in America one of the ablest writers on bee-topics.

By the way, friend Alley, you told us in the December number, page 184, that you had the intention to pay a visit to Mr. H. D. Davis of Vermont, and tell us afterwards what you saw and heard. Now, I wish you could find time to undertake the journey and convert the gentleman from his pollen-theory, and no doubt you could do it very easily, if you only show Mr. Davis the Api of 1888, page 214, 2d column,[1] where he can see, that the same theory was started in an old country, about 1778, but was soon abandoned, and that in the years 1876 and until 1879, the same question was deliberated and discussed in the *Bienenfreund* in Germany with the same result:—That the whole pollen-theory is therefore a very old question, nothing new, just as you would dig out the old theory of raising young bees by butchering a steer. But the fun of the thing is, that the inventors of the pollen theory in our days grew very jealous and envious against one another about the priority and the patent of the said theory: they would sell the hide, before they had the bear.

I wish you great success for your *Apiculturist* for the next year.

Fulda, Indiana.

[1The article referred to was by Mr. Stachelhausen.]

Bees by the pound by mail.

W. P. Henderson.

Yes, they can be sent without danger to postmasters, or carriers—even three or four pounds could be carried, in a tin-box, made something like the fresh oyster cans, with round tin supports soldered, or even small blocks of wood tacked on the inside at convenient distances, to avoid being smashed. A box capable of carrying two pounds of bees could be made that would withstand a pressure of two or more hundred pounds, and even if it did get bent or smashed, the bees could not escape. But we do not need at present, and I think queen breeders generally are opposed to using, the mails for this purpose. Start it, and some botch of a beekeeper, would avail himself of the privilege and such a fuss and muss would come from the postmasters, as hasn't been heard since Crop was stung at the camp-meeting.

Bee-papers.

You are right, don't mix up your paper with poultry, pigs, pet stock or preaching; and another thing you noticed sometime since which struck me, viz.: writing one or two columns, with not a single new idea in the article; the whole matter could be boiled down and stated in a dozen lines. Putting a new top on some old fact and stringing out a page or two about it, reminds me of a cup of coffee, an old Virginian and myself got at a restaurant. He said, "that was very fine coffee, and I would have taken the second cup, but did not like to drink so much water for so little coffee." These communications are generally well written, and sometimes readable, but they have nothing in them to think about.

Handling queens by the wings.

I am satisfied, that I caused the death of one of my finest queens by taking hold of her wings in removing

her from a frame she was occupying, as I wished the frame to place in another hive for the purpose of rearing queen cells. She became excited upon touching her and resisted my removing her and clinging with the hooks of her feet to the top of the cells, she was not easily removed, and the resistance was so great I think the base of the wings was slightly detached from the body, which resulted in a permanent injury. She was scarcely one year old and up to this time very prolific. She laid but few eggs afterwards, and the bees recognizing the situation began the construction of queen cells before she died, which was in three or four days. Since this accident I have quit catching hold of the wings for removal.

Murfreesboro, Tenn.

Apiculturist notes and comments.

DR. TINKER.

The cellar so far this winter up to Jan 13 has proved a mighty poor place for bees.

The new Dibbern bee-escape for quickly getting bees out of sections and extracting supers is believed to be a success.

President R. L. Taylor is on record as saying that queen-traps "were a great help to him." This is valuable testimony in favor of Mr. Alley's queen-trap.

At the Michigan Convention Mr. A. I. Root said that "the open side sections were a good thing, and the samples on exhibition filled with honey carried great weight." They were the four-piece white poplar.

At the late International Convention, the current of opinion was largely in favor of cellar wintering and single-walled hives, but it was not shown to be safer than in well constructed double-walled hives.

It is pleasing to note that the Michigan Convention decided by a large majority in favor of spring protection for bees. The writer is on record as saying that ten pounds of stores are saved to every colony by protection in spring brooding; besides, we are able to secure one-third more brood and bees to the colony by June 1, than in single-walled hives.

This is good reasoning, we have long contended that winter packing of bees was of no account, and that in the spring was the proper time to pack, bees. Those beekeepers so far behind the times will catch up one of these days.— ED.]

Mr. H. D. Cutting in an essay read at the convention said "I am opposed to the use of basswood for sections, for several reasons. It is like killing the goose that lays the golden egg." So say Messrs. H. R. Boardman, A. E. Manum and many other leading beekeepers. Every word of that able essay against destruction of basswood timber should meet with approval.

New Philadelphia, Ohio.

Queen-breeder's Department.

CONDUCTED BY E. L. PRATT.

Queen-breeding is fast becoming an enormous pursuit in itself.

The Carniolans are not stingless but they are pretty near non-stinging when pure.

Correct.—ED.]

Can Brother Robinson produce that letter from Rev. L. L. Langstroth, on "first sending queens by mail."

We do not believe he can as Mr. L. was not the first person who shipped bees by mail.—ED.]

Having just a few drones present in nuclei hives containing virgin queens helps along an early wedding tour.

Why do we not guarantee safe arrival to the Pacific States. I believe I shall do so to every state in the union.

We have always guaranteed safe arrival to all places in the United States and Canada.—ED.]

If artificial heat for bee-hives is going to be successful, breeders will be enabled to get at work earlier in the northern parts.

Dr. Miller clips his queens' wings, and considers it all right. In another column you will find my review on the matter of clipping.

A neat queen cage neatly wrapped has much to do with the reception the inmates will have by their purchaser and post-office officials.

Why fuss and putter over candy for queen cages when we know that simple powdered sugar and honey well kneaded together is as good a feed as can be had.

We think the APR was "bang up" last month, and judging from the several private letters of approval we have received from different parties, we are not alone in the verdict.

All hands are giving it to "*us*" on account of sending bees by one-half pound by mail. My hair has turned gray from the effect of it.

J. J. Martin did not give us proper credit in "Rays of Light" for January.

Jan. 6th: — Dandelions in bloom; wild geese flying north. How's that for New England weather?

The trapping of undesirable drones in combination with keeping down the number of their cells, makes a clean sweep of that matter. Drones are immense consumers and if they are going to live they will live in luxury "you bet."

The caging and confining of bees to make up nuclei are bothersome. A colony made queenless for two days' time can be broken into any number of parts without any of this bother. Caging is unnatural. I dislike to put innocent bees behind bars.

An improvement in nursery cages would be acceptable. Those "trap-door" and "slide" arrangements are very unhandy if used extensively. Trimming and shaving queen cells is no fun and we don't like to do it. Give us something new and better.

Let's see you improve the queen-nursery we have used in the Bay State Apiary the past twenty years.—ED.]

Have you ever noticed how clear of bees the entrance of a good working stock is kept, while about that of a poor stock are always anxiety and suspicion of approaching evils. The novice would pick the latter as stronger, while an examination would prove to the contrary.

The verdict seems to be "with the proper width of top bars, burr combs will be kept down." Without doubt the depth of those bars has much to do with keeping the queen out of supers. All my honey boards are up on the loft where they will remain until I need fire wood.

Cutting queen cells open to see how near they are to hatching is like pulling up the vines to see how large the potatoes are. For myself I had rather look at the record, as I might get her back in upside down and then wonder why the queen did not hatch.

HenryAlley will work his fertilizing hives in a separate yard from the full stock and transport the drones there too. This does away with all anxiety of robbing and secures properly pure mating of young queens. Good idea; but running such an out apiary will not be play by any means.

The new "Alley Swarm Hiver" is going to develop into something wonderful for both queen breeder and honey producer. Wooden combs will have to take a back seat always with this implement. To thwart swarming by stratagem can never pay. Use the wooden combs for extracting above

clean wax ones and then get rid of excluders, which belong to queen rearing not to producing.

In a recent number of *Gleanings* there were nine correspondents who preferred hybrid bees in their apiaries against twelve who preferred pure stocks. Will wager with either of the nine men who now prefer hybrids that the pure stock party will swell in number while the hybrid party will go down, down. In the same issue there was a vote on color, with eight in favor of the light and thirteen in favor of the dark races and strain. None were in favor of the very light in-bred Italians.

Proper preparation of nuclei colonies for shipment is a point that needs polishing up considerable. Is it ever necessary to cage the queen inside a nucleus hive? Is she not safer on the comb? I am inclined to think too much ventilation is often given as with queen cages. The most practical methods of introducing to full colonies have the following points worth remembering: a few hours to attain the scent; perfect quiet on the issue of queen. In these two points, I believe, is the secret of successful introduction. The conditions under which virgins are accepted are not present until after the desire to construct cells has been satisfied.

Too much ventilation during the warm months cannot be given queen cages or boxes in which a nucleus colony is being shipped.—No experienced beekeeper will cage the queen sent in a nucleus colony.—ED.]

Siftings in Bee Culture.

CONDUCTED BY M. A. KELLEY.

Periodicals for review, exchanges and correspondence intended for this department should be addressed to

M. A. KELLEY,
Milton, W. Va.

Wood-zinc queen-excluding honey-board. What a name! What a waste of time, of space and words! The simple name excluder is enough unless it be in a description of the different forms of the said much named thing.

The last two numbers of the *Review* have been devoted mainly to discussing "Specialty *versus* mixed beekeeping." The result is yet somewhat "mixed," but many important facts have been set forth. The *Review* is full of real, solid horse sense.

Mr. J. S. Rease and Mr. C. H. Dibbern are giving much time and thought to bee-escapes. They deserve the gratitude of the fraternity. The improved horizontal escape seems to be well nigh perfect. It is made with flat, saucer-like pieces of wire cloth inserted in spaces cut in boards to fit them, said boards being of the proper size to fit the hive in use.

Mr. H. R. Boardman, in *Gleanings*, deplores the destruction of basswood timber in supplying one-piece sections. He says it should be stopped and that he will buy no more supplies that are made of basswood. Mr. Root says that more of it is used for other purposes and that the proper remedy is not to stop using it but to plant the trees and protect them in their growth.

Mr. E. France, in *Gleanings*, after telling us how to kill skunks, puts in an able plea for their lives. Thanks, Brother F., for those kind words in behalf of our poor dumb neighbors. Skunks do undoubtedly eat bees and have eaten bushels of mine, yet I try to give them as little pain in death as I possibly can. Men have no right to give pain, save in self-defence, and even then only enough for self protection.

A smoking-board

is described by Mr. J. W. Bayard in *American Bee Journal*. It is a board as wide as the super in use and two inches longer, with $\frac{7}{8} \times \frac{7}{8}$ strips on the sides and one end to hold the

case up. The end that had no strips on projects and helps to guide the smoke which is forced up between the sections. This little invention will be useful to those who remove honey by the single super. Mr. Bayard has our thanks.

Mr. G. W. Demaree says, in *American Bee Journal*, "I have found by experimenting with sheets of foundation that they can be made strong enough to bear large swarms by simply cutting them into two pieces and lapping the edges together about one-fourth of an inch and welding them together by pressing a putty knife on either side, thus forming a rib in the centre of the sheet of sufficient strength to prevent it from sagging.

"A piece of fine wire may be inserted between the lapping edges which will add greatly to the strength of the sheet."

This is less expensive than wiring the frames.

Mr. G. M. Doolittle has a notable article in *Gleanings* about drones. Lack of space forbids reprinting the entire letter, but the following contains the main points:

That much is lost by rearing drones. That each colony should have one or two inches of drone comb (for they *will* have some anyway) and this all in one frame which should be placed outside the brood-nest so that the queen will not fill it easily and so it can be removed every twenty-three days and the young drones destroyed. That drone cells in worker combs should be replaced by patches of worker cells. That old fruit cans, without top or bottom, with one edge filed sharp, is the thing to cut out the patches and the places to fit them. That the patching may be done by giving the combs to nuclei after removing the drone cells. And this last plan gives the best results. These are valuable hints.

Query Department.

Uniting swarms.

QUESTION 3. I am thinking of uniting two or more swarms when they issue and hiving them in a small brood-chamber, say eight frames, and at once place not less than forty sections on the hive. It is my opinion that I can get double the section honey that I can by hiving each swarm separately. Would like the opinion of those who answer questions for the API. READER.

It would depend somewhat upon the duration of the honey flow. If short, you would get more.
J. D. GOODRICH.

I have had a little experience somewhat in this line, and it has not been as satisfactory as it might. If, however, the swarms are not very strong, I think it would be a decided gain to unite.
C. C. MILLER.

It is my opinion you will not get as much honey as by hiving them separately. In my locality doubled prime swarms are very apt to swarm again at just the wrong time. If you manage badly enough to have a lot of small after swarms it is best to unite several into one hive.
Z. T. HAWK.

The plan will work well if you use a queen excluder to keep the queen out of the sections. Brood and pollen are much more likely to be carried into the sections by a very strong colony, than by a weak one. I have hived two swarms together in a few instances with excellent results.
JOSHUA BULL.

These large swarms will prove unsatisfactory. Sometimes they quarrel to begin with. Sometimes they refuse to commence work with so small a brood-chamber, and desert. Sometimes they swarm about four weeks after being hived. They need lots of ventilation. There are better ways of preventing increase and getting a good crop of section honey. J. L. HUBBARD.

We have experimented for several seasons in this line and find it is not advisable as a rule. It might work, to unite second swarms if you are sure of getting all but one queen; but if two sets of queens are left in the hive they make too much work, especially in large apiaries, by swarming out. Also if two large swarms are united they are very apt to swarm out and make too much work. HILAS D. DAVIS.

I have quite habitually practised hiving two prime swarms together, with excellent results, as to honey gathering, up to a certain point. But the colony must not be made TOO large, or, with me, they will either abscond, or soon begin preparations for swarming again. Half a dozen after-swarms, thus hived together, have often proved the best honey-gathering colonies of the season.
MRS. H. HILLS.

You certainly can increase the amount of your section honey by uniting two or more swarms, especially in a poor locality for honey, or in a locality overstocked, or in a poor season. But if you are located in a good honey region, and the territory not all occupied, you would probably get more section honey by hiving *first swarms*, separately, in full frames of comb or foundation, occupying small brood-chambers.

W. P. HENDERSON.

As you well know, friend Alley, just such a performance as "Reader" proposes has been practised over and over again, both from practical necessity and for experiment. It will probably work with "Reader" just as he thinks it will. He will get a nice lot of section honey, but he will only have one good colony in the fall; whereas if he had hived the swarms in separate hives, he would have had two good colonies. He can govern his action according to his desire for increase.

JAMES HEDDON.

Hived separately, with a short honey harvest following, each swarm might do no more than fill its brood apartment; whereas, if united, they could'nt well help making "double" the section honey. But hived separately, with anything of an extended yield to follow, more surplus would be obtained, and surely the extra colony would be worth something. Even to extract the honey and convert the combs into wax would bring several dollars with "the right man in the right place." J. A. BUCHANAN.

If your locality is one where the honey harvest comes in a shower of from one to three weeks it may do pretty well providing you remove one of the queens. Two swarms that go together will sometimes sulk until one queen is balled and killed. But if your principal source of honey is clover, the season lasting four to eight weeks, do not do it, because (1) You will get no more honey in the long run. (2) If your bees are like mine they will be much more apt to abscond as to swarm again in from one to three weeks.

GEORGE F. ROBBINS.

Have tested the plan of uniting swarms for comb honey many times, and always with excellent results. I use a small brood-chamber, of a capacity for only 830 square inches of comb, and find it large enough for two and even three swarms, but I have not succeeded without the wood-zinc honey-board on the brood-chamber. I put on from forty-eight to seventy-two sections at once, and if any of the cases be taken from another hive with bees and new combs in it, there will be no burr-combs built in any part of the hive. In uniting be sure to take away all queens but one or a part of the bees may swarm out.

G. L. TINKER.

I don't believe you can get *double* the honey by the above method, but I know you will secure more. I managed that very way two seasons ago, and procured from one hive over seventy-five pounds of nice white honey in one-pound boxes. By that method, however, the parent colonies are doing nothing but getting strong in bees, and, with the large numbers of field bees that could be brought into play, they remain consumers only. If I did not care for increase, I believe I would rather follow the method of hiving each swarm separately and placing the brood left in the parent hives above the new swarm on the old stand, as then they will be placed so that *all* can add to the beekeeper's income and amount to about the same.

If two swarms should cluster together I would hive them as you say, and divide later if increase were desired. E. L. PRATT.

Giving bees a winter flight, and feeding bees in winter.

BY C. W. SMITH, *Wellesley Hills, Mass.*

My bees are wintered on their summer stands, that they may have a chance for a flight, when the weather offers the opportunity. Last Sunday, Dec. 8, 1889, bees were out in full force. To-day, Dec. 15, 1889, the entrances to the hives are all covered with snow, and if they should remain covered eight or ten weeks and after that a warm day comes, would clear out the entrances and let them come out. No matter how many bees dropped on the snow— the flight is worth all the bees it would cost.

Feeding bees in winter.

I am in the fruit business and in the spring deal in maple sugar, and have so far been able to buy *inferior made* maple sugar at a low price, say below the price of granulated sugar. One season got it at four cents per pound. Whenever the opportunity offers I buy sufficient for my *winter* and *spring* feeding, and I have never used anything else, and as long as I can get maple sugar, — want nothing else.

I raise the winter *top* packing and cover the tops of the *brood* frames with the *moist* cakes of maple sugar (if in judgment the cakes are not moist enough I dip them in a pail of hot water and they very soon will be) leaving just space between the cakes for a bee to pass, then put on the enamel cloth over the sugar and the packing on top of the enamel cloth. The natural heat from a good colony will generate moisture enough to soften the sugar so they may take care of themselves. I feed all my colonies in this manner as soon after Feb. 1 as I can get a warm day to lift the top packing so not to freeze them, and continue to feed a few cakes every ten days or so until fruit blossoms, and by that time strong colonies are ready to swarm and weak ones have got themselves into fine condition,

BY F. P. STILES, Haverhill, Mass.

I should remain *absolutely passive*, especially if the bees were in the cellar. If only one or two colonies became uneasy the quiet of the others *might* be preserved by ridding the cellar of the riotous few, but I have never felt the need.

Feeding bees in winter.

1. Set one of the feeders mentioned below over such, having the contents thoroughly warmed and you will be happily surprised. Perfectly practical at any time and in any weather.

2. The feeder I use proves successful in all cases. I use the Heddon hive. At the close of the white honey harvest I replace the case or cases of sections with a single brood case of empty combs which the bees fill with fall honey. That makes an absolutely perfect feeder and I use them as such. "Successful" doesn't half express it. Fuddling with candy and syrup belongs to the dusty past. There never was anything either practical or profitable in it and there never will be.

Apiculturist Mail-box.

A compliment to Brother Pratt.

Dark Ridge, N. C.

MANAGER API:—Please renew my subscription to the API. I do not know how I could get along without it. The articles of E. L. Pratt are worth more than the subscription price.

G. W. MCGUIRE.

Speaks highly of our queens.

Malone, Ia.

MR. ALLEY:—Please send me one of your queens. I am acquainted with Mr. Coverdale of Welton, Ia., who received some queens from you last fall. He spoke very highly of them.

D. D. HAMMOND.

Best crop of the season.

Limerick, Ill.

FRIEND ALLEY: The 75 cent queen you sent me with the API in 1888, gave me this year (1889) 160 pounds of honey, besides one good swarm. The bees are beauties, not cross, good workers and not given too much to swarming.

E. PICKUP.

Who can beat this record?

North Clarendon, Vt.

MR. ALLEY:—Herewith find 75 cents for my subscription to the API. I have had something to do with bees for more than sixty years, being nearly seventy-six years old. I bought the right to use the Langstroth hive in the year 1858.

E. L. HOLDEN.

A valuable paper.

Forest City, Iowa.

FRIEND ALLEY: I send seventy-five cents for your most valuable paper for another year; could hardly do without it. Had in spring forty-three stands; increased to sixty-five, and had 1,800 pounds surplus. Very dry in this locality.

W. W. WRIGHT.

Bees doing well.

Hartford, Pa.

The bees had a flight yesterday and I also picked dandelions in bloom. The prospect is that my bees have used up the large amount of honey dew which they gathered in the fall and now stand a good chance to come out all right in the spring.

H. M. SEELEY.

The best of all.

Mount Carmel, Ill.

EDITOR AM. API: Herewith find 75 cents for renewal of your paper which to my mind is best of all.

How any one can get along without the drone-trap is a mystery to me. We have six in constant use and the neighbors would like to borrow if we could lend them.

LIZZIE HURLEY.

Bee escapes.

Sheboygan Falls, Wis.

Apropos of bee escapes, I made a ¾-inch auger hole in the flat cover of an S. Langstroth hive; placed the case of finished sections, full of bees, over this cover on the hive; covered the case with an upper story or cap and left it thus over night, In the morning not a bee was left in the sections to tell the tale.

MRS. H. HILLS.

Three good queens.

Nashville, Tenn.

MR. ALLEY: I bought three queens of you in 1888. They were not well marked, but for workers they "took the cake." Neither of these queens cast swarms. They stored in pound sections, eighty-one, eighty-two and ninety-two pounds of honey respectively, from white clover as any I ever saw.

Our bees are breeding rapidly; they carried in pollen all through December.

A. H. NOBLE.

How an old beekeeper appreciates a sample copy of the Api.

West Cornwall, Vt.

MR. ALLEY:—The APICULTURIST is just the book I want. I have learned a great deal about bees from the sample copy you sent me. I think it a big book for a small one. I have got a good many bee books, but none like the API. I would like one to read every night.

I have kept bees over thirty years and can still learn something about them.

JOSEPH R. JONES.

Ventilation of hives.—Cleaning combs from which the honey has been extracted.

Amana, Ia.

MR. ALLEY:—Please answer the following questions through the APICULTURIST:

1. By what methods can a strong colony be ventilated in hot weather and at the same time so arranged that the ventilator can be closed handily on cool days and nights?

I use the 10 frame L. hive and sometimes tier them two and three stories high, and only leave the entrance at the bottom open, which is $\frac{3}{8}$ inches by $14\frac{1}{2}$ inches long.

2. Which is the best way to have combs cleaned by the bees from which the honey has been extracted? Last fall I put such combs on my hives to have the bees clean them, but instead of cleaning the honey out the bees put more in.

JACOB WAGNER.

1. Where hives are tiered two and three stories high, there should be a small entrance, say three inches long, at the bottom of the top hive. The bees would not have so far to travel, and the hive would be much better ventilated. There would be no danger from robbing if the colonies are strong. No such entrance should be made in case a colony is weak in numbers.

2. The best way to get the extracted combs cleaned of honey is to place such combs under the brood-nest; that is, remove the bottom of a hive containing a strong colony and place the bees over the combs. Bees usually remove all loose honey to the combs at the top of the brood-chamber.

Bees dying in the cellar.

North Greenwich, N. Y.

MR. ALLEY:—One question I would like to ask you.

I winter my bees in the cellar. I set them on shelves and have something over 100 colonies in one small room with the entrance to the hives open. They come out of the hive, one at a time, and fly so that the cellar bottom is nearly covered. Shall I close the entrance or what shall I do?

SETH W. GREEN.

Do not close the entrance to any of the hives. All the bees would die in that case.

I should say that your cellar was imperfectly ventilated, or that you have too many colonies in one small room. The food may be unsuitable. I find that poor stores is usually the cause of bees leaving the hives in the way yours do.

It is so late in the season and as the bees are in the cellar, I must say that we can give no advice that will help you in the matter. I think, however, that it would have been a good plan to have given the bees a cleansing flight by removing them from the cellar during the warm weather in December.

Powdered sugar and honey.—How to mix.

Voluntown, Conn.

MR. ALLEY:—How can I mix powdered sugar and honey so it will not separate and run? I have tried it a number of times, and it will separate and the honey run out.

F. S. BITGOOD.

Add one pound of good, thick honey to four pounds of powdered sugar and knead like dough for half an hour. If it sticks to the hands add sugar till it does not.

We find the following in the *Canadian Bee Journal*:

Take absolutely pure granulated sugar and pulverize it. Put it in a granite dish and pour over it enough pure honey (first having heated the honey to a little below boiling point), to thoroughly saturate it and stir the mass until the sugar and honey are well mixed. Then place the vessel in hot water, in which it should be allowed to stand (keeping the water about boiling point) until the sugar and honey become thoroughly incorporated. When cool, it will be found quite waxy. It will not melt and run easily, and the bees take to it very kindly.

Still another way.

MR. ALLEY:—I notice in sample copy of APICULTURIST sent for April, you wish to know of a good "sugar cake" recipe for feeding bees. Will give you one I have tried and proves good. Perhaps you have used it before.

Take one part extracted honey and four parts pulverized sugar and stir them together. It will not run and makes a nice feed.

W. L. WARNER.

Late Drones.

Lebanon, O., Nov. 12, 1889.

EDITOR APICULTURIST:

Did you ever know a colony of bees to keep their drones as late as this without they were queenless.

WM. M. ADAMS.

No, we never did; should say the colony is queenless.

Prevention of Swarming.

Bellefonte, Pa.

MR. ALLEY:—How can I prevent swarming so as to get less swarms and more honey?

JAMES L ROTE.

The best reply to the above may be found in the query department. Let the bees swarm and hive two or more swarms in one hive.

Chapman honey plant.

Murfreesboro, Tenn.

Through the Department of Agriculture, Washington, D. C., I received a small package of seed of the above plant in February, 1888; planted the same in March following and re-set the plants in April last.

The first bloom appeared on the Fourth of July and it continued in bloom about forty days. I had twenty-six plants.

The bees visited them continually, but the nectar obtained seemed to stupefy and intoxicate them. In gathering from clover, blackberry and other bloom, their movements from one blossom to another are generally quick and rapid until a load is obtained when the flight was taken at once homeward. Not so when alighting on the blossom of the Chapman plant.

I have seen them suck the juices from partly decayed peach, apple and plum and after filling themselves remain upon the fruit stupefied, and you could move them about with a stick on your finger, without seeming to frighten or making them take wing, and they would remain there for hours and often all night, and I doubt if all or very many ever found their way back home.

When filled with the nectar of the Chapman plant, the same conditions were observed as if feeding upon the juices of the fruit named. Has any one else noticed a similar condition? The same thing I noticed of the bees visiting a yellow flower crown as the milk or silk weed in our old fields.

W. P. HENDERSON.

Artificial honey.

Artificial honey, which is more common in the market than consumers know, is made of potato starch and oil of vitriol. Some rash optimists think that they are sure of getting the genuine product of bees and flowers by purchasing honey in the comb. They do not know that the exquisite white comb that pleases them is often made of paraffin wax.—*Herald of Health.*

The fellow who can get such a piece of news as the above through his brain has a big head.—ED. API.]

Bee Convention.

The twenty-first annual convention of the New York State Beekeepers' Association will be held at the County Court House, Rochester, N. Y., February 5, 6 and 7, 1890.

Description of a honey-producing plant found in Utah.

W. B. BENNETT.

I noticed in the November issue of the API an article from the pen of Mr. W. P. Henderson, on the "Chapman honey plant." I know nothing about that plant, but have thought for a long time of sending you a description of a splendid honey-producing plant found here in Utah. I consider it superior to all others for the following reasons: 1. It produces a profusion of flowers that keep on blooming for a long time. 2. It commences about the last of June to blossom and continues until frost kills the plant. 3. The bees work upon it from early in the morning till late in the evening. Some people call the plant "wild lucern;" but I call it "California sweet clover." When cut early it makes excellent fodder for cattle and produces an extra quality of milk. I know the honey gathered from it is splendid. We can say that two staple articles of food are produced from the "California sweet clover—fine honey and butter."

On good soil it will grow to a strong, vigorous plant from eight to ten feet in height from the seed the first season. To keep it from spreading over the land where it is not wanted, it should be cut down before it seeds. It is one of the best fertilizers of the soil I know of.

Sample of the seed sent to anyone who will remit enough to pay for postage and packing of a small package. *West Jordan, Utah*

Clover.

The eminently practical and sensible Father Clarkson of the "Iowa State Register" commends clover for the national flower by reason of its utility, as well as beauty. He says:

"Probably a greater number of the city papers favor the golden rod. To the denizens of the city, in the fall of the year, when enraptured over everything they see in their rural districts, the golden rod may be a beauty. But to the practical farmer it is simply a useless, nasty weed of no benefit as food for stock, no valuable medicinal properties; has no sweet scent, and only of moderate beauty just before frost. But the red clover is always sweet, beautiful, and in bloom nearly all summer. There is no flower more valuable to man. It produces the richest pasture, the most nutritious hay, and its blossoms produce the choicest honey, and it is claimed they have superior medical qualities. Its blossoms contain two of our National colors, while the golden rod has neither. Clover is never a weed, or a nuisance in any place, or under any circumstances. It has only virtues and no drawbacks. It is of utility wherever found, and in the world's material wealth it has no superior. Let us have something sensible when adopting a national flower."

Colonel Ingersol extols its excellences and beauties in the following rhapsody on the clover:

"A wonderful thing is clover. It means honey and cream; that is to say, industry and contentment, that is to say, the happy bees in perfumed fields, and at the cottage gate old boss, the beautiful, chewing satisfaction's end, in that blessed twilight pause that like a benediction falls between all toil and sleep. This clover makes me dream of happy hours, of childhood's rosy cheeks, of dimpled babes, of wholesome, loving wives, of honest men, of springs and brooks and violets, and all there is of painless joy and peaceful human life. A wonderful word is clover. Drop the 'c' and you have the happiest of mankind. Take away the 'c' and 'r' and you have the only thing that makes a heaven of this dull and barren earth. Cut off the 'r' alone and there remains a warm deceitful bud that sweetens breath and keeps the peace in countless homes whose masters frequent clubs. After all, Bottom was right; 'Good hay, sweet hay, hath no fellow.' "—*Exchange.*

The Bay State bee-hive.

In response to a large number of inquiries received from the readers of the API for a description of the Bay State bee-hive, we herewith give a brief outline of the hive. The frame (closed-end) which is used in this hive is the simplest in construction of any brood-frame; yet, when properly nailed, that is, when long brads are used to nail the ends of the frame to the bottom and top bars, it is one of the most substantial brood-frames in use. A nailing-block should always be used to put such frames together, as then each frame will be the exact duplicate of another.

The frame is a standing, or closed-end, frame, and is also a reversible frame, either singly, or the entire eight frames which forms the brood-chamber may be reversed in a body.

The bottom-board, fig. 1, is very substantial and one of the best and most convenient base-boards used about any bee-hive. The frames rest, or stand, on strips G G. E E is the entrance, and the bees pass to the hive under the strip G, located between E and E. The entire brood-chamber rests upon strips G G and E E. There is a space un

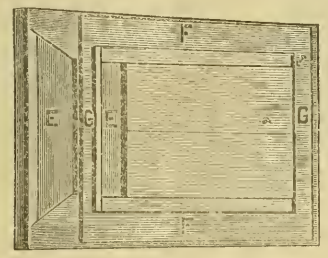


FIG. 1.

der the frames of 9-16 of an inch being sufficient room for perfect ventilation in winter or summer and for dead bees and dirt in winter.

Fig. 2 represents the bottom-board, brood-chamber and one section-case from which the side-boards have been removed, thus exposing the interior of the brood-nest and also the four outside sections in the case. C C C C are four sections, and also represent one of the separators, which are used between each row of sections. The frames are held firmly in place by the two iron

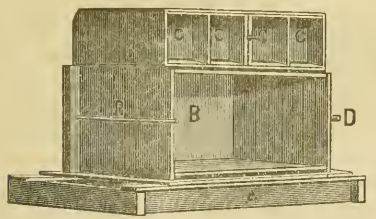


FIG. 2.

rods B D which pass through the side-boards of the brood-chamber, thus clamping the frames solidly together when the thumb nuts are set up. When necessary to move a colony of bees in one of the Bay State hives there are no frames to nail nor can the frames get out of place while a colony of bees is being transported. The section-case is composed of six broad-frames; each holding four one-pound sections, or twenty-four sections to the case. A wooden separator is used between each two frames or to each eight sections. Like the brood-nest, the six broad-frames of the section case are held together by an iron rod which runs through the centre of the case as shown in the illustration. All the twenty-four sections may be put on or removed from the hive in a body at one time or, if desirable, the rod can be removed and any one of the broad-frames taken out singly. The case is also reversible which is an important feature in any hive. I know of no way by which the sections can be filled without pop-holes, and fastened so nicely on all sides the section as by reversing the sections at the proper time. Now this can be done so quickly and quietly with this section case that there is little or no disturbance to the bees. There is just a bee-space (three-sixteenths of an inch) between the section-case and the top-bar of the brood-frames; and the bees build no brace combs between nor between the top-bars of the frames. Another point which can be claimed for no other hive is the fact that the *queen has never been known to enter and deposit any eggs in any sections used on the Bay State Hive*, and no queen-excluder is used. Can the same be said of any other hive? The section cases can be tiered as high as is practical. We have tiered them successfully as high as four cases, at one time. When a new set of sections is added, the one put on first is reversed and the new case placed directly on the frames, thus bringing the empty sections the nearest to the brood-nest. There is no hive in use whereby the sections can be placed so near the brood as can be done in the Bay State Hive. The experienced beekeeper will appreciate this last mentioned advantage.

As a winter-hive, the Bay State has no equal; as a hive to bring bees to the swarming point early in the season (and this means profit to the beekeeper, as no colony of bees is ready for business that is not in a condition to swarm so far as point of number is concerned) the Bay State stands first among the hundreds of different styles of hives now in use.

Fig. 3, in which is represented the Swarm hiver and two Bay State hives, shows the hive ready for winter with the outside case on. There is a space of nearly two inches between the winter case and the brood-chamber. This space in the fall may be filled with chaff, or other heat-re-

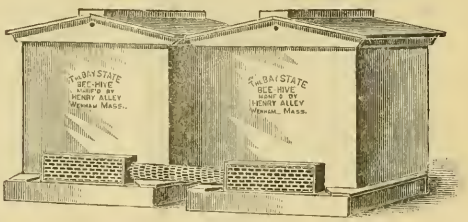


FIG 3.

taining material. We never pack in the fall. Just as the bees commence to carry pollen in in the spring is the proper time, in our opinion, to pack a colony to secure the best results. A heavy duck mat and a cushion six inches thick, filled with chaff, or hay cut to length of about two inches, is all the winter-packing a colony needs to be wintered well in the Bay State Hive.

The Bay State Hive weighs, all complete, but thirty-five pounds. Anyone can lift them about bees, stores and all, with ease.

We claim for this hive all the following desirable features:

Simplicity in construction.

When necessary to remove or ship a colony of bees, the frames need no nailing, and no hive can be more perfectly ventilated when packed for shipment.

Contraction is equally easy for any number of frames. Bees can be confined to one comb if desirable.

A division-board, one-eighth of an inch thick may be used and cannot get out of place.

For tiering, this hive has no equal, as any number of sections may be used and piled up as high as practicable.

Brood-frames are easily taken out or replaced without danger of killing bees, and it is not necessary to remove any frames laterally in order to get out any of the combs, and the frame removed is the only thing that need be disturbed.

The bees cannot build comb between the end-bars of frames, and in case of bulged combs, frames can be taken out with little trouble and the comb straightened.

So simple in construction are these hives that any one can "put them up" in fine shape, including every part from bottom-board to section, in less than half an hour. They are sawed so accurately that there is not a shaving to come off.

Closed-end frames are used in this hive, and for that reason we claim a colony of bees will build up stronger in the spring in less than half the time a colony will in a hive having open-end frames. This is a point that should be considered by every fair-minded and experienced bee-keeper. We make this claim from actual test. It is no theory. No heat can escape from the brood-chamber when the hive is packed for the special purpose of retaining warmth and animal heat generated by the bees. For this reason we claim that two quarts of bees will care for double the brood in one of our hives than they can in a hive having hanging frames.

Not only can this hive be made as hot as an oven, but it also can be so ventilated as to be one of the coolest hives in use. When painted white, and the outside case is used during the hottest days the strongest colonies will not "lay out," even though the hive is not shaded from the hot sun. Some hives are so imperfectly ventilated during the honey harvest, that the bees cannot work in the sections, but will cluster outside. It is not so with the Bay State hive.

We also claim that when properly packed, this hive will winter bees equal to any bee cellar, and if no packing is used between the outside and inside hives (and we believe none should be used) the combs will be as bright and clean in spring as at any time during the summer.

The hive has a low and dark entrance. The same arrangement used to exclude light also excludes snow and rain, and while the entrance is open the entire length no light nor snow can enter.

Please bear in mind that the largest and most successful beekeepers in the world use the closed-end broad-frame. We refer to Capt. J. E. Hetherington, Cherry Valley, N. Y.; P. H. Elwood and other large beekeepers. Our brood-frame is the same size, or nearly the same, as Capt. Hetherington uses.

Directions for using the swarmer.

Place one of the swarmer-traps at the entrance of the hive from which a swarm is expected; the other trap at the entrance of an empty hive. Connect the two traps with the metal tube as shown in fig. 3, page 32.

If the traps do not quite cover the entrance to the hives, the uncovered part should be closed by other means. The bees must be compelled to pass through the metal.

When a swarm issues, the queen will pass from the home hive through the metal tube to the empty hive. The bees take wing and missing their queen soon return, when finding their queen in the new hive at once join her and settle down to work. When the swarm is quiet, the hive may be moved to any location of the apiary.

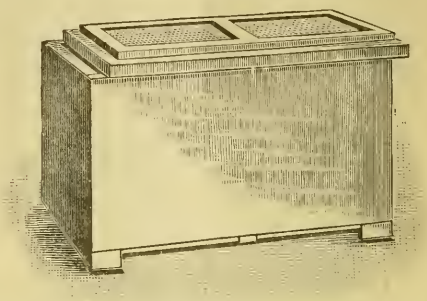
The swarm may be hived in a box; say one similarly arranged as in the swarm-box, such as we have used in the Bay State Apiary so many years. Connect the metal tube with the swarm-box instead of a hive.

The swarm-box has a cover which (as well as the bottom of the box) is covered with wire cloth to admit air. It will be noticed that the cover of the box is moved back, thus exposing the perforated metal nailed across the top of the box to prevent the queen from escaping. If the swarm-box is utilized to catch the swarm, it should be used as here illustrated.

Whatever is used to hive the swarm in should be placed as near as possible to the hive from which the swarm is expected to issue.

Some style Langstroth hives have porticos. To apply the swarmer to such, it will be necessary to make a hole through the portico at the side of the hive large enough to admit the metal tube so as to connect the two swarm-traps.

When placing the swarmer on a hive having a low entrance, the dirt on the alighting-board should be cleaned off, or the bottom of the trap



might obstruct the entrance to the hive and thus destroy the bees. Any one possessed of a little ingenuity can adapt the swarmer to any style of hive.

We cannot undertake to make but one size of the swarmer. Those we send out are large enough for the strongest colonies. The swarmer is not large enough to cover an entrance fourteen inches long.

One of the tubes sent with the swarmer is not nailed on account of packing. To nail it in its proper place it should be pushed through the aperture and the nails driven in on the inside of the trap so that the metal tube will enter the wood.

Special notice.

Our latest methods of queen-rearing will be issued in pamphlet form. It will make a book of over sixty pages. Price, by mail, in paper, 50 cents. The Beekeepers' Directory, just out; comprising sixty or more pages of the most important matter relating to bee-culture, bound in paper, one dollar; and the APICULTURIST one year, seventy-five cents. All will be mailed for the small sum of two dollars.

How to remit.

All remittances to us should be made payable to the order of THE AMERICAN APICULTURIST. Please bear this in mind.

Individual rights to manufacture the drone-and-queen trap.

So many beekeepers desire to make the drone-and-queen trap that we shall offer one trap by mail, and the right to make and manufacture them for one's own use, for the small sum of $1.50.

If any one desires to make the bee-escapes, the same as is used in the traps, and the same things as are used for bee-escapes for getting the bees out of sections, we can furnish the tools for $3.00. They can be sent by mail for 25 cents extra.

Five of the tubes are made at one blow with a heavy hammer. In one day a smart man can make 1000 of the tubes.

The Bay State bee-hive.

Those who are thinking of adopting a different style hive should not fail to examine the Bay State before making up their minds what hive is best. The Bay State Hive is not perfect perhaps, but then it is so much nearer perfection than a large majority of hives in use that all who have tested the B. S. H. have adopted it. Something may be found in the API Mail-Box concerning this Hive.

We can ship these hives direct from the W. T. Falconer Manufacturing Co., at Jamestown, N. Y.

We have a large part of our supplies sawed at the above factory, and better work and stock are not furnished by any one in the business. We have a quantity of the Bay State Hives made up at the factory and ready to ship. Any one desiring to examine the hive can obtain one of them by sending $3.00 direct to W. T. Falconer & Co. The hive is complete in frames, sections and all.

The Bay State Hive has but eight frames, and are of the closed-end style.

This is first-class.

Collamer, N. Y.

HENRY ALLEY: Accept my most sincere thanks for the June and July numbers of the APICULTURIST. I assure you it is refreshing to take up a bee-paper of science, in which the publisher does not go out of his way to sneer at inventors and the experimental bee men, and such a paper is the API. Few bee-papers contain so much good advice in such agreeable shape, and I find there are profit and pleasure to be had out of an hour devoted to the AMERICAN APICULTURIST.

If beekeepers must know how to rear queens we commend them to the AMERICAN APICULTURIST.

If the *Beekeepers' Directory* is anything near so good as the *Handy Book*, it will be a model of clear statements, intelligible definition, excellent reasoning and full of common sense. The logic and rhetoric of Mr. Alley have achieved for him an enviable reputation as a master in the field of mental science and queen-rearing. He is the author of many known works in the apicultural department and they are interesting, scholarly, sound and devoid of all nonsense.

This, his last work (Beekeepers' Directory), will perhaps be regarded as his *magnum opus*. No honey producer can afford to go without it.

JAMES W. TEFFT.

PRICES OF SUPPLIES

—AT THE—

BAY STATE APIARY,

WENHAM, MASS.

Bee-Hives.

We offer only the Bay State hive for sale.

One hive in the flat,	$ 3.00
Six hives " " "	15.00
Twelve " " " "	27.00

All parts of the Hive are included in the above, frames, sections and all but paint and nails.

Sections.

One-piece sections	per	1,000	4.50
" "	"	500	2.50
" "	"	100	.60

Langstroth Frames.

Material for (hanging) frames for Standard L. Hive per 100 ..... $3.00

The frames we use are so constructed that the bees will not build comb between or over them at the top, nor fasten the section case and frames together, as is the case when the common top bar is used.

Nailing Block for Frames.

No one can do good work at nailing frames without a proper board to nail them on. We can send one, by express, that will do the work nicely price ..... .50

Comb Foundation.

We can supply the best brands at manufacturers' prices, and ship direct to our customers from the nearest factory. We also keep a quantity in stock to fill small orders.

1 to 10 lbs., for brood frames ..... 45 cts. per lb.
1 " " " " sections ..... 50 " " "

We keep in stock but one dimension of brood-foundation 17½ x 7 inches. This is large enough for any L. frame and is just right for the Bay State frame.

Perforated Zinc.

This we can supply in any quantities, shipped with other goods, per foot, ... 12 cts.

If sent by mail, add 10 cents per foot for postage.

Honey Extractors.

THE E. T. LEWIS & CO. EXTRACTOR.

No. 22. 28 inches in diameter, 25 inches high, 2-frame for any size up to 12½ x 19; room for 25 lbs., honey below reel, and the best extractor ever made for. $10.00

We sell this size only as it is the most convenient to use of any found in use. This extractor is adapted to any frame in use.

Honey Knives.

Root's knife, by express,	.70
" " by mail,	.75

Bee Veils.

The veil has a rubber band which draws the top together; it is then placed over any hat and drawn until the elastic is over the hat band.

Common net, by mail ..... .35

Smokers.

Bingham & Hetherington's only.

By mail, $1.75; by express 1.50

Queens and Full Colonies.

Queens.

Prices.

Untested queens, each,	$1.00
Selected " "	1.25
Tested " "	2.00
Extra breeding queens, the best we have, each,	3.00

Our untested queens are sent out before any of their brood hatches. 95 per cent will prove to be purely mated. Safe arrival and purity guaranteed in all cases.

Carniolan queens and bees at the above prices. Our strain of this new race of bees cannot be excelled.

Full Colonies.

We consider eight frames well filled with brood and covered with bees a full colony. Prices of such in B. S. hive, including one set of sections, $12.00. Purchasers to pay express charges. Safe arrival guaranteed.

Fourth Edition of the

Beekeepers' Handy Book, or Thirty Years among the bees. 75 pages, with illustrations, by mail ..... .50

Queen-rearing Apparatus.

Beekeepers who rear queens, whether by the Alley method or by any other, should have the apparatus here described. The SWARM-BOX and QUEEN-NURSERY are articles that no person who rears queens ought to dispense with.

By using the swarm-box a large colony of bees can be confined a long time or transported safely hundreds of miles. It is a very useful article about the apiary at all times during the season.

Sent only by express, price. $1.25.

When a colony swarms and it is desirable to preserve the queen-cells, and no nuclei are at hand, the Queen-nursery in such cases will be found invaluable; the cells can be placed in them and they need no further care for a week or more. Virgin or fertile queens can be kept in the nursery for several weeks. We have sold a large number of queen-nurseries in years past.

The following articles are also used in rearing queens, a full description of which can be found in our work upon queen-rearing.

	Express.	Mail.
Queen-nursery (of 21 cages)	$1.25	$1.60
Swarm-box	1.25	
Fertilizing-hive (complete)	.50	
Fumigator for using tobacco	.25	.30
Cone-feeder	.15	.20

To make the lot complete, we put in each package one drone-and-queen-trap, one copy of THIRTY YEARS AMONG THE BEES, and send all by express for $4.50

All these articles can be packed in the swarm-box and sent safely by express or freight.

Brooms for Brushing Bees from Combs.

We find a small "corn-broom" best for this purpose as it does not injure or irritate the bees, and will do the work better and quicker than anything else used for the purpose.

1 broom, by mail	.25
1 " by express	.20

HOW TO REMIT MONEY.

Remit by registered letters, cashier's check or express orders. If sent by money orders or postal notes, have them made payable at the Salem, Mass., P. O. Make all remittances payable to the order of the AMERICAN APICULTURIST.

Address,

AMERICAN APICULTURIST,

Wenham, Essex Co., Mass.

THE * AMERICAN * APICULTURIST.

A JOURNAL FOR THE NOVICE AND EXPERT IN BEEKEEPING.

PUBLISHED MONTHLY. SUBSCRIPTION PRICE, 75 CTS. PER ANNUM.

HENRY ALLEY, - - - EDITOR.

VOL. VIII. WENHAM, MASS., MARCH 1, 1890. NO. 3.

Entered at Post-office as second-class matter.

The Editor's Department.

Special notice.

We have made arrangements with A. F. Stauffer & Co., Sterling, Ill., to supply our drone-and-queen trap, Swarm-hiver, Bay State reversible hive and other supplies in which we deal except queens and bees. Their advertisement will be found in this issue.

One-piece sections.

We have 2000 number one one-piece sections at the factory of J. M. Kinzie, Rochester, Mich. We will ship them F. O. B. to any address on receipt of six dollars. Address American APICULTURIST, Wenham, Mass.

Bees by mail in winter.

On January 7, we received about a dozen bees by mail from Thos. S. Wallace, Clayton, Ill. We requested Mr. W. to mail the bees in the same kind of a cage the queens were mailed in which were sent Maj. Shallerd of New South Wales. Those sent Maj. S. were received in good condition and so were the bees sent us this winter. The cage had been in our office more than a week before any of the bees died. With the exception of being larger than the one we use the cage and food are the same.

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Notice.

Will each of our subscribers kindly send us on a postal card the address of a few intelligent, reliable beekeepers. A copy of the "API" will be mailed to each one. The names of the "know-it-all" beekeepers are not wanted.

Our price-list may be found on page 56.

[COPYRIGHT.]

THIRTY YEARS AMONG THE BEES.

BY HENRY ALLEY.

QUEEN-REARING.

[*Continued from page* 11, *Vol.* VII.]

Advice to beginners in queen-rearing.

The selection of the mother-bee, etc.

The inexperienced beekeeper who tries his hand at queen-rearing has but a faint idea of the importance of making a proper selection of the queen to be used as a mother of the drones, and the young queens. In the selection of the mother bee lies the secret of success; and in this respect the person who rears queens cannot exercise too much care. The progeny of a beautiful Italian queen may bear all the markings of purity; yet the most essential, most important and desirable qualities may be lacking, namely, hardiness, prolificness and good honey-gathering points. Queens not possessing these qualities, or drones and queens incapable of transmitting such good points to their offspring, are unfit to propagate from and should not be tolerated in the apiary.

How can the beekeeper who has had no experience in queen-rearing decide which are the proper queens to select as suitable mothers from which to rear queens except by actual test? This question not having been fully answered on any previous page, I will try to make it plain, and I am sure it will not be amiss if repeated more than once.

It really seems to me that the novice in bee culture, say one who has kept bees one or two years, should have no trouble in selecting and deciding which are the best honey-gathering colonies in his apiary. The best are known by the great activity about the hive, the large number of bees in any particular colony, and by the largest number of sections filled by any given colony. Colonies having inferior queens, though the hive be crowded with bees, do not always have good queens. Such a queen has the good point of being prolific, yet if her progeny are poor honey-gatherers, she should be rejected as a breeding-queen.

It seems to me that it would be a waste of time, and money, for any one to rear queens from a mother whose colony gave no surplus honey in a good season, while all the other colonies in the same apiary had stored and filled a large number of sections. The best treatment of a non-working colony is to change the queen for a good one as soon as possible.

By always selecting from the best colonies for breeding purposes, there cannot be any inferior stocks in the apiary at any season of the year.

Effect of rearing queens from an inferior mother.

Now let us see how it works if an inferior queen is used, either for a queen or as a drone mother. We will start with a poor queen, say a queen whose colony has never proved to be first-class honey-gatherers and perhaps has never cast a swarm. The offspring from such a mother, either her drones or queens, will be inferior to the original. This is the natural result in all cases in breeding bees, where honey-gathering and other desirable qualities are sacrificed to color. Each succeeding generation will be inferior to the previous one, until the third or fourth is reached, when a majority of the young queens, though promptly fertilized, will produce dwarfed drones reared in worker-bee cells. The vitality of the queens will have been

completely exhausted by the improper selection of the mother bee and by in-breeding.

In-and-in breeding, if persisted in to preserve the beauty of the Italians, which is now being practised by some queen-breeders, will produce the same results as improper selection of the breeding queens.

No intelligent person would ever think of raising a colt from an old broken-down mother, or in raising any kind of an animal from any but the hardiest and best blood and stock in all respects. Why should not the same rules and principles apply in propagating queen bees? One may cross to any extent the different races and strains of bees, yet the coming bee will never be brought out if the laws of reproduction are disregarded. The helter-skelter breeding of queens, as now practised by so many dealers in queens, will, sooner or later, ruin an apiary.

How to produce best results in rearing queens.

A constant watch should ever be kept by the bee master to determine which of the colonies are the best; that is, which colonies are doing the best in gathering and storing honey. If there are one hundred colonies in the apiary and twenty-five of the number are doing better than the other seventy-five, just mark those colonies and watch for results. The next move should be to select the best from those selected as the best. In this way the best results would surely follow, provided all the queens are reared from selected mothers and fertilized by the drones reared in the selected colonies. This method should be practised continually year after year, until perfection has been reached.

It is an easy matter to destroy the drones reared in any colony by using a drone-trap and only those drones most desirable should be tolerated in the apiary at any time. The colony that has a poor queen is usually the one that has the most drones. The importance of destroying such drones will be better appreciated when the fact is considered that while there is but one queen to a colony there may be drones enough in the inferior colony to fertilize every young queen in the apiary. By destroying such drones before any have had a chance to fly will certainly prevent all danger of their transmitting any bad blood to young queens.

All inferior queens should be superseded and replaced by those reared in the best and most prosperous colonies and from the best queens. If a colony that wintered fairly well is not ready early in the season to work, or ready to do so within a few days after the other colonies have commenced to carry pollen and honey, there is usually something wrong with the queen, and she should receive prompt attention soon after the fact of her condition is known. Supersede all such queens as soon as possible.

Nature's ways of rearing queens.—Artificial methods, etc.

Every beekeeper who has read a work upon modern bee culture, and especially one of the treaties upon queen-rearing, must be familiar with nature's method of rearing queens. All have been taught the way nature has provided for the propagation of the honey bee; and all have been taught that not as good queens can be reared by artificial methods as can be reared under the swarming impulse. Very few people believe or are willing to admit that better queens can be reared by what are called artificial means than are reared in nature's way; that is, queens reared at swarming time.

Is the reader aware of the fact that there is but one way to rear queens, and that is *nature's* way at all times? I know that bees are not expected to drive their queens out of the hive for the purpose of amusing themselves in rearing other queens; yet it is a well-known fact that bees do supersede their queens and that queens often die after the queen-rearing season is over, and

that other queens are reared to fill their places. Are not those queens reared according to nature's ways? Why should not those queens reared under such circumstances be equal to those reared when the bees are gathering honey? It matters not what method is used in rearing queens, it is nature's way every time; there is no other way. So long as there is a large colony of young bees and plenty of honey and pollen present, nature's way is followed in every case.

I am free to admit that, as a rule, it is rather difficult to improve upon nature; yet the intelligent and skilful man has beaten nature in many instances. I think I can show that better queen bees can be reared by what is called the artificial method than is usually reared under the swarming impulse. Let us see about it.

I once had several colonies of Albino bees. Each colony had a queen reared at swarming-time. These colonies were as strong as any colonies I ever saw. The hives were crowded with bees and some immense swarms came from them. These bees did not have sufficient ambition to get a living while other colonies in the same apiary were storing honey in sections. Well, these bees built cells and swarmed even more than those colonies that were storing honey in the sections and those that had all the desirable points of excellence bees should possess.

I state the above merely to illustrate the fact that when bees are left to work in accordance with their natural instincts that there is little or no improvement made in their condition. It will be seen that an inferior race or strain of bees will construct queen cells, swarm and pursue the same course as the most vigorous hive of bees. Now, what course must the bee master pursue to improve his apiary, when his bees are no better than the Albinos here spoken of? He should simply supersede the worthless queens and replace them by those reared in the best colonies in the apiary.

The practical and thoughtful bee-keeper does not rear queens from the inferior mothers or colonies in his apiary. By adopting the proper methods and following well-known and thoroughly tested methods for rearing queens, there is no doubt that much better queens can be reared by the forced methods than are produced generally under the swarming impulse.

To those persons who assert that no improvement can be made upon nature, let me call attention to what the intelligence and perseverance of man has accomplished in the great production of the innumerable varieties of fruit we have; and I might mention thousands of other things which the skill of man has improved. Where can any natural fruit be found that will equal that produced by cultivation?

Old methods of queen rearing. The people who practised them.

Notwithstanding the great advancement made in the methods of rearing queens, there may be found a few bee-keepers who still practise the old ways. Such people find it hard to get out of the old ruts. This same class of bee-keepers will be found using two-pound boxes for surplus honey, narrow top-bar brood-frames and ten frames to the brood nest, etc. These are the fellows who know it all. Such people never admit that other beekeepers can be found who know as much about bee culture as themselves. I need not say, they are not the people to whom to apply for information about bees; they know too much. They will tell you that these new-fangled ways amount to nothing. The good old way is good enough for them; in that opinion they are correct. If asked if they read the bee-papers, the answer will be, "No." What do the bee-papers amount to? When I come across one of those fellows I drop him about as suddenly as I would drop a piece of red-hot iron. There are plenty of people in the world who can see no good in the inventions and advancement made by their neighbors. Let them alone.

Something about the new methods of rearing queens.

Mr. G. M. Doolittle has given one of the latest methods for rearing queens. With the exception of one thing he recommends in his work, I must say that the Doolittle plan of queen-rearing is an excellent one. The plan of starting cell-cups as advised by Mr. D. is too difficult and too fussy for the inexperienced to practise. I cannot recommend that part of his method as there are other ways for starting cell-cups which are more in accordance "with nature's ways." With this exception I do not see that the Doolittle method of queen-rearing differs materially from those which have been practised for years by several other well-known apiarists. However, if any one is intending to rear queens, he should by all means have a copy of Mr. Doolittle's book, as it contains a large amount of valuable information upon the subject of which it treats.

I do not think any great advancement can be or has been made in the methods of queen-rearing by transplanting an egg or larva from a natural cell to an artificial cell-cup. The work of starting cell-cups is so much better and nicely done by the bees, than it can be done by even the most skilful beekeeper, I had rather they would do such work for me. In this respect I think no one can claim that there is any improvement upon nature's way of rearing queens.

The artificial cell-cup; method of cell-building.

It requires no little amount of ingenuity and tact, as well as experience, to make the cell-cups and to transfer the larva or eggs to them so that the bees will not destroy all. While the artificial cell-cup method is not original with Mr. D., there is no good reason why Mr. Doolittle should not have the credit of putting such a method to the best practical use. Nevertheless, Mr. Doolittle's method is not the method of rearing queens that comes the nearest to nature's way. On the contrary, it is the farthest from nature's way of any plan yet made public. It is claimed that bees do sometimes transfer an egg from one cell to another and then rear a queen from that particular egg. I have never yet seen anything that would tend to convince me that such is the fact, as I have seen nothing of the kind in my experience.

Some old experiments.

Some twenty years ago I practised cutting comb into single cells for the bees to build queen cells from. After practising that plan for a while, I thought the queens reared from those cells were not as good as those queens produced in rows upon one long strip of comb, as illustrated in Fig. 7. The last three seasons I have renewed those experiments with far better results. The cells built by the first experiments were by queenless bees; those built the last two years were by bees that had a fertile queen in the hive all the time cell-building was going on. That may have made the difference, though I will not say that it had anything to do with the quality of the queens.

After cutting the comb into single-cells, each one was dipped in hot beeswax and rosin and fastened to the bottom of a comb in a full frame. About two inches of the comb in the frame was cut out to make room for the queen cells. By this plan I never had any trouble in getting a queen cell made to each egg placed in the hive whose bees had no queen. After the cells are started they should be given to full colonies having fertile queens as advised on another page.

After the first day's work upon the cell-cups, the little larva could be seen imbedded in quite a quantity of jelly food. No royal jelly was used except what was placed in the cells by the bees.

This is, as is well-known, the only food upon which the queen subsists from the egg to the mature queen. After the queen emerges from the cell she is fed upon honey the same as any of the bees.

Mr. Doolittle uses a larva for starting each queen cell. This method has always been condemned by all, or nearly all experienced beekeepers. By the arti-

ficial cup method it is actually necessary to use a larva for a queen-cell, as an egg would not stay in a cell if placed there; and, again, the bees would be pretty sure to remove it, when under the same circumstances they would not molest a larva, but at once nurse it as they would had they started the cell themselves. I never have used a larva over a few hours old for starting cell-cups. This is nearer nature's way.

The different methods for starting cell-cups.

The intelligent beekeeper it seems to me will not be long in deciding which of the methods here described is the best, most practical, and more in accordance with nature's way for rearing queens. Why fuss and bother to make artificial cell-cups, transfer jelly and worker larva, when the bees can be so easily induced to do all such work and so much better, neater and exactly in accordance with nature?

In my experience the last thirty years I have found that the less there is of artificial about any of the operations connected with beekeeping, the more successful I have been. To follow nature's ways as closely as possible has been my aim.

Comb foundation has been called artificial comb, but there is nothing artificial about it when made of pure beeswax.

I think I have shown that there is not the least advantage in starting queens by first forming artificial cell-cups. As long as there is not the least difficulty in getting bees to start all the cell-cups needed in the natural way, I see no good reason why one should resort to artificial methods to get them. Yet if anyone prefers to rear queens in that way, there can be no serious objection to it. We advise all to adopt the best methods for managing the apiary under all conditions. The methods that have stood the test of years, and have proved to be the most practical, are the ones for the beginner to follow.

I have given two plans for having queen-cells built in full colonies while a fertile queen still has the full freedom of the combs in the brood-chamber. The method for the novice to adopt is the one where a queen-excluder is used between the upper and under hive. The advantages derived from this plan are two fold. First, the queen is kept where she is constantly depositing eggs, while the bees are hatching rapidly in the upper-story and at the rate of nearly fifteen hundred per day, thus continually adding fresh nurse bees to the colony. When it is known that it is the *young* bees (those from six days to three weeks old that do all the labor inside the hive) the advantages of this method of queen-rearing can be appreciated by experienced beekeepers.

To whom belongs the credit of this method of rearing queens.

It is not an easy matter to decide who was first to give the public the method of rearing queens above a queen-excluder while a fertile queen still held possession of the combs in the main, or proper brood chamber. Several parties claim the credit of this discovery; yet as nearly all who think they were the originators of that best of all methods gave it to the public on or about the same time, no particular person can rightfully claim the credit of it. Dr. G. L. Tinker, G. M. Doolittle and another man whose name I have forgotten, and myself, all unknown to each other were experimenting upon this method, and all gave it to the public in the spring of 1889. None of the above parties, however, claim any credit for rearing queens in the brood-chamber and having queen cells built upon the same combs while a fertile queen still had the freedom of the entire brood-chamber. Until some one comes forward to dispute my claim, I shall continue to claim the credit of being the originator of this method.

Something about those who make advancement in bee culture.

There are so few of those people who keep bees that have ever made any ad-

vancement in the way of bee fixtures that it is only a simple act of justice to give all the credit possible to those enterprising and progressive beekeepers who have spent their time and money in trying to invent something that might prove of value to the beekeeping public and make bee-culture more profitable and successful to all engaged in this most interesting branch of industry.

Patents on bee fixtures.

No one has ever advanced any good reason why those who have spent much of their time in making improvements in bee furniture should not have their labors rewarded by a patent claim. Merely saying "I do not believe in patents" amounts to nothing so far as an argument against patents is concerned. When any one can show that a person has no right to control the product of his brain and labor, then it may be worth while to argue the question.

Some claim that patented articles are not needed in the apiary. Well, we can get along without them. Let us begin to cast them out and see how well it works.

As the Langstroth movable-comb hive was the first patented hive, let that go first. Then comes the bellows-smokers, foundation mills and presses, etc. Where are we now? Got back to the old, box-hive system with surplus honey-boxes that hold ten pounds, and so on. Now we will make fire wood of drone-and-queen traps and swarm-hivers. We will climb into high trees and continue to run the risk of breaking our necks or see the loss of bees when a swarm issues; and stand the loss of a thousand other things not worth mentioning here. Well, who cares to slide back from the condition of beekeeping of the present day to what beekeeping was thirty-five years ago? The old fogy, of course, and I might include all those who do not read the bee-papers, or when they do read them throw them down and say "there is nothing new in them."

Did the reader ever entertain the idea that in thirty years from this time there is likely to be as great an improvement in beekeeping as there has been in the past thirty years? Let the younger beekeepers mark the prediction. It will surely be verified.

[*To be continued.*]

Correspondence.

Races of Bees.

W. P. Henderson.

The Italian bee, since its introduction into the United States, is frequently called the yellow race to distinguish it from our black or brown variety.

Of the yellow race, as you are aware, we have several varieties imported since the Italians, viz.: Cyprian, Syrian or Holy Land and Egyptian, each having its peculiar markings, which to a practised eye are easily distinguished from the others. They are not yellow all over the body as are some butterflies, but only partly colored; the first three rings of the abdomen next the thorax being yellow: a deep yellow in the Italians, and a pale or orange yellow in the Syrians, the bodies of the Italians covered with yellow, and those of the Syrians with white hairs—the last three rings being dark in both varieties and covered with yellow and white hairs respectively. The white hairs at the intersection of each segment in the Syrians are so thick as to have the appearance of a white band.

The characteristics of each are as different as their markings.

Dzierzon, who first introduced the Italian bee into Germany, in his "Rational Beekeeping," says of the workers of that variety; "the first two rings, or rather two and a half are of an orange color, looking like a yellow band."

Queens, whose worker progeny show only two or two and a half yellow

bands, would with us at this day be regarded as suspicious of having a dash of black blood in them.

By careful selection in breeding, worker bees have been produced in the United States having four and even five yellow bands; and those not showing three bands and of a uniform shade being regarded as hybrids.

Aristotle mentions several varieties of bees and frequently alludes to the *yellow* race—not partly colored, but yellow.

Varro, citing *Menocrates*, tells us of three kinds of bees: "one black, a second red, and a third parti-colored, which he recommends as the best."

When he says *red*, may he not be understood as meaning yellow. And when he says parti-colored (party he has it) is it not the Egyptian, Syrian or Italian, or perhaps the Cyprian?

The Italians in gaining one or two yellow bands, as stated above, may they not be descendants of a perfectly yellow race, that had an existence at some period in the world's history and by coupling with the blacks, lost part of their coloring?

In Purchase's work, "A Heater of Political Flying Insects," he gives us a fable taken from Nat. Com. Mythology, "that all bees were at first of an iron color, but a swarm for feeding of *Jupiter*, had this reward bestowed upon them, to be changed into a golden color.

Murfreesboro, Tenn., Dec 20, 1889.

Encouragements. Honey market improving.

Geo. F. Robbins.

Friend Alley: In the May number, I think it was, of the Apiculturist of 1886, I had an article upon the improvement of the honey market. In that essay I expressed the view that the low prices that had then prevailed for some months might not be an unmixed evil that the increased consumption of honey made possible by the cheapness would create a future demand for it. My prediction has come true in this region. In 1886 I had only one considerable competitor in the Springfield market; this year I have half a dozen. Yet three years ago I sold honey by the hundred at 10 cents per lb. This year I have been getting 13 cts. In that year less than half the grocers in the city would handle honey. Now a grocer's stock is not complete without it. I am confident that the seemingly ruinous prices induced many to use it that otherwise would not have done so, and thus created a want for honey that, with a much greater supply, yet takes it at a higher price. I am not sure but the very errors as I supposed of some of my competitors has had a share in bringing about the phenomenal growth of the honey market. Some of them went to running honey early in the summer at 10 cents per section which as they explained in our local convention was in fact 11 cents, as the sections all underweighed. These sections the merchants sold at from 12½ to 15 cts. per lb. or box. But by the last of September this ten-cent honey was all gone and those who were holding their honey for higher prices have had no difficulty in getting 12½ cts. It begins to look now as though the supply would be exhausted before the winter is over.

But another item has contributed to help prices. That is by keeping honey off of the city markets. In the article to which I have referred, I urged the importance of developing the honey market. That is one of my hobbies. Begin at home and cultivate your territory outward—sell to consumers as much as you can, is my rule. I aim to keep enough to supply my home trade. Others in the vicinity of our central market, Springfield, are doing likewise to some extent. The consequence is that while building up a trade at home, we are keeping that much off of our Springfield market.

That cannot but help have an uplifting effect upon prices there. How much better this is than to ship to Chicago, pay transportation charges, throw in the shipping cases and get 13 to 15 cts. per lb. I believe we have not reached the end yet. The production and consumption alike of honey are going to increase and prices rule steadier than they have in the past.

Judging by the reports I get, the prices we receive here will be thought low in some places; but from the market reports should say that not many who ship their honey off to commission merchants ever realize that much even though the consumer has to pay more. I get a little better price, by the way, for the considerable quantity which I retail myself.

Where to keep honey fumigating.

The Dec. API is a splendid issue, but among its good things I was surprised to see one advised (p. 180) to keep his honey in a cool place, joined with the statement that the fumes of sulphur will not kill moth worms. If I do not habitually destroy moth worms by brimstoning, it is very strange what does it. I have my honey packed in boxes in the honey house. I do not fill them so full but what I can put a block or two on top the sections and set a frying pan or similar vessel with a layer of ashes and some coals of fire on them, and far enough below the lid not to burn the wood. I put small brimstone lumps on the coals, and shut down the lid. I have sometimes delayed until worms three-fourths of an inch long had made their appearance before fumigating, and on examination afterwards found them blackened and shrivelled. I do not generally wait that long however. Moths usually begin to hatch in from ten to fourteen days after honey is taken off. To fumigate them and repeat the operation about ten days later always fixed them for me. I keep my honey house fairly roasting in hot weather and I attribute the popularity of my honey near home to that fact. Honey ripens better in such a room than anywhere else.

Mechanicsville, Ill., Jan. 1, 1890.

Bees locating on a tree—the honey season—a good queen, etc., etc.

D. B. SCOTT.

I have just been reading your experience in transferring a swarm of bees from a tree with combs attached. It reminds me of some years ago my father found a swarm on a cherry tree that had been there long enough to build combs; the centre one was about a foot long. There was brood in all stages, some honey and lots of bees. I transferred them to a frame-hive and they worked finely for two or three weeks, and by that time there were more worms than bees. The miller had a fair chance to fill the combs with eggs during the cool nights as the bees contracted to keep themselves warm. A neighbor of mine found a large lot of combs on the corner of a fence in the woods in cold weather, but the bees were gone.

The honey season was very poor with us, making four poor seasons in succession, but our bees are in splendid condition for winter.

A good queen.

The queen you sent me is a dandy, and I take pride in showing her to all beekeepers that come here as I can handle them without smoke or veil. I have raised several queens from her and all but two have become purely mated and it is hard to tell which is the old one.

Your shipping-and-introducing cage works like a charm as I have used it in several instances without a failure.

Ovid Centre, N. Y.

An experiment.

J. G. ALEXANDER.

I take this opportunity of relating what I consider a rather curious experience. You will remember perhaps that I got a queen from you last June, for a colony which had dwindled down to almost nothing; in fact when the queen arrived I do not believe there were over two hundred bees left: well, I put a couple of frames well filled with brood into the hives; together with the adhering young bees (which I had been informed *would not* leave the brood) hoping that they would soon hatch out; but to my surprise and disappointment, when I peeped into the hive the next evening I found that the young bees on the combs which I had put in, had not only absconded themselves but had apparently taken the remnant of the old colony along with them. The new queen remained, however, and I determined to try an experiment; I remembered that Mr. Alley hatched queens artificially, and I said to myself "why can I not hatch workers in a similar manner?" I tried it, and the result proved that my reasoning was correct.

The weather at the time was very warm, so I increased the heat of the hive, at random of course; by putting in, on top of the frames, some hair felt I happened to have, and on top of that, so as to completely fill the cap of the hive, a number of layers of woolen carpet: I let it rest here, as I had done all I could, in my ignorance of the science which governed the matter. I had little hope of success, as I thought it hardly probable that the heat would be *just* right; I was afraid it would be too intense, so imagine my surprise a week after, when I came home one day and my wife told me that the hive was full of bees, she had that forenoon uncovered it and seen them; I hastened out to satisfy myself and found that it was so indeed; by this time too, the queen was working, and not a great while after I found lots of yellow bees mixed with the black ones; the colony "grew apace" and last fall was of quite a respectable size, but without any stores to speak of, so I had to feed them for winter and hope they will pull through.

The queen is a fine one, and reflects great credit on your skill in queen raising.

Worcester, Mass., Jan. 20, 1890.

Our friend is wrong in supposing we "hatch" queens in the way he did the worker bees. When we use the queen nursery, we place it in the centre of a brood-nest of a powerful colony of bees. Thus the queen cells have the benefit of the same temperature as the sealed brood. - ED.

Success in introducing virgin queens.

The fertile queen sent me from the Bay State Apiary and received July 31, 1889, is in fine condition and has a strong colony and plenty of supplies for winter, besides giving me a surplus from fall crop of aster honey, fifty-four pounds extracted, having strengthened her with brood from other colonies. The bees seem somewhat mixed in varieties of colors, but those that are not hard to select of her own bees are a beautiful bright color.

The early part of the season, 1889, here, as reported by beekeepers at many other points, was almost a total failure, owing to the cold, rainy and damp weather accompanied with frequent high winds; but the fall harvest of wild aster, beginning about the 9th of September (my bees about starved out and I was preparing to feed for winter supplies) was copious and continued up to Oct. 12, when we had heavy frosts which closed the honey flow for the season of 1889, giving me a surplus of nine hundred pounds of comb and extracted honey from eighteen colonies.

Why is it that I have seen no reports of the wild aster as a honey plant? I know of no other plant that exceeds it in bountiful supply of se-

cretion. Tell us of it and oblige your readers.

Another report regarding virgin queens.

The virgin queen presented me by Dr. Mollyneaux was placed August 2, 1889, in a nucleus made by taking *four frames* of bees and honey from an extracting top, hence there was no brood of any kind in the combs. The cage containing queen placed at once in a frame and the bees permitted to cut her out. August 5th gave her a frame of *brood*. August 7th found the queen released and O. K. From that time on she was given a frame of brood occasionally, till Aug. 24 I put a small hybrid swarm in, and put on extracting top of ten frames, combs fully drawn out. September 12th extracted from this colony forty pounds, five ounces, and will extract about ten pounds more from her. She has proven to be purely fertilized, and her bees are docile and fine looking.

PROF. G. W. FELTON.

MR. H. ALLEY:—The above is a statement handed me by Prof. George W. Felton, to whom I presented one of the three virgin queens sent me from the "Bay State Apiary," in July last and was reared on the 30th of July, 1889. Professor Felton is a near neighbor of mine. I have seen his bees and handled them; they are just what he states them to be, all O. K., and the queen is beautiful and large, bees fine and he is delighted. I handed him the October (1889) API and he says he wants a daughter from that one-hundred-dollar queen. Send one of those queens to your humble servant.

R. A. MOLLYNEAUX.

New Richmond, Ohio.

We may have to acknowledge that virgin queens may be bought by beekeepers and introduced successfully. The above will interest those beekeepers who desire to test the matter.—ED.]

Wide and thick top-bars for brood-frames.

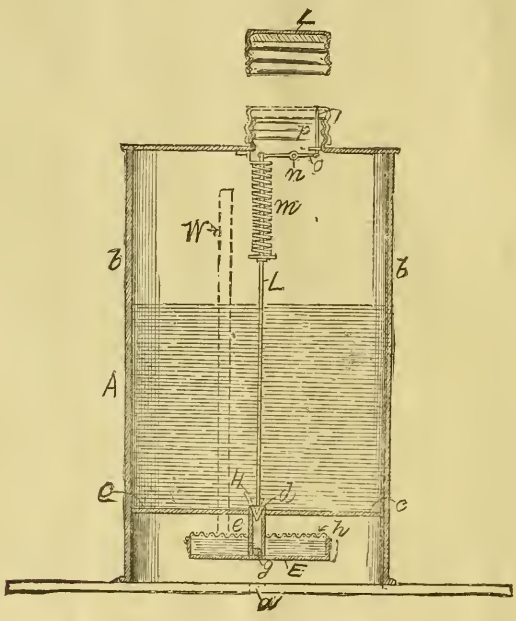
MR. ALLEY: Do you think the thickness of top-bars of brood-frames have something to do in preventing brace combs, or is it the width of the top-bar or both features? MRS. J. J. MORY.

We are glad to see this subject brought up for discussion. Our readers who receive *Gleanings in Bee Culture*, have probably read a good deal of late in that publication upon this same subject. The readers of the API and those who have been acquainted with our writings the past quarter of a century, must be familiar with our opinion of the proper width of top-bars of brood-frames. For more than twenty-five years we have urged beekeepers to discard the narrow top-bar and use a wide one. We now view with pride and satisfaction the fact that the time is not far distant when the narrow top-bar must go. I need not tell the reader the disadvantages of the narrow bar. All who have used them one good honey season know well what a nuisance they are in the apiary. As there are hundreds of beekeepers who know nothing about the good points of a wide top-bar, I will mention some of them. The first Langstroth hive I ever saw or used had top-bars one inch and an eighth wide. Ten of these frames filled a brood-chamber 14⅛ inches wide. That would allow just a bee-space between the top-bars. As is well known, all Langstroth hives at that early date had honey-boards and the space between the top of frames and honey-board was not over ¼ of an inch. Bees in hives thus arranged would build no brace combs above the top-bar, but more or less such combs would be built between the frames just below the top-bar and this was about as big a nuisance as brace combs above the top-bar. However, I was not long in discovering a remedy for that thing. The old style top-bar L. frame had a V-shaped piece of wood nailed to the underside as a guide for the bees to build the combs directly within the frames. We had no comb foundation in those days, you know. Instead of foundation which all beekeepers now use in brood-frames we used old comb cut in strips, which was fastened to the underside of the top-bar with hot beeswax and rosin. When well fastened the comb was cut down to V-shape with a sharp and quite warm knife. With this arrangement we did not need the V-shaped top-bar, as the old comb could not be fastened to the wood properly. To overcome the difficulty, we had some frames made with a thick top-bar. The frame was made as wide on the under side as on the top side. This had the effect to prevent brace combs not only over the top of the frames, but between them as well. The Langstroth frame with this improvement is perfection. We have hundreds of them in use in the Bay State Apiary.

Anyone wanting a sample will receive one by mail by sending twelve cents in stamps to this office.—ED. API.]

A new bee-feeder.

F. E. Merriman of Boston has taken out a patent on a bee-feeder which seems to hit the case exactly. It consists of a can capable of holding some two quarts of honey or syrup, the flow of which to the bees is entirely controlled by the bees; that is, as they consume the food the supply is maintained, but if for any reason none is used by the bees, the flow ceases. The can may be placed on the honey-board, through which a hole has been made for the ingress of the bees, and allowed to constantly remain on there, or at the option of the apiarist, the food being supplied through an opening on the top of the "feeder." The bottom of the feeder is placed some one and one-half of an inch from the end of the can, to which is fastened a shallow feed-cup, covered with coarse wire netting, through which the bees take up the feed, and which prevents them from being destroyed by contact therewith. The feed-cup will accommodate two or three hundred bees at a time, whereby great activity may be induced in a swarm. There is no liability of the honey or syrup running down into the hive and among the bees, and when required for use, as the supply in the can is kept up without its being removed, the bees are in no way disturbed or annoyed. The feeder is placed directly over the cluster, and in the coldest weather, that section which the bees occupy while obtaining the food, is equally as warm as the warmest part of the hive.



Merriman's Bee-feeder.

For sale at the office of the API.

Dr. G. L. Tinker's opinion of the Bee-keepers' Directory.

The New Directory is not only valuable for the large list of beekeepers and their post office address, but for the many valuable hints and the general management of the apiary.

Honey-boards.

JAMES HEDDON.

FRIEND ALLEY:—I see the APICULTURIST still continues to be a good paper. Some way or other it is a live paper; things in it that are wide awake and directly relating to success. Of all the articles in your issue of Feb. 1st, which seem to me to need controverting, that is, something presented on the other side of the question, is the one on honey-boards by our old friend Dr. Tinker. I do not care to write at any great length, but I believe it would be well to get ourselves squarely on record, and then when the near future determines the right from the wrong, it will be of value to beekeepers to know who is right and who is not. Will you allow me to emphasize, as I understand it, just what brother Tinker does claim.

First, he says the break-joint principle in honey-boards, has had its day. I say that it is not fairly introduced; that its wonderful advantages are only just beginning to be learned by practical honey producers. I contend as heretofore that the break-joint principle has a *tendency* to keep the queen below; nothing certain about it, however, but so far as the prevention of burr-combs is concerned, it is just about an absolute preventive of their being built above the honey-board and next the surplus receptacles. A year will soon roll around, and I would ask your intelligent readers to test it by pushing the honey-board sidewise as far as it can be made to go and not slip down farther than the edge of the hive on one side. The passage-ways will then be continuous, that is the spaces between the slats of the honey-board will be made to come directly over the spaces between the brood-frames below. Now, you will have a continuous passage-way, not continuous passage ways such as the doctor used to strongly advocate and in this article seems to have returned to his first love, but a direct vertical passage way, one opening directly over the other; nothing between but spaces and plenty of burr-combs, for whoever makes this experiment, as we have done one hundred times, will find that there will be quite a number of annoying burr-combs built between the top surface of the honey-board and the sections above.

The Doctor's second statement is that in his experience the break-joint principle in honey-boards proves no bar to the extension of burr-combs in any case. I wish you would put this and the former declaration of the Doctor's in italics. I want these statements remembered. I think it is well that beekeepers should know and remember from time to time what kind of experiments and statements leading beekeepers are making. Remember that the Doctor says that there are less burr-combs built (and I suppose he means next to the surplus receptacles for we care but little about brace combs between the bottom of the honey-board and the top of the brood frames; it is to keep them away from the supers, whether for comb or extracted honey, that is of vital importance as you and your readers well know) where the passage ways are continuous than where they are broken by the break-joint principle.

Isn't it strange that none of us should ever have discovered this interference with the perception of light at the entronce of the hive by the bees in the upper part of the hive? When will the Doctor cease to spring new and unheard theories upon us?

Why, bless his soul, there are very many kinds of hives with entrances in such a shape that the light hardly enters the brood-chamber at all, and I supposed that if any difference. there was an advantage in keeping everything dark. Bees want no light to work by. It has been asserted by the greatest experimenters of old, and I supposed it was an admitted fact

that bees work much better where the light is completely shut off, and the Doctor's new theory that the bees could not find their way readily from the upper stories will certainly meet the reason of most honey producers as something extremely new and strange. Must we have windows in each story of our bee-hives? Oh! Doctor, Doctor, what will you spring on us next? Bees lost in darkness of the upper stories of their hives; light all shut off by break-joint honey-boards; poor fellows bumping their heads, running wildly in every direction like the inhabitants of Pompeii and Herculaneum at the time of the eruption of Mount Vesuvius so famous in history. Poor little fellows haven't got light enough to find their way out around the wicked break-joint honey-board, not on cloudy days, anyway. This is a death blow to the Manum hive, whose entrance allows scarcely any light to get in. However, friend Manum seems to know just how to get a good big yield of honey even if lack of light in his totally darkened hive keeps most of his workers dodging around, bumping their heads for several days before they can find the entrance, consuming large quantities of honey all this time. I am sorry to note that Dr. Tinker has again given up the bee-space. Now I suppose he will not offer to the public any more of my break-joint, bee-space honey-boards. Hereafter he will use no break-joint principle nor bee-spaces, setting his surplus arrangement flatly and smoothly upon the brood frames, securing continuous passages for the bees. Honestly, we believe this to be a very bad arrangement, but we may be mistaken. We hope bee-keepers will make the tests as above referred to and report, and if the Doctor is found to be right and I am wrong, I shall be pleased to admit it. Am not sorry that in the February and March numbers of the APICULTURIST we both went on record. I certainly shall not be sorry if it turns out that the Doctor is radically wrong and I am right, as I believe it will.

Dowagiac, Mich., Feb. 13, 1890.

Dr. Tinker, as well as Mr. Heddon, is wrong in using any honey-board at all between the sections and top of brood frames. Honey-boards when thus used are as big a nuisance in the apiary as burr-combs. Narrow top-bars and bee-spaces over one-fourth inch(I believe Mr. Heddon uses a bee-space of three-eighths inch) have been the cause of a good deal of profanity in years past and still will be the cause of more as long as such nuisances are allowed to exist in the apiary.

Make kindling-wood of all hives in which bees can build burr-combs and those that cannot be used without a honey-board between the brood-nest and sections.

Try the Bay State Hive, brother Heddon; it has none of the imperfection than anyone can reasonably quarrel over.

Once was the time when honey-boards seemed to be a necessity, but they have had their day the same as box hives and many other things that were used in the apiary.

Swarm-hivers.

Not since the invention of the Langstroth hive has there been such a flurry of excitement, or so much interest shown in an invention as the advent of the Swarm-hiver which we claim the invention of and were the first to describe in public print. I know of no recent invention of a bee-fixture that has caused so much lying, or one that caused so many jealous and envious people to make such an unfortunate exhibition of their ill dispositions. No sooner had I described the Swarmer when up jump several parties not only to claim the invention, but who declared I should not succeed in getting the device patented. Each one who claims the invention stated that they had *not made their swarmer a success* and had laid them one side for future experiment; and each one also stated that *where I use perforated metal* to connect the two hives they used *screen wire*. Yet these people claim the invention of my Swarm-hiver. No doubt these kind-hearted friends have an idea that I am one of those fellows

willing to lie down and die when kindly requested to do so.

However, I would be ungrateful if I did not publicly thank all those parties for putting themselves on record as to the time they invented, or claim to have invented, their Swarmers *that did not work*. By hanging them up in out-of-the-way places where no human eye could see them is sufficient evidence of their worthlessness. I shall not claim that I have had the Swarmer in use over *twenty-nine years*, yet I think no one is likely to antedate my claim.

There is one thing that no one will dispute, and that is the fact that I first described and brought to the public notice the only practical Swarm-hiver, and I do not believe there are many people who believe I am not the original inventor of the same.

To show how bad some people feel about the invention of the Swarmer, I clip the following quotation from the *Canadian Bee Journal*.

"Well, I've seen Henry Alley's patent 'catch-em-all-alive,' 'never-lost-a-swarm' hive. That is, I've seen an engraving of it. It's just about what I expected, and I just shouldn't wonder if he gets upset in getting his patent. That scheme (the principle of it I mean) is as old as the hills. A leading Canadian beekeeper, when looking at it a few days ago, remarked that he had tried the plan almost twenty years ago. It looks pretty on paper but don't work out just that smoothly. I wish it would with all my heart. —*Observer*."

There! dear reader, do you blame the fellow who wrote the above for not placing his name to such an effusion of misrepresentation? The idea that any one ever used the same thing twenty years ago! There are not half a dozen beekeepers in America who do not know that it was not over ten years ago that the first *perforated metal* was introduced into America by D. A. Jones. I cannot find just the words to express my opinion and contempt of a person who wilfully lies about a small matter.

"Observer" is one of those know-it-all beemen; he writes for publication and of course he considers himself one of the big "uns," and yet he is one of those fellows who can see *at-no-sight-at-all* right though any invention, and is able to give an intelligent (?) opinion of how it will work, more especially whether it can be patented or not. Wonderful man he. Those fellows who have had no experience in patents better keep in the background and not expose their ignorance upon such matters. I am able to handle the patent part much better than those parties who are trying to frighten me. I don't frighten worth a cent. So, gents, be ready to put out your money when the proper time comes as we are sure to obtain a patent on the Swarmer.

"Observer" has told us what he knows about Swarmers. Now let me show what a practical and a well-known beekeeper has to say about it.

In the January notes I mentioned a device to be brought out in the APICULTURIST to cause bees when they swarm, to hive themselves. Well, it has appeared, and it is perfectly practicable, too. In fact, after Mr. Alley had mentioned it in connection with his drone-trap, I commenced to study the matter, and had thought out, and described to my family, the identical device now introduced by Mr. Alley. From what I have learned about bees at swarming time, I know it will work, and there is no chance for the bees to abscond unless other swarms are in the air. Of course, if all the hives in an apiary have the swarm-hiver on them, they could or would not leave without a queen. It will require some after manipulation such as removing the swarmers at the right time, cutting out queen cells, etc. It will be a grand thing for the small beekeeper or laboring men, who keep a few colonies to help along, as they will no longer need to be constantly watching them.

The author of the above is C. H. Dibbern of Milan, Ill., and Mr. D. is not ashamed to place his name to any article of which he is the author. Mr. D. has written volumes upon bee matters and probably has more solid knowledge on bee culture to the square inch, than some other person (whose name I cannot call because I don't know it) has to an acre lot.

The Swarmer will live and thrive

in spite of the croakers. All fair-minded people acknowledge its utility, practicability and timely introduction.—HENRY ALLEY.

Query Department.

Ventilating the brood-chamber during the honey harvest.

Question 4. How would it do to make a ventilating hole at the top of the brood-chamber between top of frames and sections for ventilation while the bees are gathering honey? Would not such an arrangement greatly aid the bees in expelling the water from the newly gathered honey, and also make the interior of the hive more comfortable for the bees?

Would not a colony thus treated store more honey than a colony in a hive not ventilated.?

SCIENTIFIC.

Such a ventilator would be of very little use and a most prodigious nuisance.

GEORGE F. ROBBINS.

Such an arrangement with me would stop work in the super. I find that other things being equal, the work goes ahead faster when the super is kept warm, almost hot, night as well as day.

I am not sure I know just what you mean. I have for a number of years followed Adam Grimm, by having the super pushed far enough forward to leave a space of a quarter of an inch at the back end of the hive, over the brood frames. I suspect it is an advantage except in a cool night.

C. C. MILLER.

Such ventilation amounts to but little, as such openings are soon packed with clustering bees. Better give abundant openings at bottom of hives together with some shade from the noonday sun, then your bees will not suffer from heat, nor need you trouble about getting rid of the excess of water in the freshly gathered nectar.

J. A. BUCHANAN.

(*a*). I have never tried it, therefore cannot answer from experience. (*b*). Unless the weather should be extremely warm, do not think it would be any advantage. (*c*). If the weather is cool, day or night, I think it would be a hindrance, rather than a help. Give plenty of downward ventilation and the bees will regulate the other matters. JOSHUA BULL.

If more than a bee-space is left between the top of frames and the sections the bees fill it with brace combs. We always ventilate at the top of the sections but one must use judgment in the amount of ventilation given, it depending on the size of the colony. Of course, bees work better in a hive of the right temperature than in one in which the atmosphere is perfectly stifling.

H. D. DAVIS.

a. I have not tried just such a ventilator but see no objection if regulated by the heat of the season, the size of the colony and amount of nectar gathered.

b. I prefer to give most of my ventilation at the bottom of the hive, unless it be an opening in the front of the hive one-third of the way up the brood chamber.

c. I think not, if the opening at the bottom is enough.

J. L. HUBBARD.

Heavy swarms, hived in hot weather, must, with me, have abundance of ventilation for the first few days. After those few days, in this latitude, I fear much ventilation. I have not seen a half dozen nights, in as many years, during which I should want comb honey ventilated, though during some days, it might seem necessary. I have invariably got the most comb honey from colonies kept warm and tight with quilts and blankets, sometimes removed for a little while at noon, if the weather was hot.

MRS. H. HILLS.

I always ventilate all strong colonies working in sections, at the top, to keep the bees from laying out as well as from swarming; for it will do both, though in some cases it will only delay swarming. I use a thin board (¼ inch thick) cover for the brood-chambers in my winter cases and at the first signs of laying out, I raise the cover at each of the four corners by means of thin wedges, but not high enough to let the bees out. This plan gives all the ventilation desirable at the top, and I think a colony so ventilated will make more honey. DR. G. L. TINKER.

Bees are not so apt to hang in masses on the outside of the hive in hot weather if the hive is properly ventilated. It will do to make a ventilator in the place you suggest but I think you will find it inconvenient. A better way is to block the hive up an inch from the bottom-board and place a thin chip under one end of the hive cover in very hot weather.

A colony thus treated will probably store a little more honey than one not ventilated because the bees work better and not because evaporation is hastened. Any lowering of temperature retards evaporation, especially at night.

Z. T. HAWK.

I presume many beekeepers would answer the above question in the affirmative, but I cannot. My experience says "no" and I find that most old time honey producers who have tried just such things have given them up, and do not use any such ventilating holes now. The method employed by bees to ventilate a hive may perhaps properly be described by the term, "a circuitous current." The cool air passes in one side of the entrance and out at the other, making a circuit within the hive, and any upward holes, while they may not injure the successful working of this current, usually amount to nothing. The

bees cluster in them, and virtually plug them up so far as air passage is concerned. I would advise "Scientific" not to arrange hives in any such manner, believing that he will abandon it if he does.

JAMES HEDDON.

Ventilating holes are a nuisance to me. I do not want but one grand entrance that can be enlarged by blocks of wood as warm weather comes on. If you put ventilators into your hives as you suggest, it would give the bees a better chance to ripen their honey during the day; but that is not the time such work is generally done. Most of the ripening is done at night and unless you have such ventilators closed on chilly nights your bees would leave the sections "quick step." A sort of double sweat blanket of woollen, laid loosely over the sections, with ventilation holes above works much better in aiding the bees to *ripen* their honey. Should say; No, a colony treated as you mention would not store more honey. Hot weather is what the bees like and if there is nectar in the bloom, as large a force would go to the field as from ventilated hives. I am through with ventilating *holes* in both summer and winter management.

E. L. PRATT.

On what part of the globe is Canada?

D. A. Jones, or whoever runs the editorial department of the *Canadian Bee Journal*, says:

"The American bee-papers are full of discussions as to whether thick top-bars are not going to reduce brace-combs and do away with honey-boards."

Mr. Editor of the *C. B. J.*, you are mistaken about *all* the American bee-papers being full of discussions regarding thick top-bars. The APICULTURIST is published in America, that part known as the *United States*, and as we have something to do with the API, can say that no discussion on the subject you mention has been carried on in our paper.

Brother Jones' paper has the following editorial remarks, same issue, the above quotation was taken from: "Our American friends are learning something all the time. I wish we could say the same of some of our Canadian friends. By the way, we were not long in "learning" that the thick, wide top-bar was the practical one to use. We learned it many years before D. A. Jones knew how many legs a bee has. Please do not reckon us among the Americans who are still learning about the proper width and thickness of the top-bar of a brood-frame. Something on this point may be found in this issue.

Now, Brother Jones, we were considerate enough to say that *some* of our, etc., etc. When you again have occasion to speak *sarcastically* of your American friends, please do not take them by the lump.

One more point, Brother Jones, mention of which comes in right here. Speaking editorially of the Swarmer, Bro. Jones says:—

Our foreman used a similar arrangement in 1887, made of perforated metal, but did not have an opportunity of carrying his experiments far enough to warrant us in putting the matter before readers of the C. B. J.

Bosh! Brother Jones, how is it that you always carry your experiments to a failure? In October, 1888, we gave notice that we would give the public a method for rearing queens in full colonies without dequeening the colony, or in any way restricting the queen the entire freedom of the combs. About a month or more later, Brother Jones told the readers of his paper that he had been conducting experiments to accomplish the same results, but as he had not perfected the method he would not give it to the public. We believe it has never been given the public up to this date. It didn't pan out just as expected. Well, we perfected the *Swarmer* before it was given the public and so was our method for rearing queens in full colonies perfected before the public knew about it. We don't go off on the half cock, Brother Jones.

Brother Jones means well, but for some reason never carries his wonderful experiments to success.

However, I must say that in view of his ill success to invent new devices for the benefit of his fellow beekeepers, I do not think any more of him on account of the disagreeable insinuations he makes regarding the inventions of other people who have made the same experiments a success that he (Jones) failed in.

One question Brother Jones: Why

didn't your foreman have an opportunity to carry out his experiments with the Swarmer? Certainly there must have been plenty of bees in your apiary in the years 1887–88 and in 1889.

Relation of the queen breeder to the honey producer.

E. L. PRATT.

The queen-breeder of to-day stands to the honey-producer as the power-furnishing concern stands to the manufacturer. In older times when everything was made by hand there were no machine shops needed nor was there any need of the queen breeder. But now everything is toward centralization of all industries. With labor-saving machinery comes sharp competition on all sides. This calls for improved power.

The honey-producer of to-day does not receive the price for his product that he did in olden times on account of sharp competition in his line of trade. Thus the call for improved power in the engine of the hive (the queen).

On the queen depends the number of working force and on the working force depends the production of honey.

With our present knowledge of queen-rearing we have improved the mother bee to a marked extent and we are not coming to a standstill yet awhile.

We often hear large honey producers say "started with such a number but only such a number were ready for supers." Why this difference in colonies? Ninety-nine cases out of one hundred the difference can be traced to the queens. We often hear of extraordinary yields from particular colonies. Why? On account of a prolific queen with hard-working progeny.

Thousands of reports come in every year of success and failure, all of which are traceable to good or poor stock, barring dearths of nectar in poor seasons. Then we hear of loss in winter, spring dwindling and the like discouraging mishaps that can without doubt be remedied by the queen to a great extent. The supply market has gone down to hard pan. Nothing can be hoped for there.

The queen-breeder should receive all the encouragement possible from the honey-producer for who knows but what a better queen is the honey producer's only salvation from this avalanche of sharp competition encountered on every side. The price of honey will never go up again. We must increase the yield per hive to counteract this fall in price. Come, producers, give us a lift. You need us badly.

Queen cages again.

I have sent away several cages as explained in November API. Those who have reported have pronounced it O. K., giving what suggestions they had to offer, many of which are detailed below. Thanks.

The advantages claimed for this cage are: It is a perfect shipper and introducer, and contains food enough in bulk to last twenty or more days, and remain soft and moist; it can be mailed for one cent; it can be sent with or without wrapping or tying. For my own use I am having a neat little manilla wrapper, with directions for introducing, lines on which to write an address, and my card printed thereon. This cage is so constructed that the bees can at all times make themselves comfortable and so much so that they will often build comb in the cage home during their confinement. If the weather is chilly the confined bees will huddle together in the closed middle apartments where their feed is always accessible and thus stand a much lower temperature than with any other cage. In hot weather, they spread out through the whole cage. You can often hear them fanning fresh air into the apartment through the screen cloth that covers the fresh air hole.

Being closely sealed with a thin

board fastened with wire nails the cage is made perfectly safe in the mails. All this taken together, with its simplicity in both construction and use, has brought forth many words of approval.

If, on pulling the cork preparatory to introducing a queen, the food is found to be nearly consumed a wad of common newspaper can be plugged into the hole with safety, I hope any persons interested in the cage will not hesitate to send for a sample if they wish it. We have gained valuable suggestions before now from novices as well as experts.

Marlboro, Mass.

A good queen.

Cedar Rapids, Iowa.

MR. ALLEY: Please send me prices of your queens. One of the best I ever had came from your apiary. H. O. MCELHANY.

Just as long as we keep bees.

Hannerston, New Jersey.

AM. API: Just as long as we keep bees please consider us a subscriber. The API is the best yet. Long may it live.

HARKER BROTHERS.

Best queen in the apiary.

Frankenmuth, Mich.

MR. ALLEY: Find 75 cents for API another year. I like your paper better than any bee-paper I have seen. The queen I bought of you is the best in my apiary. JOHN M. STERN.

Untiring workers.

Attleboro', Mass.

MR. ALLEY: I shall want some more of your queens. The three I got of you last summer did splendidly; far exceeding my most sanguine expectations. They produced the handsomest, quietest and most untiring workers I ever saw. If there is a better strain or race of bees, I would like to know about them.

L. G. DUNHAM.

Prospect that bees will winter well.

Bees are having a fine flight, to day, Dec. 15. This seems almost an assurance that they will winter safely. Mine are all packed on summer stands, and every colony extremely heavy, in both bees and stores. I hope my Carniolan queen is safe. Introduced, by placing her on cards of hatching brood, for some days, then gradually allowing more bees to enter, by slightly moving the wire-cloth, which separated them. Weather was too cool to look for her afterwards.

MRS. H. HILLS.

PRICES OF SUPPLIES

—AT THE—

BAY STATE APIARY,

WENHAM, MASS.

Bee-Hives.

We offer only the Bay State hive for sale.

One hive in the flat,	$ 3.00
Six hives " " "	15.00
Twelve " " " "	27.00

All parts of the Hive are included in the above, frames, sections and all but paint and nails.

Sections.

One-piece sections per	1,000	4.50
" " "	500	2.50
" " " "	100	.60

Langstroth Frames.

Material for (hanging) frames for Standard L. Hive per 100 ..... $3.00

The frames we use are so constructed that the bees will not build comb between or over them at the top, nor fasten the section case and frames together, as is the case when the common top bar is used.

Nailing Block for Frames.

No one can do good work at nailing frames without a proper board to nail them on. We can send one, by express, that will do the work nicely price, ... .50

Comb Foundation.

We can supply the best brands at manufacturers' prices, and ship direct to our customers from the nearest factory. We also keep a quantity in stock to fill small orders.

1 to 10 lbs., for brood frames ..... 45 cts. per lb.
1 " " " " sections ..... 50 " " "

We keep in stock but one dimension of brood-foundation 17½ x 7 inches. This is large enough for any L. frame and is just right for the Bay State frame.

Perforated Zinc.

This we can supply in any quantities, shipped with other goods, per foot ..... 12 cts.

If sent by mail, add 10 cents per foot for postage.

Honey Extractors.

THE E. T. LEWIS & CO. EXTRACTOR,

No. 22. 28 inches in diameter, 25 inches high, 2-frame for any size up to 12½ x 19; room for 25 lbs., honey below reel, and the best extractor ever made for. $10 00

We sell this size only as it is the most convenient to use of any found in use. This extractor is adapted to any frame in use.

Honey Knives.

Root's knife, by express,	.70
" " by mail,	.75

Bee Veils.

The veil has a rubber band which draws the top together; it is then placed over any hat and drawn until the elastic is over the hat band.

Common net, by mail ..... .35

Smokers.

Bingham & Hetherington's only.

By mail, $1.75; by express, ... 1.50

Queens and Full Colonies.

Queens.

Prices.

Untested queens, each,	$1.00
Selected " "	1.25
Tested " "	2.00
Extra breeding queens, the best we have, each,	3.00

Our untested queens are sent out before any of their brood hatches. 95 per cent will prove to be purely mated. Safe arrival and purity guaranteed in all cases.

Carniolan queens and bees at the above prices. Our strain of this new race of bees cannot be excelled.

Full Colonies.

We consider eight frames well filled with brood and covered with bees a full colony. Prices of such in B. S. hive, including one set of sections, $12.00. Purchasers to pay express charges. Safe arrival guaranteed.

Fourth Edition of the

Beekeepers' Handy Book, or Thirty Years among the bees. 75 pages, with illustrations, by mail ..... .50

Queen-rearing Apparatus.

Beekeepers who rear queens, whether by the Alley method or by any other, should have the apparatus here described. The SWARM-BOX and QUEEN-NURSERY are articles that no person who rears queens ought to dispense with.

By using the swarm-box a large colony of bees can be confined a long time or transported safely hundreds of miles. It is a very useful article about the apiary at all times during the season.

Sent only by express, price, $1.25.

When a colony swarms and it is desirable to preserve the queen-cells, and no nuclei are at hand, the Queen-nursery in such cases will be found invaluable; the cells can be placed in them and they need no further care for a week or more. Virgin or fertile queens can be kept in the nursery for several weeks. We have sold a large number of queen-nurseries in years past.

The following articles are also used in rearing queens, a full description of which can be found in our work upon queen-rearing.

	Express.	Mail.
Queen-nursery (of 21 cages)	$1.25	$1.60
Swarm-box	1.25	
Fertilizing-hive (complete)	.50	
Fumigator for using tobacco	.25	.30
Cone-feeder	.15	.20

To make the lot complete, we put in each package one drone-and-queen-trap, one copy of THIRTY YEARS AMONG THE BEES, and send all by express for $4.50

All these articles can be packed in the swarm-box and sent safely by express or freight.

Brooms for Brushing Bees from Combs.

We find a small "corn-broom" best for this purpose as it does not injure or irritate the bees, and will do the work better and quicker than anything else used for the purpose.

1 broom, by mail	.25
1 " by express	.20

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Remit by registered letters, cashier's check or express orders. If sent by money orders or postal notes, have them made payable at the Salem, Mass., P. O. Make all remittances payable to the order of the AMERICAN APICULTURIST.

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A JOURNAL FOR THE NOVICE AND EXPERT IN BEEKEEPING.

PUBLISHED MONTHLY. SUBSCRIPTION PRICE, 75 CTS. PER ANNUM.

HENRY ALLEY, - - - EDITOR.

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The Editor's Department.

Spreading brood.

Mr. Doolittle has never shown that there is the least advantage in spreading brood. There is not. On the other hand, if an inexperienced person attempts it he will temporarily, if not permanently, injure his apiary. While spreading brood may be practised during the warmest weather, there is nothing gained if practised early in the season. Where a comb of brood is removed from the centre of the brood-nest and an empty one inserted in its place, the queen will at once deposit eggs in the cells; yet nothing is gained thereby. It seems to me that every beekeeper should know that colonies having prolific queens deposit all the eggs the bees can protect when the weather is cool. When the brood is spread, the bees cannot protect it, and on cool nights the cluster draws in, and all eggs and larva on the outer edges are left to perish. If any one desires a practical test of the matter, just spread the brood in a hive, and if the weather the next morning is cool, open the hive and see if the bees have not deserted and left much of the brood on the outer edges to perish.

How our bees have wintered. The Italians ahead.

Last fall we purchased a number of black colonies of bees to use in queen-rearing the coming season. These colonies were all strong and in fine condition and the combs well filled with natural stores. We also have in the apiary several splendid colonies of Carniolan bees. The others are Italians.

All the bees have wintered well; the Italians coming out ahead of all. The black colonies show more dead bees about the hives than the other races. There are few if any dead bees about any of our Italian colonies.

Canadian Bee Journal.

Brother Jones has made an important change in the *Canadian Bee Journal* and *Poultry Weekly*. They will be issued semi-monthly hereafter. This is a pretty good arrangement. The two papers are sent for $1 per year. Subscribe for them. You will get more than you pay for.

The drone-and-queen trap.

Special attention is called to what is said of the drone-and-queen trap in this issue. The trap is now one of the staple articles of the apiary. To save express charges the traps may be ordered of one of the following named parties.

Thos. G. Newman & Son, 246 East Madison St., Chicago, Ill.; A. I Root, Medina, Ohio; G. L. Tinker, New Philadelphia, Ohio; A. F. Stauffer, & Co., Sterling, Ill., or the W. T. Falconer Manf'g Co., Jamestown, N. Y.

We need agents in every state in the Union. Those who wish to sell the traps will have their names added to this list if they purchase one hundred or more traps of us. Those who desire to take an agency will be furnished with a price-list by applying at this office. The traps can be had of us in any quantity.

The Bay State Bee-hive.

Some of our customers say that certain parties are offering to furnish the Bay State Beehive at a less price than that given in our list. No honorable dealer will make or sell another person's goods without the consent of the inventor; certainly no honest man will offer to do so at a reduced price.

When a dealer "cuts under" in price, just make up your mind that the work and stock will be in proportion and of an inferior quality in all respects. We sell the hives as low as we can afford to considering the work and quality of lumber used. Bear in mind the fact that, as a rule, cheap goods are the dearest in the end.

What is a bee hive good for that is not sawed accurately? I would not give a nickel for a thousand.

The query department.

We believe our readers will not complain if the query department is crowded out of this issue. Look the API through and see if we have not done well by our subscribers.

Our price-list may be found on page 76.

What shall the remedy be?

J. A. Buchanan.

On the subject, "How to increase the product of the hives to secure the most honey and regulate and control the price, our friend A. C. Tyrrel attempts to give us a bird's-eye view of the calamities about to befall the agricultural and apicultural pursuits of this country. My nature is such that I never look into the dim vista of the future with evil forebodings. Metaphorically speaking, we need not cross the stream before we get in sight of it.

There has been and always will be a way out of the wilderness.

Speaking of the arid lands of the West which may soon be converted into vast alfalfa fields and made to blossom as the rose—and yield honey by the hundreds of tons—is already causing, in Mr. Tyrrel's mind, visions of "bitter disappointment and abject poverty" to those who have unluckily drifted into beekeeping as specialists.

In view of this greatly increased quantity of honey coming from the alfalfa fields, we are persuaded that there will be no possibility of holding prices of honey where they will justify its production.

First, I will not take alarm before I see this great output of honey on the market; and if it does come, the price will be low, and I shall be glad of that as it will be so cheap we eastern people can better afford to buy honey than to produce it. If bees will gather two to four hundred pounds of honey per colony in those alfalfa fields, the specialists there can do well at raising honey at from three to five cents per pound, and at such prices it will not pay us small fry of the eastern states to attempt competition by keeping bees; it would not pay.

We can spend our summers in the hammock in the shade awaiting our shipments of choice alfalfa honey at three cents per pound or *two* pounds for a nickel.

No, sir, we will not mind being driven to the wall when the drive brings to us such a "soft snap." Why, if any one will guarantee to furnish me honey, even choice extracted, at five cents per pound, I will keep no more bees, and if any country will produce such alarming quantities as has been represented, there is plenty of money in producing it at this price.

Our fraternity has taken alarm at the rapidly disappearing basswood forests, claiming that soon we shall have none of these great honey-producing trees.

I do not care how soon this source of honey may be cut off.

My reasons are because of the tendency of basswood honey to injure my trade. I never sold a dollar's worth of this kind of honey to a customer who did not claim that the honey had a peculiar taste that they did not like, and this injures any dealer's trade. Not so with white clover, orange blossom, Mangrove or the finest grades of California honey; these give perfect satisfaction to all and more is wanted.

Now, if alfalfa honey is as good as white clover, and the supply of basswood is cut off by the destruction of that timber, we shall welcome the change and promise no glut in the market for the larger yields of alfalfa.

Mr. T. says, "What has been will be, and that no more honey will be consumed next year than during the past year." If so, this is the fault of the honey-producers, in that they do not make an effort to create a better market.

Now, do not tell me it cannot be done. I know more than this.

Honey, it is true, is something of a luxury; people are not persistent in hunting it up to make purchases; the producer must push the sales by going direct to the people and taking orders.

Some ten years ago I lived on a farm large enough to occupy most of my time. I kept fifty to seventy-five colonies. Some poor seasons I only got a few hundred pounds of honey to sell; other seasons the surplus ran up into the thousands of pounds, and it mattered but little whether much or little was sold and at about the same price. When a poor crop in our locality, the crop was good in other places, and the deficit supplied by dealers. When we had an extra large crop, how did we get rid of it? why, by pushing the sales more vigorously.

Now, I handle from thirty to fifty thousand pounds every fall; how is this? I answer by a greater effort.

If every beekeeper would do this, five times the amount of honey would be sold each year, or at least might be sold. It is not that the rich buy more freely than other classes. The laboring classes buy of us twice the amount that the wealthy do. If the way I have suggested is not feasible and not in line with a correct solution of the problem of how to dispose of a large crop of surplus honey, I want the man who has a better plan to take the floor and tell what he knows. We do not care whether we can educate people to eat honey or not habitually. Just so they *do* buy of us when we extend our pressing invitation, is all that is needed, all we desire.

Mr. Tyrrel gives utterance to words of wisdom when he cautions beginners against an attempt at making the production of honey his only means of livelihood.

The veteran who can handle large numbers of colonies to the best advantage, having secured a good field, may successfully engage as a specialist, occupying his time in the summer procuring the crop, and again his time in the fall and winter in disposing of his surplus, as far as possible, direct to consumers, thereby obtaining the most money for his product.

Hollidays Cove, W. Va.

Foreign Notes.

CONDUCTED BY L. STACHELHAUSEN.

Beekeeping in Germany has not advanced since 1873. The census of that year gives 1,453,764 colonies in the kingdom of Prussia. In 1883 she had 1,237,991 only, consequently lost 215,773 colonies. The census of 1893 will very probably show another reduction. This is the more striking as many swarms and full colonies were imported from Italy and Carniola.

One of the great differences in beekeeping between the United States and Germany is, that the most of the German beekeepers keep a few only and beekeeping there is rather a hobby than a business. A large per cent of German beekeepers are gentlemen or teachers. Of course they wish to get a cash income from beekeeping, but they do not depend upon it. Some farmers keep bees, but generally the wealthier people. As a consequence of this, hives and appliances are complicated and costly and less adapted for quick management. The poorer people, such as they call cottagers in England, are very indifferent in regard to the movable frame hive and modern bee-keeping.

Mr. Tony Kellen wrote a report of the Paris exhibition for the *Schweizer Bienenfreund.* He says, "The English and Americans have noticeably surpassed the German beekeepers (not to speak of others) in many respects. They may at first have learned many things of Germans, I admit, but they have learned how to apply science and do not remain stationary. To-day can the German and Frenchman go to the Englishman and American for instruction. Already what belongs to beekeepers, the Europeans can no longer measure with the Americans.

Many judicious and thinking men across the water see this truth very well, while some other one expects to take the lead by severely criticising

our hives and managements, keeping back by doing so every step to progress.

As a contrast to the words of Mr. Kellen, I give here the words of Mr. Muendel in "Bienenzeitung," page 173, he says, "It is ridiculous and thoughtless to say, America had surpassed Germany, because the United States alone are larger than Europe." True, they are, but this is no reason. The United States were just as large thirty ago as they are now, but at that time Germany was ahead. Who of these two men is ridiculous and thoughtless?

Bee conventions and associations in Germany.

In some respects we may still learn from Germany. For instance, in organization of associations. We find there beekeepers' associations in nearly every town and they meet every month at least, discussing news of beepapers and giving their own experience. A number of these associations belong to a state or main association. The business transactions of these associations are done by delegates, and about every year hold an assembly with exhibition of bees, hives, appliances and apiary products. A number of essays are read and discussed. These state associations are united to a central association and this again held an assembly with exhibition and essays from time to time. It was assembled this year (1889) at Stettin. The central association further uses its influence to get laws in the interest of beekeeping, but without success as yet; defending beekeepers in lawsuits, etc. Every member of the sub-associations contribute to the expenses of the state and central association and so the cash income is more regular than in any other way, and the members have a direct advantage by visiting the monthly assemblies near their home. In some localities a wandering teacher reads an essay before the sub-associations and advice is given in practical beekeeping. This gives a new impulse.

Besides this association is the wandering union of German and Austrian beekeepers. It meets every year alternating in a city of Germany or Austria. It has no permanent organization except two vice-presidents, and every beekeeper or friend of beekeeping can get a member for the respective assembly.

The above named assembly of the German Central Association was held at Stettin, Sept. 6–9, 1889. Many essays were read before the association, and the exhibition of hives, implements and products of bee-culture was worth seeing. We mention only an electric telegraph to indicate the casting of a swarm in the apiary.

The honey show was better than any one ever before seen in Germany.

Selma, Texas.

Honey-boards.

DR. G. L. TINKER.

Yes, Brother Heddon, I am glad you have placed yourself on record in the March No. of the API, in the matter of honey-boards as against my views. The only fear was, that you would not; especially in view of the facts now being brought forward by friends Alley and Root, backed up by the testimony of hundreds of reliable men who are not given to theoretical vaporizings. There were so many, you know, who thought *you* knew all about the cause and prevention of burr-combs, but imagine their chagrin to learn from your late writings, that, though your alleged experience in the matter was immense and conclusive, you did not in reality understand any one of the principles involved in preventing burr-combs.

Either that, or you are waking up to the fact that your new hive and system are already doomed and we find you hopelessly trying to stem the popular current of ideas against your

break-joint honey-board system. But you are not alone in perceiving what is to be the inevitable result.

Yes, sir, I repeat that your slatted honey-board has had its day and will pass out of sight. And there are two reasons for it. First, its utility in keeping the queen below it is unreliable. Second, it does not overcome the evils from burr-combs, except on its upper side; but burr-combs below the honey board are the cause of all the hue and cry for thick and wide top-bars, which, with proper spacing, *will prevent these evils effectually.*

As to the break-joint slats cutting off the light, I simply stated the facts as observed. There was no theory about it. There is plenty of light at the entrance of Friend Manum's hives, as I have used them and know; and again, I think he rarely storifies his hives and supers more than 24 inches high. See my exception. But the break-joint slats on the first story of *a* hive completely excludes *all* light from the upper stories, and the trouble was only noted where the hives and supers were storified more than 24 inches high.

But Mr. Heddon is anxious to go on record against me that less burr-combs are built where the break-joint principle exists than where there are direct or continuous passage ways. Now here is Dr. Miller, an acute and cautious observer, who says he can see no difference. So says Ernest R. Root. So also says a noted Michigan beekeeper and personal friend of Mr. Heddon. See *Gleanings* for Mar. 1. These men confirm my statements to the extent that there is no difference. Here then are four against one; that is about the size of the probability that Mr. Heddon's views on this point are to a large extent theoretical.

This leaves me with the statement there are even more burr-combs built where the slats are break-joint. Here let me say, that I never made or used a Heddon slatted honey-board. I have used only Dr. Tinker's wood-zinc honey-board, which I have often made break-joint. But the fact that I use perforated zinc between the slats of my honey-board may make some difference. With the wood-zinc honey-board we have less burr-combs with continuous passage ways than where they are not. Hence I favor direct passage ways and regard the break-joint feature of Mr. Heddon's slatted honey-board as of no value. But he believes it of value and has the credit of inventing the break-joint feature. How about the bee-space? Oh! that was invented by our venerated Father Langstroth before brother Heddon ever thought of bees. And before I would take from his honored laurels without credit, I should want to hide my face in shame! But let us have charity. Let us think that brother Heddon had seen the bee-space of Langstroth and then forgot all about it, as he did when he saw my wood-zinc honey-board at the Michigan State Fair in 1885, and forgot all about it, then afterwards invented it and claimed it as his own invention!

Do I need here to give the proof,—to mention the names of men whose veracity and honor Mr. Heddon dare not question? No, they are already well known and I would warn him that that old chestnut of his is about played out. He may continue to us my invention on his new hive.

Yes, I use the Langstroth bee-space in my wood-zinc honey-board (it is no use to misrepresent me, see my article in Feb. API) and I use it in the top of my brood-chambers, and I use the Langstroth movable brood-frame that I believe the most practical brood-frame ever invented; and I have used brother Heddon's new brood-frames, that by some hook or crook, Father Langstroth, in the feebleness of his old age, was persuaded to endorse as a superior invention!

New Phila., O.

In justice to our readers, we will let this controversy end here. I believe the break-joint, burr-proof slatted honey-board is a perfect humbug, and a useless, worthless device anyway.

With a proper top-bar and right space between them and the correct space between top-bar and sections above, there will be no burr-combs built. At anyrate, there never has been any trouble of the kind in the Bay State apiary.

Last fall we purchased twelve colonies of bees in 10 frame L hives, all of which have the narrow-top-bars. The tops of the frames are so thickly covered with brace-combs that the wood cannot be seen. On one of the hives there is one of those famous break-joint, burr-proof slatted honey-boards. There is not so much comb about the top of those frames as there is about the other eleven hives. But the colony in this hive is the poorest one of the lot, and never had a large number of bees. Nevertheless, there is more brace or burr-combs about the top of the frames than there should be, or there would be, if the hive and frames had been constructed on a correct principle.

There is another thing about these break-joint honey-boards that I do not like. By actual measurement the distance between the brood-combs and the sections above in the hive mentioned is two and three-fourths inches. There ought not to be over an inch of space.

Throw away your old clap-traps in the shape of hives that require honey-boards of any kind. Adopt the better system of management and better hives.

Clipping queens' wings.

Oh, fudge and fiddlesticks! brother E. L. Pratt (if you beemen will allow a woman to "brother" you). Fudge and fiddlesticks! on the "cruel and inhuman way" of clipping queens' wings. You admit that it is painless; then, as the queen is never to use her wing again except to call her buzzing brood up into some tall treetop, or off "over the purple hills," exactly where the beekeeper does not want them, I fail to see where the cruelty is. To my notion, the "cruelty is all on the other side, when a fly-away queen settles on the top of one of my oaks, and I go crawling up a ladder, bread pan in one hand, cover in another, and more fudge and fiddlesticks on my tongue than would set up a whole dictionary if translated into good round swear words.

Suppose "Brother" Pratt, nature had given you an extra sharp toe-nail for the express purpose of scratching your left ear, just once, before you began life work, and suppose, after that ear had been attended to, some enterprising beekee—ah, no, I mean enterprising party should then cut it off, do you think,—remembering the operation was "utterly painless," and the toe-nail worse than useless—do you really think it would be just as bad for you as is "throwing out sheep's joints" for the sheep?

Not being a sheep, and never having had any of my joints mislaid, I've no idea how painful the operation is, but if sheep's joints are any like people's, I should suppose the sheep had better be thrown out and the joints kept in the field, or, in fact, the field thrown out and the sheep kept in the joint. And I'm not an almond-eyed celestial either.

Now *I* could tell a tale of woe, of wailful woe, because of queens' wings that were *not* clipped. I bought a Carniolan queen of "brother J. B. Mason, and a beauty she was, too, and I — I— um! ah! I suppose I was *afraid* to open the hive again, as I failed to search for her until the day after fruit bloom, and found the hive choked full of bees, and robbers in the air, and didn't find the queen. Then out she came a few days later, and,—well, if she isn't frozen to death, she is out in the woods now. Hereafter my queens have a clipped wing, or a self-hiver to decide their course for them.

And just here is the question I started out to ask. Suppose your old queen has a clipped wing, and she swarms, and you gather her gently out of the grass, and get her and her swarm into a new hive, then what of the swarm that will issue in about eight days more? How soon will the young queen hatch, and how soon will she lay? This is what bothers me. How shall I know that she is ready to lay, before I find her making for the treetops? This is just where my trouble comes in, as I stand considering the Alley self-hiver. I want some self-hivers; this is *precisely* what I do want. Beekeeping has lost its terrors for women, the moment bees can be made to hive themselves, or to cluster low down; but how shall I know just when the young queen is laying? I suppose you will tell me to look for the eggs, but, my goodness! who is

going to have time to squint through all the hives? A dozen swarms might "elope" while one was deciding whether or not another dozen were ready for the trap. Is there any date governing these things? If so, just wait till I get out my order for self-hivers.

Yours in a quandary, as ever,
KIT CLOVER.

Dubuque, Iowa.

We never made it a practice to clip the wings of queens, nor do we approve of doing so. Where one queen whose wings are not clipped may fly to parts unknown with her swarm, there will be half a dozen clipped queens lost in the grass, or in some way destroyed on account of not being able to fly. The loss of queens and swarms is entirely prevented by the use of the drone-and-queen trap, or the Swarm-hiver. Try them, you who have so much trouble at swarming time.

A word about young queens: when they hatch, the time they should be fertilized, commence to lay, etc.

If a second swarm issues it is usually on the eighth day after the first swarm comes off, that is, the second swarm is due on that day. Seven days later the young queen should be laying, provided the weather is such that she could take a flight when five days old. It is understood, of course, that queens do not as a rule fly to mate unless the weather is as fine as it should be when the bees gather honey. Now, my good woman, do not trouble yourself about a swarm issuing from a second swarm until the following year, as bees seldom swarm until they have a queen one year old.

It is not an unusual thing for the first swarm that issues to cast a swarm late in the season, as the first swarm has an old queen. As to the time the young queens commence to lay that is not of the least consequence. Certainly no one need open a hive and examine the cells to ascertain the fact. If the bees seem to be doing well, that is sufficient assurance that all is right with the colony.

Our swarm-hiver is mentioned. If this arrangement is used and a swarm is captured, the swarm should be given a new location in the apiary the same as they should had the bees been hived in the usual way. If a second swarm is expected the hiver should be set again. But why permit a second swarm to issue? After the first swarm has been cared for, why not open the hive and remove all the queen cells but one? Or, why not remove all the cells and three days later introduce a fertile queen? It strikes us that "Kit Clover" has been reading some bee-paper not up with the times, or she would understand some things concerning bees she now seems to know but little about. Had she read the leading bee journals published in the United States she would long ago have discovered that there is an arrangement which when applied to hives obviates the necessity of clipping the wings of any queen, climbing into (oak) trees for a swarm of bees and the loss of any swarms when they issue.

Take our advice and cast away those two-cent bee-papers whose editors have not discovered the fact that improvements in bee culture are continually being made. Read the *Am. Bee Journal*, *Gleanings in Bee Culture*, the *Review*, and above all, the APICULTURIST. These publications keep their readers posted on all matters relating to new and valuable devices that will help the novice to solve the problem, "*How to make bee culture a success.*"—ED.]

Siftings in Bee Culture.

CONDUCTED BY M. A. KELLEY.

Periodicals for review, exchanges and correspondence intended for this department should be addressed to

M. A. KELLEY.
Milton, W. Va.

Honey with lemon juice is said to be a good remedy for la grippe.

It is said by high authority that drones will die if they are not fed by the workers.

Several beekeepers in the South report surplus honey-dew, honey stored in mid-winter.

Cheese cloth and all other foreign materials are not suitable for making the septum in foundation.

Well, well, so it turns out that several parties have invented Alley's "Swarmer" before he published his invention!!

That's all in their minds.—ED.]

Heating the place with the smoker, a lamp or by any other means is the very latest remedy for stings.

Bee stings as a cure for rheumatism seems to be gaining advocates. Try it, ye rheumatic ones, and report the result in the API.

Mrs. Kit Clover is editor of the poultry department in *The Beekeepers' Advance*. Sorry to lose her racy letters in the bee department.

A good way to paint hives is said to be to use two-thirds beeswax, one-third rosin and a "little mite" of tallow melted together and applied warm with a cloth.

The symptoms and cure of foul brood is the special topic of the February *Review*. The matter is ably handled, but nothing is said as to the conditions that favor its development in isolated localities.

The honey bee is a regular merchant. It "cells" combs for a living. —*American Bee Journal.*

Yes, and it sometimes "cells" the man that bothers its combs. *Siftings* was "sold" that way one upon a time.

Hives should be painted white, if painted at all, so as to avoid melting down the combs. Some beekeepers, Mr. Doolittle amongst them, say they prefer unpainted hives, but the great mass of the fraternity think otherwise.

All men err. Even editors make mistakes. The *Canadian Bee Journal* tells a correspondent that "a bee is not an animal." Well, what is it, pray? Is it a mineral or a vegetable? It must, of course, be one of the three.

Persons that are troubled with laying workers should notice the article of Mr. Hawk in the February Api. His plan seems to be a step in the right direction. It is plain, simple and easily applied. Everlasting fussing with the bees has had its day.

In this part of the country the bees are gathering pollen and are getting some honey. Peach trees have been blooming since January, and the willows and maples are now furnishing work for the bees. There will be a rather heavy loss of bees to report this spring.

The amount of ignorance with regard to honey is really astounding.

People that, in other matters, have a fair share of knowledge know almost nothing about honey. Some think that it is all adulterated and that granulation proves it so. As I heard remarked the other day, "the human man is a curious critter."

That cloths over the frames have had their day is plainly evinced by the tenor of the replies to a question in *Gleanings*. There are eighteen answers and fourteen of them are against the use of cloths. Several leading writers are very decided in their views. The cloths must go, and Mr. Root himself says the large honey-producers have pretty much all discarded them.

Mr. R. L. Taylor, tells how those who use excluders may easily find their queens. It is to rap on the back of the hive and smoke into the entrance until the bees become alarmed, then turn over the excluder and the queen will be found trying to get through. Mr. Root sometime since advised us to put a gummed label on the back of the queen to enable us to find her.

The dry bones are being stirred up as to spacing frames. It is an old subject but one that needs a rehearsing. Now, so far as I am concerned, I never could see the use of having the frames $1\frac{1}{2}$ in. from centre to centre. For years I have used hives with frames $\frac{3}{8}$ of an inch apart. To have the combs more than this distance from each other will cause a loss of box honey.

Thick top-bars get a great deal of attention lately. It would be a good thing for some one to settle the mat-

ter once for all. There are too many points in bee-culture that need to be decided. It keeps the ordinary beeman in hot water, so as to speak, trying to be on the right track. Most of those who use the thick and wide top-bars agree that they reduce, if not entirely obviate, brace combs.

Mr. P. H. Dilworth, in *American Bee Journal* protests against the use of the word "colony" as applied to bees. He says that colony means a settlement but that the bees are only one family. The editor retorts that "colony" is better than "hive" or "swarm," and that we should use it thus or invent a better term.

Siftings thinks they should be called a "family." What say ye, Bros. Dilworth and Newman?

Mr. C. A. Bunch, in the *American Bee Journal* says that the portico hive, the wide frame, the open side section and tight bottom-boards as well as hives that do not take a standard brood-frame will all be laid on the shelf. Yes, and a great many other things that are now lauded highly will be in the same "bunch." But will Mr. Bunch give us the *exact size* of "a standard (?) brood-frame"? What is a *standard* frame anyway?

Mr. Geo. Wood, in the *Canadian Bee Journal* advocates killing surplus bees rather than trying to winter them. The editor calls it a new idea, but it is not, for it has been published before. The best way is to destroy the old bees in all "families" in the fall and save and unite the young bees to save over winter. The old bees may be separated from the young ones by moving the hive when the bees are flying.

We do not approve anything of the kind. Let the bees manage this matter themselves and all will be well.—ED.

"If there is one folly greater than another in modern beekeeping, it is that of wiring brood frames."—*Dr. G. L. Tinker in American Journal.*

Always thought so, Dr., only I did not think it in quite such strong language. In a few years the progressive beeman will smile at the idea of fussing with wired frames. Some people seem to want combs strong enough to be handled like paving stones.

So say we, and so have we said since we first saw and used wired foundation. Wired foundation is one of those nuisances that have crept into bee culture almost unnoticed.—ED.

Mr. A. I. Root is sometimes rather severe on "odd sizes," as he puts it in bee fixtures. Being a supply dealer it is to his interest to have things uniform. He says in *Gleanings* for Jan.: "Nobody wants to buy bees in a frame that is almost but not quite an L." I would like to ask Mr. Root if this phrase of his "almost but not quite an L."does not exactly describe his own pet so-called "Simplicity" frame?

Queen-breeders' Department.

CONDUCTED BY E. L. PRATT.

Now let's have a rest. "La Grippe" we have all had it, and the worst is passed.

I wish to emphasize most emphatically that *pure Carniolan bees should show no yellow bands.*

Mr. E. A. Lomaster informs me that he has also had bees swarm without drones or drone brood.

The March number of the *Review* was given up to the discussion of the rearing and shipping of queens.

The size of a queen can easily be determined while she is a virgin by the development of the head and chest.

Bee circulars and printed matter are coming in by the hatfuls. An early season is expected by all, jndging from the "hustle."

I claim that you can give small nucleus colonies too much ventilation in shipping, but with full colonies it is different.

A stiff camel's hair brush will be found the most suitable for transferring larvæ, as it is not so liable to injure them.

Breeders of the Carniolan race are coming to the front with their cards. Many are discarding all others for the Carniolans. Why?

There is no end to the developments that the excluding metal is going to bring forth. The half is not yet told of this wonderful metal.

We are constantly receiving encouraging reports from Carniolan bee-keepers. This race of bees will be a wonder when fully developed.

The French Bee Society Journal gives a complete review of the exhibits at the World's fair at Paris in '89. Several American appliances are illustrated.

I cannot reconcile myself to a closed-end frame, but I would like a hive that I could move about without having to nail each hanging frame to the rabbets.

By the use of so much foundation in both surplus and brood departments shall we not in time, to a certain extent, train out of our bees the power to secrete wax?

Of all the things about the yard that are hard to keep run of, the dissecting knife is the hardest. I never know where mine is, and I have considerable order at times.

Mr. H. D. Davis informs us through his circular that he considers excluding zinc practically valueless as a queen-excluder. I would ask Brother Davis what brands of zinc he has tried?

About April 1, I shall feed my bees a little warm syrup out of doors as often as the weather will allow. I have selected a warm nook for so doing several rods from the yard.

Brother Doolittle's plan of a self-hiver suggested by his queries will undoubtedly work first-rate. But some means of accomplishing this end all in one job would be better, the Alley swarmer for instance.

To my mind the past open winters have been caused by so much rain. The ground has been thoroughly saturated for months and a warmth arises which meets the frost and snow before it can get a foothold.

Many think they have a pure breeding queen if the workers are all alike; but a season's test often discloses the fact that "all is not gold that glitters." A pure breeding queen is worth considerable money.

Oh! if we could have about thirty or forty days to get a start at queen-rearing before everybody "wants a queen by return mail," would we not feel good natured and couldn't we fix the "kickers" up at short notice?

Alley's swarmer will make the crowding-out plan of securing queen-cells more agreeable to the general run of breeders. As an actor, I believe I am a monumental failure. And as for repeating the swarming "act" again and again, I'd rather be excused.

A printed fact of great value is often passed unnoticed again and again. Thus, the need of a second reading of articles interesting to us. I generally

check several pieces in the different papers coming to my desk for a second and very often a third reading or review.

A gentleman has ordered of me one dozen swarmers, saying, "If the swarmers aid me one-half as much as Alley's traps have they will do all I ask." More will be tempted to start out apiaries now that we have a device that will relieve our minds of the "pesky" swarming business.

Very often one man's hatred for another will cause him to "run down" a device or method, or implements of real practical merit. We should remember that from the enemy we learn tactics. "Patience is a virtue." One must possess a generous amount of that commodity in a queen-rearing yard at times.

Come to think of it, my bees were sipping snow water from off the caps some three weeks ago, undoubtedly for the purpose of brood-rearing, as I had not fed them anything before that time. By the way, Bro. Alley, your rebuke about "rock candy feed" is refreshing. If beekeepers want to starve their bees in that way let them do it.

This life is a constant warfare. If it isn't over swarmers, it is over something else. Why can I not put in a claim also for your swarmer, Brother Alley. If you remember, I sent you a swarming device sometime ago. But for goodness' sake don't rake it out. It would make me shudder to behold its skeleton-like form.

Few breeders seem to realize that we have mating ever under control by manipulating the entrances. There should be no drones in the air while young queens are flying, but those selected from the best stocks, either distributed through the nuclei or all in one hive. Of these there should be great numbers, both strong and healthy.

I shall practise feeding flour inside the hive this spring after the Russian plan, viz.: sift flour into the cells until about one-fourth full, fill up one-fourth more with powdered sugar and run syrup of sugar and honey into the balance. After the flour and sugar are well saturated, place the comb close up to the brood-nest. Renew the operation in a few days.

"Queen Restrictor" is the invention receiving attention by Mr. Chas. W. Dayton of Bradford, Iowa. By the use of strips of excluding metal attached to end, top and bottom bars, the queen is confined to as many combs as desired without the use of regular divisions or honey-boards. Two or more frames being attached, reversing can be easily done. It is contraction in itself.

Perhaps we could suggest a few improvements in your nursery cage, Brother Alley. Send us one and see if we can. I have in mind an entirely new device for nursing. After another season I shall publish it, if of enough note. Can't you remember how you used to sit up nights waiting for queens to hatch by the old methods? There is yet chance for improvements.

We doubt it. Have experimented in the queen-nursery line for twenty-five years. So far as we need a nursery, ours is a perfect one.—ED.]

Wide top-bars and drone-traps.

Lancaster, Mar. 10, 1890.

MR. ALLEY:

I am now using the Langstroth hive with portico. I wish to try your Langstroth frames. I am using the common narrow top-bar frames and I do not like them. You will find enclosed twelve cents in postage for which please mail me a sample of your Langstroth frames.

I shall also want some of your queen and drone traps. I tried a sample trap last season and it worked to perfection. I cannot be watching my bees at swarming time and without your trap I am running the risk of losing my swarms. I lost a nice swarm of Carniolans two seasons ago by not being present when they swarmed and came very near losing a strong swarm of Italians last summer. I was two miles from home at work when they swarmed. When I got home they had taken the second flight and clustered in the top of a tall tree; there was no ladder to be had that was near long enough to reach the bees, so I had to scale the trees and with the aid of a second party I cut the limb and let it down with a rope. Such a job I mean to prevent in the future. Your trap will be a valuable device for me. I feel grateful to the Messrs. Harker Brothers of Hornerstown, N. J., who recommended the API to me. I should have been left in the dark in a great many matters pertaining to bee culture without the API.

JOSEPH EIBEL.

That's it. The trap saves bees, time and labor, and in a good many cases no doubt prevent a broken neck.

Those who do not read a first-class bee-paper will get left. Subscribe for all the leading bee-journals and keep up with the advancement in apiculture.—ED.]

Absconding swarms—how prevented.

Last season was the most remarkable for swarming ever known here. Bees absconded to the woods in great numbers. A great many trees were found and cut. Some were found in logs and hollow roots. I have three swarms taken from as many trees, all at one time.—S. J. YOUNGMAN in *Am. Bee Journal.*

Such things are prevented where the drone-and-queen trap, or our automatic Swarm-hiver is used. The Swarmer not only prevents the loss of swarms, but saves the beekeeper the trouble of hiving the swarms and also the trouble of going into a tall tree for the bees. We will mail a sample of Swarm-hiver to the address of any subscriber for 75 cents. You all will admire the simplicity of the latest and most useful apiarian labor-saving device.

A hard hit at some paper.

Georgeville, Pa., Feb. 21, 1890.

MR. ALLEY: I received your Journal and think it the best I received among five others; there is so much information about bees and not mixed with a lot of other affairs like poultry, etc. When I subscribe for a bee journal I mean that; if I want a poultry grower I will send for that, or a farm journal. I don't expect to see in any of the others how to care for and manage bees; or if I do see a few words about bees I have no confidence in what I see in other journals as in the regular bee-journal. I am just commencing the bee business and need all the information I can get.

MRS. HETTIE E. LYDIC.

Bees and hens do not seem to go well together; that is, so far as publishing a paper. Several parties have tried it and have discovered their mistake. The *Canadian Bee Journal* which has been published as a poultry and bee journal for a year or two, has now been changed to a "pure" bee paper again.

The API has continued from the start to be a paper published in the interest of beekeepers and will so continue as long as the present editor has charge of it.

It is for the interest of every reader of the API to send us one or more new subscribers for the API. Just give us a large subscription list and we will give you in return double the amount of matter we now do.—ED.]

The swarmer.—Catching drones.

Wells Point, Texas.

I have one swarm of Italians, and as they are the only Italians in the neighborhood, I shall want them to raise drones. With your "Swarmer" on the hive, will not the drones get out the same way the queen will and be unable to return to the hive? What course shall I have to pursue in order to get the advantage of the Italian drones and at the same time not lose my swarms?

W. H. WINGO.

Swarms usually issue before noon and drones seldom fly before 12 o'clock. In your case the Swarmer can be pushed about half an inch away from the entrance to give the drones a chance to fly. Do this about noon and replace early the next morning.

Twelve days after the first swarm issues the Swarmer should be removed from the hive that cast a swarm to give the young queen a chance to fly and become fertilized.—ED.]

THIRTY YEARS AMONG THE BEES.

BY HENRY ALLEY.

QUEEN-REARING.

[*Continued from page* 43, *Vol.* VIII.]

The observatory hive for studying the habits of hives.

I know of no better way for the novice to study the habits of the honey-bee than can be done by an observation hive, such as is illustrated in fig. 21. This hive has but one comb which is inserted between two plates of glass. Anyone can make such a hive at small expense. Get out a frame, groove for a glass to slide in, leaving an inch and a half between grooves for the comb. Wooden covers, *H*, are used to keep out the light. I arrange it so that the bees pass to and from the hive under the bottom sash of a window, and in such a way that no bees can enter the room.

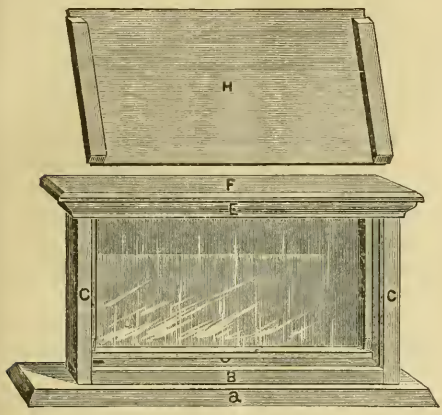

FIG. 21. *Observatory hive.*

When thus arranged there is no danger of anyone being stung while observing the bees work. Here every movement of the bees and queen can be seen, and all work from the laying of the egg to the sealed brood may be seen at any time; how the bees remove pollen from their legs; how they behave when deprived of their queen, and how they start and build a queen-cell, store honey in the cells, etc.

If the observation hive contains a small colony of bees and an unfertile queen, it will be seen that the bees do not take the least notice of her. Apparently she is of no more consequence before becoming fertile than other bees in the hive; yet should she be removed from the colony, the bees would soon miss her, and make as much fuss over her loss as they would had she been a fertile queen. The fact that bees pay no attention to a virgin queen, is the best evidence that she is not fertile.

Indications of loss of a queen.

When a virgin queen leaves the hive on the mating trip, there is not much excitement or disturbance over her departure, and should she not return for an hour or more her absence would not be noticed by the bees. Should she be lost by some accident which the queen bee is likely to encounter and is always subject to whenever she leaves the hive, and not return by sunset, the bees would be greatly excited; hundreds of them would come outside the hive and run about; others would take wing and fly a short distance from the entrance and return; in fact the entire colony seems to be in search of the queen. This state of things will continue for about an hour, when the bees will become reconciled to their loss, quiet down and commence to construct several queen-cells, and by the next morning there would be nothing outside the hive to indicate that the colony within had so recently lost its queen,

and no one would suspect it without examining the combs.

How to know a nucleus colony has lost its queen without opening the hive.

To save the trouble of opening hives in order to satisfy myself that no colony is queenless from loss of queen at mating time, I usually take a stroll through the apiary about dusk on the day that the queens are likely to take a flight. Sometimes I find that several queens have been lost. If any are found showing loss of queen, I then change the position of the indicator (which will be described further on), we use to denote the condition of each colony; and soon thereafter each colony is supplied with a queen. If a queen-cell is given the bees under such circumstances they will readily accept it. When there are no virgin queens at hand to introduce to such colonies, a cell is best to insert at once, but a virgin queen over two hours old, should not be used until the colony has been queenless seventy-two hours. I really think the inexperienced beekeeper had better introduce a queen, either fertile or unfertile, by the cage system.

Fertile and unfertile queens.

It requires considerable experience in beekeeping before the beginner is able to decide whether a queen is fertile or

FIG. 22.
Fertile queen.

FIG. 23.
Unfertile queen.

otherwise. Hence it will be seen at the start that it is no easy thing for me to make this matter perfectly clear to all. However, perhaps I can so explain the methods by which the experienced beekeeper is governed in such cases, that the novice and inexperienced beekeeper will be more or less benefited when undecided regarding the fertility of a queen.

It is known that a queen emerging from the cell is not near as large as she will be in the course of a week or so after becoming fertile. As a rule unfertile queens are not more than two-thirds as large as a fertile queen.

Figs. 22 and 23 very well illustrate the difference in the size of fertile and unfertile queen.

Ways of knowing a fertile queen.

The experienced beekeeper is sometimes puzzled to decide at a glance whether a queen is fertile or unfertile. Take an old queen at swarming time as an illustration. Unless her wings are ragged, which is an indication that a queen is an old one, there are but few beekeepers who can say positively that such a queen is fertile.

A few days before a swarm issues, the bees, and especially the queen, make preparations to emigrate. Her egg-producing capacity is curtailed, and her abdomen so contracted that, though an old queen, she is so small that her appearance and size seem about the same as a virgin queen. There is a sure way of deciding the matter of the fertility of any queen. Place the queen in a cage and then put the cage on the alighting board of a hive which has no queen. The bees will at once cover the cage. Nearly the same thing would occur should a virgin queen be placed near a hive under the same circumstances. The difference would be that while the bees would offer food to the laying queen, they would do their best to get at and kill the virgin queen. The bees would cling to the cage about the same as they would to a queen when she is balled. The bees can always be depended on to feed a fertile queen, but bees having a fertile queen will not feed an unfertile queen.

Studying the habits of the bees through glass.

If a fertile queen is placed in an observation-hive and under the same con-

ditions every way as the unfertilized queen described above, the workers will continually offer the queen food. As long as there is any brood in the hive, and the queen continues to lay, the workers will pay every attention to her ladyship. Usually the bees form a circle about the queen, while many of those about her head are offering food; the other bees in the circle seem to be tenderly caressing her by placing their antennæ or feelers, on the body of the queen and quickly withdrawing and repeating the same thing over and over again. The use of the antennæ is hardly understood. Professor Cook in his excellent treatise on the bee says: "The antennæ are very delicate touch-organs or feelers, and are so important in their functions and connections that removal produces a severe shock, but further we know little about their function, if they have other, and from the very nature of the problem we shall find it very difficult of solution."

Watch a bee when on a flower gathering honey or pollen, and it will be seen that the feelers are in constant use. The bee seems to have the same use for the antennæ when on a flower as when near a queen. I think bees seldom, if ever, touch an unfertile queen with their antennæ or form a circle about one as they do a fertile queen. In fact the bees do not seem to care at all about anunfertile queen.

Respect bees show for the queen.

When a fertile queen moves about the combs her subjects always open a way for her to pass, and the bees seem to vie with each other in their respect for their ruler.

The virgin queen never has so much respect shown her. The workers do not even trouble themselves to get out of her way when she moves about the combs. She must run over the bees and get about the best she can.

When a hive is opened and combs removed, a virgin queen is pretty sure to take wing, especially if the operation of removing the combs is not performed quietly, or late in the day. However, there is no danger of the queen being lost as she will fly but a short distance from the hive and immediately return.

Difficulty experienced in finding virgin queen.

On account of the great timidity of a virgin queen it is hard to find one in a large colony. I much rather look over half a dozen full colonies for as many fertile queens as to try to find one unfertile queen even in a small colony. The fertile queen unless quite young and has been introduced but a few days will not attempt to fly or leave the combs when the hive is opened. The fertile queen does not sulk in the corners of the frames, or under the bees. She is usually found on the combs. All her movements are opposite those of the virgin queen. The fertile queen seldom gets excited and it is but little trouble to find one even in the largest colony of bees.

How to find a fertile queen.

A great many beekeepers have written us stating that they would like to introduce an Italian queen if they could only find the one in the colony to which they wished to introduce the new queen. There are several ways to find the queen of any colony. A black queen in a colony of black bees is the hardest to find (except a virgin queen); and an Italian queen, even in a colony of golden Italian bees, is the easiest to find. The heavy, rich golden color of a large, yellow queen is easily distinguished from the small, striped bees that compose the colony.

The following is the easiest way I know of for the novice to proceed: Take a hive, as near as possible like the one the bees are in, place it on the ground or on a large cloth (a horse blanket will do), then place a drone-and-queen trap at the entrance of it and close any other places the queen might pass through. Now, all is ready; smoke the bees, take out the frames one at a time and examine carefully for the queen; if not found, shake the bees from the

comb upon the blanket about a foot from the trap and after examining the combs place them in the empty hive. Continue to do so until all the combs have been looked over. If the queen is not found, cover the hive and with the use of the smoker drive the bees in through the trap and at the same time look sharp for the queen. She will, most likely, be found in a very few moments trying to pass through the metal of the trap.

I believe the above is the surest, quickest and easiest way for the novice to find a queen.

This work must not be done in the middle of the day, unless the bees are gathering honey, or robbing may be induced. Do it late in the day. If too late to find the queen, she will be found on the trap the next morning if she was shaken from the combs.

One other method for finding a queen is to remove the honey-board, place the cap on the hive and drive the bees up into it by gradually blowing smoke in at the entrance and drumming on the hive five or more minutes. Turn the cap over and look for the queen. If not found, place another cap on and repeat the operation.

An old queen is rather slow about leaving the brood-nest, even when the bees are well-smoked, and sometimes it is necessary to drive nearly all the bees out of the hive and then afterwards remove the combs to get her.

The expert is not obliged to use the above method to find a queen. He merely blows smoke in at the entrance of the hive to alarm the bees and in a few moments uncovers the frames, takes the combs out and examines each one until the queen is found. It usually requires about as much time for an expert to find a queen as it does for one to read these few lines descriptive of the method.

The beekeeper who is bound to succeed will soon find plenty of methods to do all the required work about the apiary. If one method fails, he tries another.

Another way to find a queen and one which I think is a good idea is given by R. L. Taylor of Lapeer, Mich. This plan is somewhat similar to the one given above, though it may be an easier method when a large colony is to be looked over for a *virgin* queen. Mr. Taylor's method is as follows:

"If the colony to be operated on is not already provided with a queen-excluding honey-board, or a cap of some kind, provide it with one, and in every case see that they fit loosely, so that they may be quickly removed. Now, with the smoker in one hand, and a small stone in the other, thump on the rear end of the brood-chamber, for about two or three minutes, puffing occasionally six or eight strong blasts of smoke directly into the entrance of the hive; then quickly remove the super or the honey-board, turning the latter bottom side up on the ground in front of the hive, when you will most likely find the queen among the bees.

If you are not successful in finding the queen the first time, be assured that either your eyes are not trained to recognize the queen readily, or that you have not carefully followed the directions."

Years ago and a long time before the plan of Mr. Taylor's appeared in the bee-papers, I gave nearly the same method for finding a queen as now recommended by Mr. T. We had no metallic honey-boards in those days. Wood-caps were used on all Langstroth hives. Our plan was to use smoke at the entrance and drum on the hives to alarm the bees. Then the honey-board was removed and the queen was found on it; if not, the cap of the hive was placed on and the bees driven from the combs into it. The cap is then removed and examined for the queen which is usually found therein; if not, another cap is used and the bees drummed again, and so on till the queen is found. After the queen is found the bees are left to return to the hive at their pleasure.

The best way to find a queen is to go

at it with a determination to find her before giving up the job.

All should remember that an operation of this kind ought not to be performed in the apiary in the middle of the day when the bees are inclined to rob. It is usually safe to open a hive just before sunset, provided there has been no robbing in the apiary for a week or longer. If it is actually necessary to find a queen in the middle of the day, remove the hive to a room, darken all the windows but one and then proceed. When the queen has been found, return the hive to the stand and open the window and door and let the bees return.

The bee-room—how arranged.

A room in which to handle bees is an actual necessity with me. I could not get along without it any more than the bees could without a hive. The queen dealer must have a convenient place for doing most of the work required in his cell-building operations. I have found that even the small beekeeper has a little workshop and honey-room attached, and a convenient place in which to keep his bee-fixtures. A room for handling bees should be kept separate from the workshop or honey-room.

The bee room should not be too large. One window is sufficient to furnish all the light needed. If the room or building has several windows, all but one should be darkened while a colony is being operated upon. This one window should be protected from robber bees from the outside by screen wire fastened to a frame and the frame hung the same as if used as a door, so that it can be opened and shut as convenience and occasion require.

When a large colony is taken to the bee-room and opened, nearly a quart of bees will fly to the window. As no robber bees can enter the room, and as no trouble will be experienced from the bees that take wing, there will be little need of hurrying the work. When the object for which the bees were removed to the room has been accomplished, the hive should be placed on the stand and these bees on the window allowed lowed to go home.

How to warm the bee-room.

In cool weather, I find that the bee-room must be warmed in order to do the work properly and prevent the bees that take wing and the brood from chilling. In a small room a large stove would furnish too much heat and would be in the way. In order to get as much room as possible, a small kerosene stove, one having two wicks, is used. Even this stove is sometimes too large and gives off more heat than is required.

Another thing in my bee-room and one which I have found an indispensable article in years past, is a honey-bench. This is made of matched boards and is secured firmly to the side of the room. All small pieces of honey-comb are placed on the table, the back end of which is elevated three inches, so that all loose honey will run down and find its way into a conductor at the front end, thence into a receptacle under the bench. To keep the bench clean and sweet, beeswax and rosin are melted together, and while hot is turned upon the bench, then a hot sad-iron is used to burn the mixture into the grain of the wood. All the work of transferring, cutting combs, etc., is done on this table.

Transferring is another thing I use this table for. I suppose that within the past thirty years I have purchased nearly one thousand colonies of bees in box-hives, and all had to go through the bee-house. There is not a day between May 1 and September 1 that I do not take from one to six colonies of bees in the bee-house to manipulate in some way.

In winter the bee-room is utilized for the storage of the surplus combs, and for all things used in the apiary in the summer.

What the queen-dealer and practical bee-keeper need in the apiary.

It would be folly for any one to undertake beekeeping without a good bellows smoker. With one of the *best*

smokers in use, there is no trouble in handling the most vicious colony of bees in the apiary. Those who attempt to open a hive of bees and remove the combs without a proper smoker will, in most cases, have reason to regret it as more or less stings will be the result.

Fuel for smokers.

Various kinds of fuel are recommended to burn in the smoker. Most any dry, rotten wood will burn and make a good smoke; but rotten elm wood is the best material I have used in the bellows smoker. It is prepared in this way: when in a hurry and you cannot wait for it to dry in the sun, put a quantity of the "spunk" in a baking-pan and dry it in the stove oven when there is not too much fire in the stove. The wood easily ignites when dry and none should come in contact with the stove oven, as it is not an easy matter to preserve the wood if it gets on fire.

One word of caution. Never take the smoker into a building unless obliged to do so. Should a coal get out the pipe and not noticed, the building would be likely to go up in smoke. The smoker is a very dangerous thing to have about anything of a combustible nature.

The honey-extractor.

Those in a good location for honey, that is, those who keep bees where there is plenty of forage throughout the summer, or in localities where basswood and clover abound in an unlimited quantity should use a honey extractor. Sometimes it will be found necessary to remove the bees to the bee-room in order to use the extractor. When bees are gathering honey it is perfectly safe to use the machine in the open field. Bees are pretty apt to commence robbing just about the time the flow of nectar begins to grow scarce. Therefore if you are a llttle cautious at this time it will save much trouble. When bees once get well under way in robbing, it is a difficult thing to stop it.

Brush for removing bees from the combs.

It is often necessary to remove bees from combs and to do this some sort of a brush or broom must be used. Of the many things recommended for brushing bees from the combs there is nothing I have used so effectual as a small corn-broom, similar in shape to such a broom as is used for brushing clothes; but one that is used for that purpose is rather too heavy for brushing bees from combs. When a proper broom cannot be had, I cut off near the binding abont half of the straws. This will slip over the bees without killing any, but will be found effectual in removing all the bees after awhile.

During the summer when the grass is five or more inches long, it will be found first-rate for brushing bees from combs; but for work in the bee-room the broom is the best and more convenient.

[*To be continued.*]

Missing copies of the Api.

If our subscribers who do not get the APICULTURIST before the tenth day of each month will notify us promptly, they will do us a favor, and save us considerable trouble.

We usually mail the API the first day of each month or a few days before.

The Beekeeper's Directory.

A new book is on our desk. It is entitled "The National Beekeepers' Directory," and contains a classified list of 2,000 beekeepers of the United States and Canada (including about 200 supply dealers), with essays and hints regarding the successful management of the apiary. It is "compiled by Henry Alley, Wenham, Mass." It contains 140 pages, one-half of which are devoted to names and addresses of beekeepers, and the other half to the practical hints mentioned above, including Mr. Alley's "method for rearing queens in full colonies, while a fertile queen has possession of the combs." Price by mail, $1.00 bound in cloth.—*American Bee Journal.*

PRICES OF SUPPLIES

—AT THE—

BAY STATE APIARY,

WENHAM, MASS.

Bee-Hives.

We offer only the Bay State hive for sale.

One hive in the flat,	$ 3.00
Six hives " " "	15.00
Twelve " " " "	27.00

All parts of the Hive are included in the above, frames, sections and all but paint and nails.

Sections.

One-piece sections	per 1,000	4.50
" " "	500	2.50
" " " "	100	.60

Langstroth Frames.

Material for (hanging) frames for Standard L. Hive per 100.....$3.00

The frames we use are so constructed that the bees will not build comb between or over them at the top, nor fasten the section case and frames together, as is the case when the common top bar is used.

Nailing Block for Frames.

No one can do good work at nailing frames without a proper board to nail them on. We can send one, by express, that will do the work nicely price,..... .50

Comb Foundation.

We can supply the best brands at manufacturers' prices, and ship direct to our customers from the nearest factory. We also keep a quantity in stock to fill small orders.

1 to 10 lbs., for brood frames.....45 cts. per lb.
1 " " " " sections.....50 " " "

We keep in stock but one dimension of brood-foundation 17⅛ x 7 inches. This is large enough for any L. frame and is just right for the Bay State frame.

Perforated Zinc.

This we can supply in any quantities, shipped with other goods, per foot.....12 cts.

If sent by mail, add 10 cents per foot for postage.

Honey Extractors.

THE E. T. LEWIS & CO. EXTRACTOR,

No. 22. 28 inches in diameter, 25 inches high, 2-frame for any size up to 12½ x 19; room for 25 lbs., honey below reel, and the best extractor ever made for. $10 00

We sell this size only as it is the most convenient to use of any found in use. This extractor is adapted to any frame in use.

Honey Knives.

Root's knife, by express,	.70
" " by mail,	.75

Bee Veils.

The veil has a rubber band which draws the top together; it is then placed over any hat and drawn until the elastic is over the hat band.

Common net, by mail,..... .35

Smokers.

Bingham & Hetherington's only.

By mail, $1.75; by express,..... 1 50

Queens and Full Colonies.

Queens.

Prices.

Untested queens, each,	$1.00
Selected " "	1.25
Tested " "	2.00
Extra breeding queens, the best we have, each,	3.00

Our untested queens are sent out before any of their brood hatches. 95 per cent will prove to be purely mated. Safe arrival and purity guaranteed in all cases.

Carniolan queens and bees at the above prices. Our strain of this new race of bees cannot be excelled.

Full Colonies.

We consider eight frames well filled with brood and covered with bees a full colony. Prices of such in B. S. hive, including one set of sections, $12.00. Purchasers to pay express charges. Safe arrival guaranteed.

Fourth Edition of the

Beekeepers' Handy Book, or Thirty Years among the bees. 75 pages, with illustrations, by mail.....50

Queen-rearing Apparatus.

Beekeepers who rear queens, whether by the Alley method or by any other, should have the apparatus here described. The SWARM-BOX and QUEEN-NURSERY are articles that no person who rears queens ought to dispense with.

By using the swarm-box a large colony of bees can be confined a long time or transported safely hundreds of miles. It is a very useful article about the apiary at all times during the season.

Sent only by express, price, $1.25.

When a colony swarms and it is desirable to preserve the queen-cells, and no nuclei are at hand, the Queen-nursery in such cases will be found invaluable; the cells can be placed in them and they need no further care for a week or more. Virgin or fertile queens can be kept in the nursery for several weeks. We have sold a large number of queen-nurseries in years past.

The following articles are also used in rearing queens, a full description of which can be found in our work upon queen-rearing.

	Express.	Mail.
Queen-nursery (of 21 cages).....	$1.25	$1.60
Swarm-box.....	1.25	
Fertilizing-hive (complete)	.50	
Fumigator for using tobacco..... ...	.25	.30
Cone-feeder.....	.15	.20

To make the lot complete, we put in each package one drone-and-queen-trap, one copy of THIRTY YEARS AMONG THE BEES, and send all by express for..... .... $4.50

All these articles can be packed in the swarm-box and sent safely by express or freight.

Brooms for Brushing Bees from Combs.

We find a small "corn-broom" best for this purpose as it does not injure or irritate the bees, and will do the work better and quicker than anything else used for the purpose.

1 broom, by mail	.25
1 " by express.....	.20

HOW TO REMIT MONEY.

Remit by registered letters, cashier's check or express orders. If sent by money orders or postal notes, have them made payable at the Salem, Mass., P. O. Make all remittances payable to the order of the AMERICAN APICULTURIST.

Address,

AMERICAN APICULTURIST,

Wenham, Essex Co., Mass.

SUPPLEMENT

TO THE

AMERICAN APICULTURIST.

WENHAM, MASS., APRIL, 1890.

That hundred-dollar queen.

In the October (1889) issue of the APICULTURIST, we gave a brief description of one of the valuable Italian queens we have in the Bay State Apiary. We have but a few copies of that issue left, and as the demand still continues for that particular number by beekeepers interested to know the history of what we consider the most valuable Italian queen bee in the world, we find it necessary to devote a little more space in the API in order to acquaint our hundreds of new subscribers with the history of this wonderful colony of bees.

This queen was reared in the Bay State Apiary in the season of 1889. As soon as the young bees had commenced to work in the fields we saw that this colony possessed real merit and were superior in many respects to any other bees in our apiary. A brief description of the good points of this colony can but help to interest our readers, new and old, as we now can add another good feature (that of wintering) this colony possesses in addition those good points mentioned last fall.

Of the fifty-eight colonies of bees in the Bay State Apiary including German, Carniolan and Italians, there is not one colony that has wintered quite as well as this one. There have been no dead bees about the hive, mould nor moisture. The bees have remained perfectly quiet all winter. The hive is now crowded with bees. This colony was the first one in the apiary to carry in pollen, a thing they did on March 14, three days earlier than we ever before knew bees to gather pollen here in New England.

When working on golden rod last September this colony commenced work an hour earlier and worked an hour later than any other bees we had; consequently they stored enough honey to carry them through the winter. This, in our opinion, is one of the best features a colony of bees can possess.

The queen is one of the most prolific we ever saw and the disposition of the workers is all that the most timid person could desire. I can remove the honey-board or top-board at any time and not even one bee will fly from the combs. Have never used any smoke when opening this hive and removing the combs, and have not been stung by these bees.

I am free to state this colony of bees is the only perfect one we have seen in our thirty years' experience in beekeeping. Every good point that bees should possess is combined in this one colony. There is not a bad or undesirable feature about them.

We shall rear 3,000 young queens from this queen the coming season, and all will be fertilized by drones not at all related to the mother. No

in-and-in breeding is allowed in our apiary in order to produce that handsome yellow color, which some desire. The queens we shall send out will be beautifully and purely marked. The purity, extra quality and safe arrival of all queens sent out from our apiary is guaranteed. Don't fail to try one of these queens if you desire to see perfection in bees.

The API for one year and one select queen of above strain will be sent for $1.50.

A good thing if it works well.

Batavia, Jan. 11, 1890.

DEAR SIR:—I saw in the *American Bee Journal* that you have a self-hiving arrangement so that a bee-keeper can go away from home and in case his bees swarm they will hive themselves. I would like to get one if they do not cost too much.

I have talked with a good many beekeepers here and they thought by the looks of the illustration in the *Bee Journal* that it would be a good thing if it works well and the price is not too high.

There are a good many about here who keep bees and they lost a good many swarms last season. I think the Swarmer will take well here. I lost several swarms last summer; they skipped out while I was away from home. Wish you would answer the following questions.

1. Can't a queen get out of the same place a worker bee can?

2. Will the swarm-hiver interfere with the bees during the working season?

3. Does the swarmer prevent the drones from flying?

1. A queen is larger than a worker bee and cannot pass through the perforated metal while the worker bees can easily do so.

2. The metal does not very much interfere with the bees; in fact it seems to make no difference whether the swarmer is on or off after the first hour or so.

3. No drones can pass the metal, as the drone is larger than either queens or worker bees.—ED.]

Notice.

Will each of our subscribers kindly send us on a postal card the address of a few intelligent, reliable, beekeepers. A copy of the "API" will be mailed to each one. The names of the "know-it-all" beekeepers are not wanted.

What Dr. G. L. Tinker says of the trap.

FRIEND ALLEY:

Your drone-and-queen trap I and hundreds of our *best bee men* now regard as an invaluable invention.

Who will reply?

I wish to ask a question in your API.

What is the best way to prepare or cleanse crude wax for the foundation mill, where one hundred pounds or less is made?

P. L. S.

The swarmer a good thing.

Le Clair, Iowa.

MR. HENRY ALLEY; If the swarmer works all right it will be a great thing for beekeepers, especially those who have out-apiaries.

MARION MILLER.

DuPont, Ga., Oct. 8, 1889.

MR. HENRY ALLEY: Is it too late for you to ship me one or two more queens? I am well pleased with the one sent me. They are the most gentle bees I ever handled.

A. DUNCAN.

Like the trap very much.

Cazenovia, N. Y.

MR. ALLEY: I have fifty of your drone-and-queen traps in use and like them very much. Herewith find amount for individual right to manufacture them for my own use.

W. W. HEATH.

A good Carniolan queen.

Martinsville, O., March 4, 1890.

MR. HENRY ALLEY:—

DEAR SIR: Please change the address on my paper from Wilmington, O., to Martinsville, O., Am well pleased with the API, and could not do without it. The Carniolan queen I got of you last September, has three frames of brood in a five-frame stand at present. Her workers are beauties.

Yours truly,

J. E. THRUSHER.

The drone-trap and swarmer.

Flint, Mich.

H. ALLEY:—

Last spring I purchased some of your drone-and-queen traps of Thomas G. Newman & Son, Chicago.

I like them very much and they seem to take well with my customers.

The new self-hiving arrangement is, in my opinion, going to be a good thing.

M. S. WEST.

Chaff packing under hives.

West Nicholson, Pa.

MANAGER AM. API:

I am a novice in beekeeping and would like to see the following queries answered in the API.

L. L. TRAVIS.

1. What is the proper distance from the ground to set hives to winter on summer stand? Two feet.

2. Is chaff packing under the hives an advantage in winter? No.

NOTICE. Some of our western friends have an idea that the *American Apiculturist* is published for the sole benefit of New England beekeepers. This is a mistake. We have more than double the number of subscribers in any one of the western states than we have in all the six New England states combined. Nearly all of our contributors are outside of New England. We never could think of publishing a bee-paper for the few beekeepers residing east of the Hudson river.

Individual rights to manufacture the drone-and-queen trap.

So many beekeepers desire to make the drone-and-queen trap that we shall offer one trap by mail, and the right to make and manufacture them for one's own use, for the small sum of $1.50.

If any one desires to make the bee-escapes, the same as is used in the traps, and the same things as are used for bee-escapes for getting bees out of sections, we can furnish the tools for $3.00. They can be sent by mail for 25 cents extra.

Five of the tubes are made at one blow with a heavy hammer. In one day a smart man can make 1000 of the tubes.

The Beekeepers' Directory.

Bismark, Ill

Directory at hand and I think it well worth the money.

S. B. STRODER.

The best of all.

Mount Carmel, Ill.

EDITOR AM. API: Herewith find 75 cents for renewal of your paper which to my mind is best of all.

How any one can get along without the drone-trap is a mystery to me. We have six in constant use and the neighbors would like to borrow if we could lend them.

LIZZIE HURLEY.

Finest bees he ever saw.

Sedalia, Mo., Mar. 10, 1890.

MR. ALLEY. I got two Italian queens from you last fall, and I put one with an old colony of bees that had been queenless over ten days and the bees killed her; the other I put with a young colony and she is doing finely. The queen did not look quite so yellow as some Italians, but I must say that the young bees from her are the finest and largest Italians I ever saw, and for working qualities and gentleness, they cannot be excelled.

Yours truly.

FREIDRICH SCHACH.

They take the cake.

MR. ALLEY: I bought three queens of you in 1888. They were not well marked, but for workers they "took the cake." Neither of these queens cast swarms. They stored in pound sections, eighty-one, eighty-two and ninety-two pounds of honey respectively, from white clover.

Our bees are breeding rapidly; they carried in pollen all through December.

A. H. NOBLE.

Best colony of bees yet.

Gaylordsville, Conn.

MR. ALLEY: I have eighteen colonies of bees. The best one is from the queen you sent me in July, 1888. I took from this colony ninety pounds of honey and got two good swarms. All good and solid for winter.

THOS. D. FLYNN.

A good word for the drone-and-queen trap

Port Jervis, N. Y.

Editor AM. API: Please send me the price of the P. metal for the drone-and-queen trap. I used them the last season and had excellent success with them.

JOHN SCHMIDT.

THIRTY YEARS AMONG THE BEES.

BY HENRY ALLEY, WENHAM, MASS.

EIGHTY PAGES. BOUND IN PAPER, BY MAIL, 50 CENTS.

This work gives the author's THIRTY YEARS' experience with bees, and, also, a full description of the best and latest methods for rearing queens in full colonies, while a fertile queen still has possession of the combs. A practical method for rearing queens above a queen-excluder and by queenless colonies is also given.

THREE THOUSAND COPIES of THE BEEKEEPERS' HANDY BOOK, giving our methods for rearing queens were sold. The work has been rewritten and is now entitled "THIRTY YEARS AMONG THE BEES."

Every part of the business of rearing queens is minutely described, and in such a clear and practical way that even the novice can make queen-rearing a success.

THE BEEKEEPERS' DIRECTORY.

This is another work that should be in every beekeeper's library. It gives you all the PRACTICAL PART OF BEEKEEPING. Mr. Doolittle gives his method of "PREPARING BEES FOR THE HARVEST;" Dr. G. L. Tinker, "HOW TO WINTER BEES." In fact, the DIRECTORY contains all the PRACTICAL INFORMATION that one need possess in order to make beekeeping a success.

Price by mail, cloth, 75 cents; paper bound, 50 cents. The above books, paper bound, will be sent by mail for $1.

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WENHAM, MASS.

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AND SECURE A DAUGHTER FROM OUR

HUNDRED-DOLLAR QUEEN?

One dollar-and-fifty-cents pays for the AMERICAN APICULTURIST one year and one of these queens.

A FULL DESCRIPTION

of this wonderful queen and her colony is given on first page of this Supplement.

Sample copies of the API and our price-list mailed free to any address.

To anyone sending us four (4) new subscribers with the cash ($3), we will mail one of the above queens free.

Bear in mind that we warrant the purity of all our queens and guarantee safe arrival to all parts of the Union and Canada.

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THE * AMERICAN * APICULTURIST.

A JOURNAL FOR THE NOVICE AND EXPERT IN BEEKEEPING.

PUBLISHED MONTHLY. SUBSCRIPTION PRICE, 75 CTS. PER ANNUM.

HENRY ALLEY, - - - EDITOR.

VOL. VIII. WENHAM, MASS., MAY 1, 1890. NO. 5.

Entered at Post-office as second-class matter.

The Editor's Department.

Editorial points.

Don't fail to take a peep at Brother Pratt's bee farm. You can find it in this issue.

Be sure to look over the advertisements in this issue. There are lots of things you all need to make beekeeping a success.

We wish to say to our readers that the price of wax has advanced and dealers have raised the price of foundation accordingly.

Bees in the Bay State Apiary have been doing well all the spring. No dwindling in any colony, though it seems to us that the weather has been much colder than usual for April.

We are getting circulars from nearly every dealer in the world which we cannot notice for want of space. Then, again, we would not be doing justice to our regular advertisers by giving free ads. to those who send us only their circulars.

Some people will tell you that no one wants Self-hivers. Some men never have made any advancement in bee culture, and seem unwilling that others should. The advice of such parties is worth but little to any one.

Although each issue of the API gives instructions for remitting money, our friends persist in sending money-orders on all the post-offices in this county. Before you purchase a money order look and see where it should be made payable.

Prices of supplies at the Bay State Apiary.

We will say to those who call for our price-list that we have none except what is found in each issue of the API. Please look it over. If you do not find all you want you can send the order just the same and we will get the goods we do not keep in stock of those who have them.

After May 10 the price of the Swarm-hiver will be $2.50 per half dozen and $4.00 per dozen. After manufacturing several thousands we found the profits not what they should be. When the price was fixed it did not occur to us that so many dealers would care to handle them. Now supply dealers from all quarters are calling for them.

The supply trade is booming. If there is delay in filling your orders you must understand that the other fellows got in ahead of you. Don't wait until you want to use supplies before ordering. Give the dealer two weeks time after ordering to ship the goods. This will not be necessary in all cases; yet there is no reason why all dealers should not have ample time to fill their orders.

We are getting inquiries by every mail from all parts of the country from beekeepers wishing to know if we have queens ready to ship. We have not and shall not have any queens to ship till after May 20. Commencing with the first week in June we expect to ship one hundred queens each week. All will be reared from our famous $100 queen.

If the readers of the API could come to our apiary on any warm day and see these bees at work we should be pretty sure to get their order for one or more queens. On April 30 this queen with about one quart of her bees will be taken from her colony and transferred to a small 5-comb hive from which we shall draw one thousand eggs each day until Sept. 20.

You will find our price-list in the Supplement sent with this number.

HOW TO INTRODUCE QUEENS.

WRITTEN FOR THE AMERICAN APICULTURIST.

By C. C. MILLER,
EUGENE SECOR,
E. L. PRATT,
GEO. F. ROBBINS,
M. A. KELLEY,
DR. G. L. TINKER,
H. D. CUTTING,
MRS. H. HILLS.

Number One.

DR. C. C. MILLER.

How to introduce queens—the Simmins' plan—Caging—Introducing queens to sealed brood.

I can only answer this in a rather one-sided way. That is I can give my own experience, and that has not been very much in the usual line of caging the queen so long a time and then freeing her. Years ago I put a queen in a hive which had no queen, with no preparation or introduction whatever—just put her in. She was accepted all right and I followed up the same plan for a long time before I met any loss, and I'm not sure but I would follow the same plan now in preference to caging. I am free to confess, however, that I never tried the caging plan more than perhaps three or four times if as many as that. Perhaps I hardly ought to say I introduce the queen with no preparation, for the colony must be in a certain condition. I'll give you the minutiæ. After the colony has been so long queenless that they have started queen-cells, I take out one of the combs containing brood, place the queen directly on the brood, put back the comb and shut up the hive and that's all. This I generally did when bees were gathering honey, and it is possible it would be unsafe in the fall. Later on I fell upon another plan which has been published as the Simmins plan, although it was original with me as well. Where a queen has been raised in a nucleus in my own yard, the plan is very simple, and even surer than the one given. I doubt if it is necessary to wait till the bees have started queen-cells. I simply go to the nucleus and lift out the frame on which the queen is found, and put it in the queenless colony, comb, bees, queen and all. I don't need any other plan than one of these two for a queen of ordinary value.

A queen of extra value, as an imported queen, deserves and receives extra care in introducing. I generally know beforehand when I am to have an imported queen, and I manage to have some frames of brood with no unsealed larvæ. I am careful to brush off every single bee, and put these frames in a hive, then put in the queen and shut up the hive bee-tight. This hive must be put in the house where it will be warm enough to keep the brood from chilling, or else it must be put over a strong colony with an opening through which the heat can ascend from the lower to the upper hive, but this opening must be protected by two pieces of wire cloth at least one-fourth inch apart so that there can be no communication between the bees in the two hives. I should have said that there must be brood just hatching out in the new hive and this will soon make force enough to start housekeeping. In

two or three days this hive may be placed where it is to stand, and the entrance kept very small till enough bees have hatched out to protect themselves against any assault. You will see that by this plan there is no more possibility of a queen's being lost than there is any time among her own bees.

The last imported queen I introduced with less care, but I suppose a little more risk. I took some frames of brood with their adhering bees, being sure no queen was with them, put them in an empty hive and put the hive on a new stand. In other words I made a strong nucleus without using any means to make the bees stay where they were put. This was done a day or two before I expected the imported queen. Of course all the old bees returned to their old stand leaving nothing but a lot of queenless young bees ready to take up with any queen offered, and all I had to do was to put my queen on the top of the frames and let her run down.

Marengo, Ill.

Number Two.

EUGENE SECOR.

Introducing queens an important subject—Introducing queens at swarming time—Advice to the novice.

That is really an important question for the beginner who wishes to start right by getting the best bees. Very few are so situated that they can go to a reliable breeder and buy a good queen already introduced and laying, and take the whole thing under his arm and go home happy. Most people are obliged to get their stock of workers from their neighbors, or if not compelled to they ought and then send off and get a queen by mail. That's the sensible way to begin. It's very nice to read how the veterans introduce queens into full colonies and not lose one per cent., but woe to the novice whose hand trembles when he attempts to "go and do likewise." Even if queens don't cost but a dollar apiece, he is apt to be nervous when he thinks of the possibility of never seeing her majesty again. Perhaps he don't care more for the dollar than for the chagrin of a failure, especially when he wants to show his behind-the-times neighbor "how to keep bees." In such event the safe way for him to proceed is to form a nucleus with two or three frames well filled with hatching brood from the old colony, contract the hive they are put in with division-board or boards, and the entrance with blocks or otherwise, so that only a bee or two can get out at a time and to do this a day or two before his queen arrives, so that the old bees will have returned to their old home. None but young bees being left, there is little danger of losing the queen if done at swarming time or when bees are prosperous. It is not safe to swap captains in a battle. Bees are jealous of a stranger when a battle for existence is imminent. Having so often learned by experience "how not to do it" by some other method, the above is about the only plan I would recommend to the novice.

"Larger crafts may venture more,
But little boats should keep near shore."

Forest City, Iowa.

Number Three.

E. L. PRATT.

Introducing by the cage system and the seventy-two hour plan—Finding an old queen, etc.

It is not much of a job to introduce laying queens successfully with the cages and knowledge we have on the subject. The conditions under which new queens are accepted can be summed up in the following few words: Bees must be aware of their queenless condition before a fertile queen is given in their presence. They should be allowed to satisfy their cell-building desire before a virgin queen is presented them.

Perfect quiet on the issuing of the queen.

The best method for introducing a fertile queen is to place her in a cage that will allow a large plug of candy for the bees to eat away before they can get at her. The improved shipping cages are provided with this so the purchaser of a queen is not compelled to putter over special introducing cages. With ordinary untested queens, we would recommend taking away the old queen and at once placing the new one, as received, directly over the cluster, wire cloth down, or inserting the cage in a frame having brood in it in such a manner that the hive bees can get at the plug of candy, or hanging the cage between two combs containing brood, and leaving them strictly alone for one week.

With valuable queens we generally leave the colony queenless for seventy-two hours before placing the cage in the hive. Then we do it just before dark.

To make a dead sure thing with virgin queens we follow the seventy-two hour plan and plug of candy.

To introduce a queen with the Pratt cage: remove one-third of the thin lid with a pocket knife, so as to expose the wire cloth, draw the cloth at the sealed end and insert the cage between two combs of brood, directly over the cluster, wire down; or, better, slip it into the corner of one of the frames containing brood. Do not remove any of the candy; let the bees do that.

You will find when you examine the colony a week after the cage was put in, that your new queen is safely and soundly installed in her new home.

Do not remove the thin board from over the candy. If you should happen to split it off it should be tacked on again before putting into the strange hive. If there is not enough candy left in the cage, stuff in a wad of common newspaper before giving the cage to the queenless colony.

When I am asked how to find the old queen without taking out the frames, I answer: drum them out in the old way and hive them back again after adjusting a piece of perforated zinc or a trap before the entrance to exclude the queen. New queens can be introduced to offensive neighboring box-hives in this way.

Marlboro, Mass.

Number Four.

GEORGE F. ROBBINS.

Good ideas on introducing queens — The secret of introducing queens successfully — Several practical methods given for introducing.

I have no new methods to offer for introducing queens. I think it would be difficult to produce anything new in that line. Methods enough have been tried, with success or failure, to stock a volume with their recital. I can do little more than give those which I have tried with most and least success, point out that which I regard as safest, and the reasons therefor.

The first plan I ever tried, and tried while in my novitiate, was the least successful. That was to cage the queen for from one to three days in the hive and then release her. Some colonies I could never get to accept a queen in that way. I regard it as the poorest method I know. Success by that plan is not impossible nor infrequent, but it is neither the safe way, judging by experience, nor the correct way on general principles. I think it is safe to say that, all things considered, the less the natural order of things in the economy of the bee-hive can be disturbed, the better. We should not interfere with its internal condition unless we are certain its interests demand it. This is especially true where the relations of the queen to her family are involved. Bees are more sensitive on that point than upon any other. One certain queen and one only, is the family law. Bees are perhaps not less disposed to allow a strange worker than a strange queen in

their hive, but they are keener to scent any such change. Hence to introduce a queen successfully, we must study hard to do it in such a way that the bees will not detect it. Derange the affairs of the colony as little, and keep the bees as much in ignorance of whatever derangement is made as possible. Anything out of the ordinary course, where the queen is concerned, arouses suspicion in their little minds and the recognition of outside agency especially awakens distrust. Reports have been published of queens being superseded whose wings had been clipped. I believe such a thing is very possible. But the most essential item is for the queen to feel thoroughly at home. A queen in a strange hive cannot do this. Everything is foreign to her. She feels that she does not belong there and can but show that she feels it. In the mind of the bee there can be no stronger evidence of an interloper. This outside agency I have mentioned, is the next best evidence; and this is the very state of things we are apt to have when we turn a queen loose on a comb.

How then shall we get the right conditions to introduce a queen? Allow the bees to do the introducing themselves. Let them release the imprisoned queen. There you have, in my opinion, the great secret of successful introduction. If your queen comes in a Peet cage, drive the tin points through the comb, press the side on which is the tin slide against it, and gently remove the slide. The bees will work their way through the comb into the cage. If in a cage with only one open side covered with wire cloth, fold back the cloth covering the apartments containing the candy, and insert the cage between two combs with the open side toward the centre of the brood nest. If you want to, cut out a piece of comb and insert the cage in the frame. In any case shut up the hive and let it severely alone. The bees proceed to eat the candy or gnaw the comb as the case may be. As to how the cage and its occupants got there is forgotten in the operation. While the process goes on, the bees in and out of the cage are becoming acquainted. A little orifice is made, they touch noses, the orifice grows larger, a bee passes in, another comes out. Soon they are moving back and forth, in and out. Very likely there may be a lingering suspicion that all is not right, that *that woman* does not belong there; but if left undisturbed it will pass off. There may be something in the prevailing notion that the queen and attendants acquire the scent of the colony, but I more than doubt it. Be that as it may, to open the hive at this juncture would probably frighten the queen, heighten any lurking doubt or distrust on the part of the bees, and spoil it all. I prefer not to look into the hive for at least four or five days after putting in the queen. I believe that the balling of queens one or more days after being released is always due to some such disturbance. I have never failed to get a queen accepted by this method, and I believe it to be the best and safest way for a novice to introduce. I lost a queen last summer soon after she got to laying, after I had examined and found her all right. Another time I found the bees pursuing and clinging to a queen, with evident intents to ball her, about twenty minutes after I had first found her. I smoked the bees, caught the queen, uncapped a little honey and placed her majesty upon the dauby spot and left her to wade out if she could. She is alive and laying now. I have introduced a queen from my own apiary to a colony that had come out of winter queenless. I have also removed the queen at different lengths of time before introducing. But I advise the novice not to take out the old queen until he is ready to put in the new one.

A safe but slow and wasteful method, is to take two or three frames of hatching brood, and your queen, put them in a hive together, close the hive and set it in the shade if the weather is very hot, or in a warm room if very cold. In a few days open the entrance and your queen is introduced. I do not recommend that plan.

Queens reared in my own apiary I introduce, so to speak, largely by uniting. I let the cell hatch in a nucleus which I set down beside a hive I want to requeen. After the queen gets to laying, I destroy the old queen and unite; but, strange to say, I have lost several queens in that way, whereas I have never had a failure by the use of the self-introducing cage, as I have said.

Mechanicsburg, Ill.

Number Five.

M. A. KELLEY.

Introducing fertile and unfertile queens—The novice should not experiment in introducing queens.

This important yet simple operation may be performed in several ways. Several conditions may modify any ordinary plans, but they are alike as to resul s. A fertile queen may be given to a queenless colony at any time when honey is coming in by simply caging her on a comb and allowing the bees to release her by eating out the feed that all good cages are provided with. A virgin queen may be given to a nucleus of young bees by taking all brood and eggs out of their hive before the queen is put in. It is, my opinion, however, that the novice should let others experiment with virgin queens.

If any one has an extra valuable queen and wishes to run no risks let him take a queenless nucleus of young bees and after removing all the combs keep them shut up a day, and then he can give them the queen by hiving her with them into a hive that contains combs that have in them no eggs or larva. There is another important thing that should not be neglected and that is to subscribe for and read the bee journals. Do not depend on a single article for information but read all the papers and books you can.

Milton, W. Va.

Number Six.

DR. G. L. TINKER.

Best method for the novice to adopt to introduce queens.

There are many ways to introduce queens that are usually safe in the hand of the expert apiarist yet nearly all of the plans heretofore advised are not entirely safe in the hands of the inexperienced. Even during a good flow of honey when the bees are least inclined to attack strange queens, there is an occasional failure. And these failures are due almost invariably to the fact that a colony of bees do not appear to regard themselves queenless as long as they possess brood from which a queen may be reared. Hence, with all of the direct plans recommended, which provides for liberating the new queen within three days from the time of removing the old one, there will ever exist an uncertainty whether the bees decide to raise a queen from their brood or accept the one given to them.

When we remember what the natural mode of requeening is, the wonder is that a stranger queen can be introduced at all until the bees have constructed queen cells and capped them over. From that moment they live in expectation of a queen. If all of their queen cells are now destroyed and the new queen be introduced in a cage plugged up with a little bee candy, she will be joyfully received and from that moment there will be the utmost harmony between queen and workers. By all of the direct methods of introducing there seem to be a few dissatisfied bees that regard the new queen as an intruder, so there is not the perfect

harmony that should exist in a successful method of introducing.

Hence, I now advise the following method to the novice. Order your queen; and, when received, remove the queen to be superseded and lay the cage with the wire cloth side down bee-space from the top of the brood frames. It is only necessary to take off the thin cover of the cage exposing the wire cloth so the bees of the hive can discover the new queen and her accompanying bees. If there is not enough bee candy in the cage to last five days it should be put in. With my shipping cage there is a wooden plug on one side that may easily be removed and more candy be put in. If the hive is so arranged that the cage cannot be laid on the frames without coming in contact with the cover, make a shallow rim to fit on the hive; then put in the caged queen and bees and put on the cover. The hive is then left for five days. Then go to the hive and take out the cage and smoke the bees of the hive. Take out one comb at a time and shake off the bees so every queen cell can be seen and destroyed. It is best to take time in looking over the comb so as to be *sure*, as the only danger lies in overlooking a queen cell, which is, however, not great. Then remove the plug in the cage, and if the bee candy is eaten out put in enough to close the hole, put back the cage and close the hive. To make the matter a little more safe, the worker bees may be let out of the cage before returning the cage, but either way seems to be an infallible method.

It is a little more trouble to introduce a queen by the above method, but how many times has the novice regretted that he did not take a little more trouble! He sends for a queen, she is received and is so beautiful and full of promise that money would hardly buy her. He follows some of the direct methods of introducing, and in the course of three or four days finds his queen near the entrance of the hive on her back, having been balled to death. His hopes are blasted and then he feels that if a little more trouble on his part would have saved the queen, he would not have minded it.

New Philadelphia, Ohio.

Number Seven.

BY H. D. CUTTING.

Finding queens in full colonies—How to handle a queen—Immediate introduction, etc.

The raising and introduction of queens always possess a great amount of fascination, especially with the novice.

There are so many different methods of introduction that after the novice has read them all, he is "all at sea" which to adopt.

I presume every beekeeper has his own peculiar method of introducing queens, but is it as good as the method of some one else? I have always advocated that where you are successful with your method "stick to it."

The first thing to do when you are ready to introduce a queen is to find the queen in the hive that you wish to replace.

Several years ago T. F. Bingham, of Abronia, Mich., gave a pointer on finding queens as follows:

"Blow plenty of smoke in at the entrance and as quickly as possible remove the cover, and you will find the queen on top of the frames."

Later, R. L Taylor, Lapeer, Mich., advocated the use of the "honey-board;" "use the smoke as before, when you will find the queen on the under side of honey-board trying to get through. In the first case you must be lively and secure the queen before she goes below.

In the latter case simply remove the honey-board, and you have the queen, provided she does not fly away."

Now, for the introduction. I have tried many different methods, but the most successful one with me is as follows:

With my knife I cut into a frame of honey, get plenty on the thumb and first finger; open the cage and as the queen comes out grasp her with the hand containing the honey and with the knife put more of the same honey on the wings, legs and head; do not be afraid of it but get all you can on the wings, legs and head, then she cannot fly or run; drop her between the centre frames, close the hive at once; you can look again in twenty-four hours. I have introduced many queens in this way and cannot recall a case of losing a queen.

Now, do not handle a queen with the bare fingers, but have them well covered with honey *from the same hive* into which you put the queen.

To test this matter, I have taken queens in my hand and held them about ten minutes, then put them in the hive and lost them every time. If the queen is contaminated with any foreign scent the bees are sure to notice it and know it is not their queen, but if she is covered with honey from the same hive introduced at once before they are aware that their queen is gone, by the time they get her all clean she is quiet and they suppose she is the old queen.

I have been very successful with virgin queens in this way. I got my first idea of this method from H. A. Burch.

Now, I do not say this is the only and best way to do, but you will save at least twenty-four hours' time, and it has been successful with me for about ten or twelve years.

Clinton, Mich.

Number Eight.

MRS. H. HILLS.

The weather.

March went out yesterday, quite "like a lion," the glass indicating, in the morning, 12° above zero. Though the winter has been exceptionally mild, with very little snow, bees have had but few perfect flights; hardly one each month, during which more or less of the little adventurers were not chilled.

On March twenty-fourth of last year bees brought pollen, as in June; thus far, no load of pollen has come in this season.

To-day, there is a huge snowbank at the east door, the result of last week's "blizzard," while the apiary is entirely bare.

Condition of colonies.

What a pleasure it is to have every colony in such absolutely good condition that not the slightest anxiety is felt for their safety. Mine have been thus this winter: not a hive has been opened for nearly five months, they being all on summer stands, so comfortably packed and with so abundant and excellent stores that they could not fail to do well. Their appearance, at times of flight, indicates almost entire uniformity in strength of colonies. It is indeed a pleasure to find, at the opening of spring, not a single weak colony in the apiary. In the matter of stores, they will hardly need examination before new honey from the clover arrives.

Conditions of success.

I would certainly say to novices in beekeeping, do not tolerate weak colonies. You cannot afford the time and strength necessary to doctor them; and it also appears to me, that there is no necessity for having weak colonies at any time. Most certainly, my time of disaster may come, but I have never yet found it necessary to lose a single colony. However, for this measure of success, the very closest attention to every possible detail has been necessary; and certainly, "eternal vigilance has been the price of freedom." I do not believe that one person in a thousand would be willing to bestow the care upon the apiary which I give merely as a labor of love.

Possible queenless colonies.

Now, I am wondering whether any of the veterans could, by noticing the appearance of the bees, at the entrances, tell me whether I have any queenless colonies?

Certainly, bees are plentiful enough at every entrance and active enough at every entrance. I am conscious of a feeling of envy towards Mr. Demaree and others who can thus determine also when colonies are short of stores.

Introducing queens.

Speaking of queenless colonies, some one has asked me to give, for the benefit of novices, a method of introducing queens. The first requisite to the following plan is a tight-fitting, wire-cloth "honey-board."

After removing the old queen together with all uncapped brood — every egg—from the brood-chamber, the wire-cloth "honey-board" is fitted tightly above it, and on this is placed an upper story containing the new queen and several frames of hatching brood. After several days, the bees are allowed a small opening in the wire-cloth, through which they, by degrees, make their way into the upper story. Of course, if the weather is cold, the upper story, containing queen and hatching brood, is first kept in the house, for a few days, closed tightly.

Sheboygan Falls, Wis.

Number Nine.

Z. T. HAWK.

An old but safe way to introduce queens—Introducing a new queen at the time the old one is removed.—How to make an introduction cage.

My first experience in introducing queens was with the Peet cage and with what is usually called the Peet process. I used this method several years, but by degrees abandoned it for others simpler and more convenient. The cage I use is a cylinder of wire cloth about four inches long and three-fourths of an inch in diameter, closed at one end by folding the wire cloth, at the other by a wooden plug having a five-sixteenths inch hole through it. After placing the queen in this cage, the hole is pushed full of Good's candy and the queen is ready for introduction. I usually remove the old queen and introduce the new at one operation. The cage is laid on top of the frames and receives no further attention until the third or fourth day when I look to see if the queen has been released. This examination is made with as little disturbance to the bees as possible. No frames are removed and barely smoke enough is used to keep the bees from becoming angry. If the cage is found empty, as it ought to be at the end of the third day, it is removed and the hive closed. The ground near the entrance of the hive is given a glance and if no dead queen is seen it is taken for granted that all is well. In the course of two or three days the hive is quietly opened and the combs examined for the queen, or for eggs.

This method is old but none the less practical. It is not claimed to be infallible, but it is next thing to it. For eight years I have used it constantly, not introducing hundreds of queens, as is done at the Bay State Apiaries, but doing all the necessary work of this character in an apiary of from twenty to forty colonies, and have never lost a queen.

If bees are busy and a colony is found to be queenless, the shortest way, and one that is comparatively safe, is to lift a comb containing a laying queen and plenty of bees from a nucleus and place it at once into the hive containing the queenless colony. Bees and queen will usually be received without hostile demonstration, but if the queen is valuable and you want to run no risks, confine her on the comb with a cage made by turning down a little more than half an inch on each edge of a piece of wire cloth four inches square. Press

the edges of this cage into the comb and release the queen when you are certain she is safe.

I last year introduced a valuable queen just received from a prominent breeder, by placing three combs of hatching brood in a hive and turning the queen and her attendants loose upon them. In half a day she had quite a respectable nucleus of young bees. The weather was cold and stormy but sufficient heat was secured by placing the combs on top of a strong colony with a slat honey-board covered on both sides with wire cloth between. In using this plan, great care must be taken to close every crevice about the hive where a queen could escape or she will be sure to fly away.

Audubon, Iowa.

Doolittle answers the Editor of the Api.

Mr. Editor:—

I see by the December Apiculturist you have a question or two for answer. As I never do anything intentionally to injure any one, or in a "dark corner," although like the most of mortals liable to err, I am very glad indeed to answer the questions. In the first place, friend Alley is laboring under a wrong impression in thinking that I wrote a "small book giving my methods of rearing queens, sometime within two years." I did no such thing. What I did do was this. Sometime during the latter part of the year 1886 or the first of 1887, at the request of the publisher of the "Bee-hive," I wrote him quite a lengthy article on "rearing queens," he paying me well for writing the article. This article was published in sections, or as a "continued story" in the "Bee-hive" during 1887. Some time afterward, I think the early part of 1888, Mr. Cook informed me that he proposed putting out this article in book or pamphlet form, together with selections from different articles which I had written in the various bee papers, which was done, as I supposed not only to give the thing greater circulation, but to get some of the money back which he paid me for writing the article. I wrote him not to print too many copies of the pamphlet as I intended soon to write a book on queen-rearing and I did not wish him to sustain a loss on them, this being the first intimation I ever gave anyone that I was to write a book, except as a year or more previous I had told Mr. Betsinger and Mrs. D. that I expected to do so. This I think sufficient explanation about the Cook publication.—In the preface to my book these words are found: "Finally, the urgent requests of my friends for a book became so numerous, that I decided to hold back from the public a part of my experiments and research in queen-rearing, and when they were completed, give all which I had dug out regarding queen-rearing to the public in book form." This I think is sufficient to answer the question, "Why I did not say a word about rearing queens above a queen-excluding honey-board in the Cook article."—Now as to the question "How many queens I ever reared above a queen-excluder before the appearance of my book." I answer, *thousands of them*, as I reared my first queens in that way during 1884, as pages fifty-nine to sixty-one in my book tells about, and I have continued so to rear till the present time. If I do not mistake, it was June, 1887, that Mr. N. N. Betsinger (Marcellus, N. Y.) was here, and I showed him all my plans; the making of the queen-cups, how the bees built them out, etc., etc., requesting him not to say anything about it till the thing came out in book form. Let the doubting ones write Mr. B., if they are not willing to take my word for it. Again I find that Mr. Alley is laboring under a wrong impression in thinking that my methods imply the rearing of queens "up stairs" with only old bees and "dry brood-combs." If he or anyone else will turn to pages sixty-two and sixty-four of my book, this im-

pression will vanish at once, when they read these lines found there: "I raised two frames of brood (mostly of larval form) above, so as to get as large a force of nurse bees about the prepared cells as possible, to properly feed the queen-larva. The prepared frame was placed between the two having brood in them." Page sixty-four shows that this brood is always present when queens are being reared according to these words, "The cells are better supplied with queen-food, where unsealed brood is placed in the upper story every ten days—enough better in my opinion, to pay for the extra work." Elsewhere in the book I explain how feeding is always resorted to when honey is not coming in plentifully from the fields so that there is never any "dry combs" in the upper story, for the bees are always crowded for room where I rear queens, so they are only on combs containing honey or brood. Having now explained the matter, I think even Mr. Alley will not be so greatly "puzzled" as he has been because scores of people have written me and others that they considered my book very "scientific."

Borodino, N. Y.

From the above it appears that the articles on queen-rearing were written for the "Bee Hive" in the latter part of 1886, but Mr. Doolittle had not perfected his method of making queen-cups and getting them built out by the bees, and till June, 1887, at which time he told his friend Betsinger of his new plans. We find nothing in the above article, or in Mr. Doolittle's book No. 2, to warrant the belief that he had developed a practical system of rearing queens above queen excluding honey-boards until the season of 1888, and even this may be doubted, for his own experiments carried out according to the directions in his own book in the season of 1889 were dismal failures. Now the question arises, if Mr. Doolittle had reared "thousands" of queens above queen excluders before his book was written, how did it come about he had not developed a practical system? We all know he perfected a plan of rearing queens after the book was written and that additional pages, making corrections and giving new advice, were made to the second edition of the book. And it is just because of these facts that the suspicion has arisen that Mr. Doolittle had conceived certain plans that he described in his book which had not been put to the test of trial. These plans were his method of rearing queens above excluders and his method of getting queens fertilized in colonies where there was a laying queen in the brood-chamber. It must be remembered that several writers had written strongly suggestive articles on the new plans of rearing queens during the fall of 1888 and the early part of the winter. Before this time, if Mr. Doolittle had any new plan he wrote not a word to indicate it, and is deserving of none of the credit claimed in his book. *The only thing that may be said to be original in his book* is the way of preparing the artificial cell-cups for the larvæ. His plan of transplanting larvæ for queens is certainly not new. To Dr. Tinker belongs the honor of first practising this system in queen-rearing. As he has now abandoned it for the system given in "Thirty Years among the Bees" very nearly the same, we presume he found the system objectionable. If the system is such a very "scientific" one we wonder why a man of the long experience of Dr. Tinker should abandon it. Perhaps the Doctor will tell us in the "API." It will probably turn out, as we suspect, that first-class queens cannot be reared by the plans recommended in Mr. Doolittle's book.—ED.]

When to put the swarmer on the hive.

Woodstock, Vt.

MR. ALLEY:

1. At what time should the Swarmer be put on the hive? and can the bees work just as well with them on?

2. Will a colony of bees send out more than one swarm?

I. H. FORMAN.

1. The Swarmer should be put on the hive just before a swarm is expected. A swarm need not be looked for till the hive is full of bees, honey and flowers abundant in the fields and the weather hot.

2. Yes. Sometimes as many as five swarms will issue from one hive. A man to whom I once sold an Italian queen said the Italians beat all the bees for swarming he ever saw. He said his colony swarmed five swarms one season; three of them came off in one hour, and he hived the lot. Well, this is an unusual thing for bees to do; yet they often cast three swarms in one season. Sometimes a swarm will issue early in the season, and I have known two others to come from this one besides three colonies from the parent stock. The first swarm gets a good start and having an old queen will send off another swarm, and sometimes a second swarm.

This often occurs. It is nothing unusual for two or three swarms to issue from the same hive some seasons.

Where the Swarmer is used, it will be necessary to remove the first swarm that comes out to a new stand and set the Swarmer again for a second swarm. Ten days after the first swarm issues, the Swarmer should be removed from the hive to give the young queen a chance to take the mating flight.

I should have said that if a second swarm issues, it is usually on the eighth day after the first swarm comes off. The second and third swarms will follow right along and none will issue twelve days after the first one came off.—Ed.].

The Swarmer—Feeding bees in the Bay State hives.

East Maine, N. Y.

Mr. Alley:—I would like to ask you a couple of questions:

1. In regard to the way the Swarmer works. Would not half a dozen swarms, all coming out the same time, be as apt to cluster with one queen as they would to go back to their respective hives?

2. Do you not have to do a good deal of feeding with a hive as small as the Bay State?

T. K. Twining.

1. No, the bees would not at all cluster on one Swarmer or all go to one hive. I have seen no less than three swarms in the air at one time. One of the traps which had a queen in it was placed in a tree and the bees all clustered there. In a short time the trap was removed and after the bees found they had no queen each swarm returned to its own respective hive.

2. We do not feed colonies in the Bay State hive when there is plenty of forage for the bees to collect. The Bay State hive is larger than many beekeepers use.—Ed.].

Questions by an unknown party.

Mr. Alley:—1. Is your Swarmer a portion of your drone-trap? Do you not connect two traps to make the Swarmer?

2. Are Italians pure when some of the bees show two bands and others three? I would like to have the opinion of some experienced person.

Reader of Api.

The Swarmer is constructed on the same principle as the drone-and-queen trap. When used as the latter the trap to catch the drones and queens is above the entrance to the hive; when used as a self-hiver the chamber to catch the queen is at the end.

We have applied for a patent on the Swarmer. Now, while I felt well protected in my rights with the patent I have on the trap, I had an idea that my claims might not quite cover all the features of the Swarmer. There are several parties who claim the invention of the Swarmer; yet they have only made slight changes in the construction of the drone-trap and not in the least changed the principle.

2. If you have bees that show two and three yellow bands they are pure Italians; certainly good enough so far as purity is concerned. We never have claimed that *pure* Italian bees do, or should, show *three* yellow bands. Two broad bands, not counting the narrow one that is on the bend of the body is all I will ask to satisfy me that bees are *pure* Italians. The best type of purity in Italians are found in uniformity in the width of the two yellow bands. People have visited our apiary and have declared that our bees have three and four bands. This we have never claimed and do not think any one can see more than two distinct bands.

Prevention of robbing among bees.

Newport, Giles Co., Va.

Mr. Henry Alley:

Do you know of any trap or contrivance to prevent bees from robbing? Has anything of this kind been invented? Is there a patent on anything of this kind that is a success?

I have invented a trap or contrivance that will prevent bees robbing. In my opinion it is a success. I will try it one more season. If it works as well as it has I shall apply for a patent. It is simple and cheap; will cost twenty-five to thirty-five cents each to manufacture them; made of wood, tin and glass.

M. W. McPherson.

We cannot say that the above arrangement is not entirely new. We are of the opinion, however, that K. P. Kidder of Burlington, Vt., invented some device to prevent robbing in the apiary. It is unlike the above, as I believe there was no tin, wood or glass about it.—Ed.].

Frames that will prevent burr combs.

Solon, Me., April 4, 1880.

AMERICAN APICULTURIST:—

Please give us in your next issue what you think should be the dimensions of the several parts of a frame that will prevent burr or brace combs. Give (1) the exact dimensions of all the parts of a standing frame like that standing frame of the "Bay State hive;" (2) the exact dimensions of a hanging frame like the hanging frame used in the "Bay State."

TURNER BUSWELL.

We will first speak of the Langstroth frame. The first L. frames we ever saw were $\frac{7}{8}$ of an inch wide. That is, all the pieces for top and bottom-bars were that width. We were not long in discovering what a nuisance they were in our apiary.

We also found that Mr. Langstroth recommended a wider top-bar. These we soon had in use and they gave satisfaction. The bees will build no burr-combs above the top-bar when just the right bee-space is allowed between the top of frames and honey-board. The latter was thought to be indispensable in those days. But we found that as the top-bar was but one and a quarter inches wide, while the bar to which the comb was attached was but $\frac{7}{8}$ of an inch wide, the bees would build burr-combs between the frames but not above them. We then made some frames that were $1\frac{1}{8}$ inches wide, and $\frac{3}{4}$ inch thick. We found the first season that this was just the thing and all we desired, as since that time we never have had any burr-combs between or above the frames.

The principle cause of burr-combs is too much bee-space. Another cause is the want of room for storing surplus honey. If a strong colony is not given abundance of room during a good flow of honey they are likely to build burr-combs in almost any part of the hive. I have even seen capped honey on the bottom-board of a hive. Give the bees plenty of storage room and less burr-combs will be built.

Now about the Bay State frame. The top and bottom-bars of the Bay State frames are the same in dimension. The bars are $1\frac{1}{16}$ inches wide, and $\frac{1}{2}$ inch thick. The bee-space above the frames and between the frames and section-case is $\frac{3}{16}$ of an inch; while a little burr-comb may be found between the frames, there is never any above them. We use eight frames to a hive, the end pieces of which are $1\frac{1}{2}$ inches wide. I think, however, should I begin beekeeping again I should use frames that would be but $1\frac{3}{8}$ inches from centre to center. Yet I find that $1\frac{1}{2}$ inches from centre to centre has worked well; still it seems to me that there is an advantage in a less space from centre to centre.—ED.]

Self-hivers; a new use for the drone-and-queen trap.

Herewith we present our readers another illustration of a device for catching a swarm of bees when they issue. "Have you ever tried it?" will be the question hundreds of beekeepers will ask. Yes,

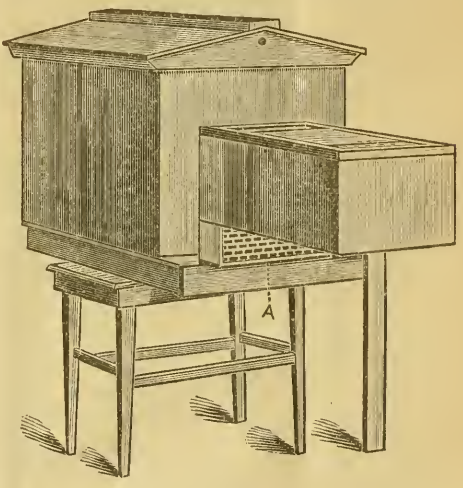


FIG. 1.

we have been using it the past twenty-nine years. Up to date it has caught every swarm, save one, that has issued from a hive where the trap was set.

Fig. 1 shows the trap attached to a Bay State Hive. You will see that it projects considerably beyond the front of the hive. The bees to gain access to their hive must pass under the trap and enter through the metal, A.

Fig. 2 shows the interior of the hiver. It is the same as the drone-trap. In fact, it is nothing but the drone-and-queen trap on a larger scale. Instead of being as now

made, just large enough to hold a pint of bees, the trap will hold the largest swarm likely to issue from any hive.

The trap has a portable cover (c), so that when a swarm has been hived in the box the bees can be quickly removed. This device may be attached to the hive in a dozen different ways to suit the fancy of the apiarist. It will be seen that there is a stake driver in the ground under the front end of the trap for the box to rest on.

B, as shown in fig. 2, is a box, open on one side so the bees can enter, while the opposite side is covered with perfo-

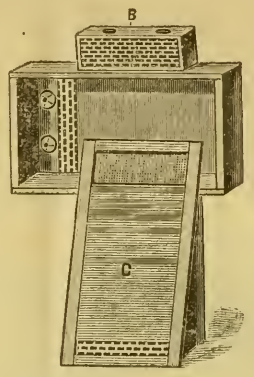


FIG 2. *Our New Self-hiver.*

rated metal. This represents the bottom chamber of the drone-and-queen trap. Two cone tubes are used for the bees to pass into the trap from the hive.

We stake our reputation as a beekeeper on the statement that this trap will catch and hive ninety-nine out of every one hundred swarms that issue. The queen will enter the trap, and when the bees return in search of her they will readily find her ladyship in the box and ready to receive them.

You will notice in trap (Fig. 2) and just ahead of the tubes a strip of perforated metal. This is so arranged that it is exactly over the entrance to the hive. When the bees return after having missed their queen, they will pass into the trap through the metal and join their queen. Here the bees will be found on the return home of the apiarist, when they can be disposed of to suit his pleasure. If no hive is ready, the box can be placed on the stand the bees are to occupy and hived when most convenient. If the bees are to be returned to the hive they issued from, this can be done after the combs have been examined and the queen cells removed.

On account of its large size we cannot mail the Self-hiver. They must go by express, whole weight of Swarmer is but 4½ pounds. Therefore the charges by express will be very little.

This device is patented. Our claim on the drone-trap fully covers all parts of it. In order to place these Self-hivers within the reach of all beekeepers, I have decided to sell one Hiver complete and an individual right to manufacture them for one's own use for the small sum of $4. They will not cost the beekeeper more than 25 cents each to manufacture them. We have our traps sawed at the factory of The W. T. Falconer Manufacturing Co., Jamestown, N. Y. Any one purchasing an individual right to manufacture and use the trap can send direct to the above firm and get their goods. No model or pattern need be sent. Just say when ordering that you have purchased an individual right to use Alley's drone-and-queen trap and the goods will be sent.

To those who purchase the right to use the trap will be given the right to make and use any of our other Self-hivers. We expect to hear by every mail that a patent has been granted us on another device. The purchaser of a right can have his choice of the Self-hiver that suits him best. We guarantee that either one of them will give perfect satisfaction. We shall include a deed for an individual or farm right, one drone-trap and both Swarm-hivers. The purchaser of an individual right will be entitled to all improvements in the above without further charge. Township rights $5 00. County rights $20.00.

☞The APICULTURIST for April is on our desk. It is, as usual, filled with spicy reading for beekeepers. The APICULTURIST is fully up with the times, and it is a pleasure to read every copy as it comes to hand. It richly deserves its success. —*Am. Bee Journal, April 26.*

A fire destroyed the factory of G. B. Lewis & Co., at Watertown, Wis., on Saturday, April 19. The origin of the fire is unknown. Loss, $15,000, with an insurance of $4,500. This is a heavy blow for the enterprising firm, for their stock of hives and sections was all destroyed; but their well-known enterprise and vim will soon find new quarters and adequate machinery to resume business in the shortest possible time.—*Am. Bee Journal, April 26.*

The Beekeeper's Directory.

A new book is on our desk. It is entitled "The National Beekeepers' Directory," and contains a classified list of 2,000 beekeepers of the United States and Canada (including about 200 supply dealers), with essays and hints regarding the successful management of the apiary. It is "compiled by Henry Alley, Wenham, Mass." It contains 140 pages, one-half of which are devoted to names and addresses of beekeepers, and the other half to the practical hints mentioned above, including Mr. Alley's "method for rearing queens in full colonies, while a fertile queen has possession of the combs." Price by mail, $1.00 bound in cloth.—*American Bee Journal.*

SUPPLEMENT

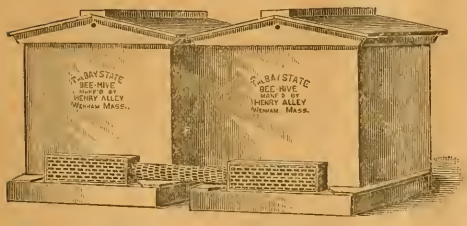
TO THE

AMERICAN APICULTURIST.

WENHAM, MASS., MAY, 1890.

ALLEY'S SELF-HIVER.

CATCHES AND HIVES EVERY SWARM THAT ISSUES.



PRICES OF THE SELF-HIVER.

In the flat, by express, per half dozen, $2.50; per dozen, $4.00; in lots of 50, $15; in lots of 100 or more, $25. The metal in the Swarmer to stop the queen has three more rows of perforations than is used in the drone-trap. This, of course, gives nearly double the room for the bees to pass out and in that the drone-trap does. The Swarmer is adapted to any hive.

Notice.

Will each of our subscribers kindly send us on a postal card the address of a few intelligent, reliable beekeepers. A copy of the "API" will be mailed to each one. The names of the "know-it-all" beekeepers are not wanted.

What Dr. G. L. Tinker says of the trap.

FRIEND ALLEY:

Your drone-and-queen trap I and hundreds of our *best bee men* now regard as an invaluable invention.

The swarmer a good thing.

Le Clair, Iowa.

MR. HENRY ALLEY:—If the swarmer works all right it will be a great thing for beekeepers, especially those who have out-apiaries.

MARION MILLER.

Likes the trap very much.

Cazenovia, N. Y.

MR. ALLEY: I have fifty of your drone and-queen traps in use and like them very much. Herewith find amount for individual right to manufacture them for my own use.

W. W. HEATH.

A good Carniolan queen.

Martinsville, O., March 4, 1890.

MR. HENRY ALLEY:—

DEAR SIR: Please change the address on my paper from Wilmington, O., to Martinsville, O. Am well pleased with the API, and could not do without it. The Carniolan queen I got of you last September has three frames of brood in a five-frame stand at present. Her workers are beauties.

Yours truly,

J. E. THRUSHER.

The drone-trap and swarmer,

Flint, Mich.

H. ALLEY:—

Last spring I purchased some of your drone-and-queen traps of Thomas G. Newman & Son, Chicago.

I like them very much and they seem to take well with my customers.

The new self-hiving arrangement is, in my opinion, going to be a good thing.

M. S. WEST.

PRICES OF SUPPLIES

—AT THE—

BAY STATE APIARY,

WENHAM, MASS.

Bee-Hives.

We offer only the Bay State hive for sale.

One hive in the flat,..... ..$ 3.00
Six hives " " " 15.00
Twelve " " " " 27.00

All parts of the Hive are included in the above, frames, sections and all but paint and nails.

Sections.

One-piece sections	per 1,000	$4.50
" " "	500	2.50
" " "	100	.60

Langstroth Frames.

Material for (hanging) frames for Standard L. Hive per 100.....$3.00

The frames we use are so constructed that the bees will not build comb between or over them at the top, nor fasten the section case and frames together, as is the case when the common top bar is used.

Nailing Block for Frames.

No one can do good work at nailing frames without a proper board to nail them on. We can send one, by express, that will do the work nicely price,..... .50

Comb Foundation.

We can supply the best brands at manufacturers' prices, and ship direct to our customers from the nearest factory. We also keep a quantity in stock to fill small orders.

1 to 10 lbs., for brood frames.....45 cts. per lb.
1 " " " " sections.....50 " " "

We keep in stock but one dimension of brood-foundation 17½ x 7 inches. This is large enough for any L. frame and is just right for the Bay State frame.

Perforated Zinc.

This we can supply in any quantities, shipped with other goods, per foot.....12 cts.

If sent by mail, add 10 cents per foot for postage.

Honey Extractors.

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The veil has a rubber band which draws the top together; it is then placed over any hat and drawn until the elastic is over the hat band. Common net, by mail..... .35

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Queens and Full Colonies.

Queens.

Prices.

Untested queens, each,.....$1.00
Selected " " 1.25
Tested " " 2.00
Extra breeding queens, the best we have, each,..... 3.00

Our untested queens are sent out before any of their brood hatches. 95 per cent will prove to be purely mated. Safe arrival and purity guaranteed in all cases.

Carniolan queens and bees at the above prices. Our strain of this new race of bees cannot be excelled.

Full Colonies.

We consider eight frames well filled with brood and covered with bees a full colony. Prices of such in B. S. hive, including one set of sections, $12.00. Purchasers to pay express charges. Safe arrival guaranteed.

Fourth Edition of the

Beekeepers' Handy Book, or Thirty Years among the bees. 75 pages, with illustrations, by mail..... 50

Queen-rearing Apparatus.

Beekeepers who rear queens, whether by the Alley method or by any other, should have the apparatus here described. The SWARM-BOX and QUEEN-NURSERY are articles that no person who rears queens ought to dispense with.

By using the swarm-box a large colony of bees can be confined a long time or transported safely hundreds of miles. It is a very useful article about the apiary at all times during the season.

Sent only by express, price, $1.25.

When a colony swarms and it is desirable to preserve the queen-cells, and no nuclei are at hand, the Queen-nursery in such cases will be found invaluable; the cells can be placed in them and they need no further care for a week or more. Virgin or fertile queens can be kept in the nursery for several weeks. We have sold a large number of queen-nurseries in years past.

The following articles are also used in rearing queens, a full description of which can be found in our work upon queen-rearing.

	Express.	Mail.
Queen-nursery (of 21 cages).....	$1.25	$1.60
Swarm-box.....	1.25	
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To make the lot complete, we put in each package one drone-and-queen-trap, one copy of THIRTY YEARS AMONG THE BEES, and send all by express for..... $4.50

All these articles can be packed in the swarm-box and sent safely by express or freight.

Brooms for Brushing Bees from Combs.

We find a small "corn-broom" best for this purpose as it does not injure or irritate the bees, and will do the work better and quicker than anything else used for the purpose.

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Remit by registered letters, cashier's check or express orders. If sent by money orders or postal notes, have them made payable at the Salem, Mass., P. O. Make all remittances payable to the order of the AMERICAN APICULTURIST.

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Wenham, Essex Co., Mass.

Our Agents.

W. H. Conibear, M.D., of Morton, Ill., will supply the Swarm-hiver, also the drone-and queen trap, the address of other agents will be announced later on.

"Companion and Prize-Weekly."

E. L. Pratt of Marlboro, Mass., has sent out an edition of several thousand of the above paper. There are eight pages, 16 by 24 inches well filled with matter that will interest any beekeeper. Mailed to any address at five cents per copy.

We have also received from Brother Pratt, a copy of "Pratt's New System of Nuclei Management." Illustrated. Price 10 c. per copy.

Bees all poisoned.

Simla Place, Passage West, Cork, Ireland.

DEAR SIR:

Just received the January number of the AMERICAN APICULTURIST for 1890 which completes my year. Having lost all my bees last spring as they were poisoned, I will discontinue my subscription for the present.

Yours truly,

J. S. MURPHY.

Well, they are.

Farmer's Valley, Neb.

MR. ALLEY:

Herewith find $1.50 for which please send me the APICULTURIST one year and one queen. If your queens are as good as your paper they must be dandies.

CHARLES WHITE.

The Beekeepers' Directory.

Bismark, Ill

Directory at hand and I think it well worth the money.

S. B. STRODER.

The best of all.

Mount Carmel, Ill.

EDITOR AM. API: Herewith find 75 cents for renewal of your paper which to my mind is best of all.

How any one can get along without the drone-trap is a mystery to me. We have six in constant use and the neighbors would like to borrow if we could lend them.

LIZZIE HURLEY.

Finest bees he ever saw.

Sedalia, Mo., Mar. 10, 1890.

MR. ALLEY. I got two Italian queens from you last fall, and I put one with an old colony of bees that had been queenless over ten days and the bees killed her; the other I put with a young colony and she is doing finely. The queen did not look quite so yellow as some Italians, but I must say that the young bees from her are the finest and largest Italians I ever saw, and for working qualities and gentleness, they cannot be excelled.

Yours truly,

FREIDRICH SCHACH.

They take the cake.

MR. ALLEY: I bought three queens of you in 1888. They were not well marked, but for workers they "took the cake." Neither of these queens cast swarms. They stored in pound sections, eighty-one, eighty-two and ninety-two pounds of honey respectively, from white clover.

Our bees are breeding rapidly; they carried in pollen all through December.

A. H. NOBLE.

Best colony of bees yet.

Gaylordsville, Conn

MR. ALLEY: I have eighteen colonies of bees. The best one is from the queen you sent me in July, 1888. I took from this colony ninety pounds of honey and got two good swarms. All good and solid for winter.

THOS. D. FLYNN.

A good word for the drone-and-queen trap

Port Jervis, N. Y.

Editor AM. API: Please send me the price of the P. metal for the drone-and-queen trap. I used them the last season and had excellent success with them.

JOHN SCHMIDT.

THE * AMERICAN * APICULTURIST.

A JOURNAL FOR THE NOVICE AND EXPERT IN BEEKEEPING.

PUBLISHED MONTHLY. SUBSCRIPTION PRICE, 75 CTS. PER ANNUM.

HENRY ALLEY, - - - EDITOR.

VOL. VIII. WENHAM, MASS., JUNE 1, 1890. NO. 6.

Entered at Post-office as second-class matter.

The Editor's Department.

Editorial points.

Our prices for queens by the single one or by the dozen can be found in any issue of the API.

Self-hivers have and are now having an immense sale. They are working satisfactorily in all cases reported. All who have examined the self-hiver, pronounced it the best thing out.

Every reader of the APICULTURIST should order and introduce a young queen reared from our hundred-dollar queen. This is the finest strain of Italian bees we have ever had in our apiary. We wish to remind those who send for sample copies of the APICULTURIST that they can get our paper one year, and a selected daughter of the above queen, for $1.50. Now is a good time to subscribe. We can mail the queen in a few days after the order reaches us.

If any reader or other friends of the API desire to visit our apiary and see how we carry on queen rearing, all are welcome to do so. By June 15th we expect to have 300 nucleus colonies in full operation. Two hundred are now in running order. We shall take great pleasure in showing all who favor us with a call how we rear queens by the methods given in "Thirty years among the bees." We shall show you how bees leaving a fertile queen rear queens above a queen-excluder; and if any visitor happens here at about the proper time, we shall show how bees make cell-cups by the only natural method.

☞The APICULTURIST for April is on our desk. It is, as usual, filled with spicy reading for bee-keepers. The APICULTURIST is fully up with the times, and it is a pleasure to read every copy as it comes to hand. It richly deserves its success. —*Am. Bee Journal, April 26.*

Prices of supplies at the Bay State Apiary.

We will say to those who call for our price-list that we have none except what is found in each issue of the API. Please look it over. If you do not find all you want you can send the order just the same and we will get the goods we do not keep in stock of those who have them.

After May 10 the price of the Swarm-hiver will be $2.50 per half dozen and $4.00 per dozen. After manufacturing several thousands we found the profits not what they should be. When the price was fixed it did not occur to us that so many dealers would care to handle them. Now supply dealers from all quarters are calling for them.

Although each issue of the API gives instructions for remitting money, our friends persist in sending money-orders on all the post-offices in this county. Before you purchase a money order look and see where it should be made payable. Salem, Mass. P. O., is the place.

We are getting inquiries by every mail from all parts of the country from beekeepers wishing to know if we have queens ready to ship. We have not and shall not have any queens to ship till after May 20. Commencing with the first week in June we expect to ship one hundred queens each week. All will be reared from our famous $100 queen.

If the readers of the API could come to our apiary on any warm day and see these bees at work we should be pretty sure to get their order for one or more queens. On April 30 this queen with about one quart of her bees was taken from her colony and transferred to a small 5-comb hive from which we shall draw one thousand eggs each day until Sept. 20.

How to remit.

All remittances to us should be made payable to the order of THE AMERICAN APICULTURIST. Please bear this in mind.

THIRTY YEARS AMONG THE BEES.

BY HENRY ALLEY.

QUEEN-REARING.

[*Continued from page* 74, *Vol.* VIII.]

Knife for cutting comb foundation and removing queen cells.

A knife of the right kind is not the least of the convenient and important things to have in the bee-room and in the apiary generally. I have several old, well-worn table knives that I use about the apiary, mostly in our queen-rearing operations. A suitable knife should not have a blade too thick, and I may say that it is impossible to get one with a blade that will be too thin.

Keep at hand a lighted lamp for heating the knife, as it does much better work when quite warm than when cold. Always heat the knife when it is used about queen cells, or in any queen-rearing operations. It is often necessary to separate queen cells when they are built in clusters. If a cold knife is used to do such work, there is great danger of injuring one or more of the cells, and of destroying the queens in them. Heat the knife just hot enough to have it cut smoothly.

Screening drones from worker bees.

It is often necessary in rearing queens to separate the drones from worker bees. During my queen-rearing operations, I have practised such work a great deal. This, of course, was necessary before the introduction of the drone-and-queen trap. Before the invention of this useful device for ridding the apiary of useless and undesirable drones, other means had to be devised for destroying them, as black drones were not to be tolerated in the same apiary with young Italian queens. In those days of our early queen-rearing experience, we were obliged to run an out-apiary of nucleus colonies on account of the liability of the races mixing. With the drone-and-queen trap, several races can be kept in the same yard and none will hybridize.

I believe every reader of this understands that queens and drones mate in the air and *not* in the hive. When a queen is five days old she will, if the weather is pleasant, take her first flight to meet a drone. If not successful the first day, she will fly each succeeding *pleasant* day until she is fertilized. Although I have been rearing queens by the thousands the past thirty years, I never yet knew a queen to make the mating flight when under five days of age. I have read accounts where it is claimed that queens were fertilized when less than four days old. I have tried every means to induce queens to take a flight when under five days old, but was unsuccessful in each case.

Queen-cell protectors.

The queen-cell protector is a thing of which I know but little. I believe Mr. Doolittle claims the invention of this novel device for preventing queens from destroying queen-cells. Rather than use an arrangement of this kind, it seems to me that it would be a much better plan to remove the queen-cells from the combs and place them in nursery-cages. If queens are allowed to hatch in nursery-cages, they can remain in them until introduced.

I do not advise the use of the queen nursery, or the use of the nursery-cage when the cell can be placed in a queenless colony.

This brings us directly to another important matter. In an article under the head of "apiary," in the *American Stockman*, I find the following remarkable statement:

A correspondent of the *American Rural Home* says: Picking up a paper lately which had an article in it on queen rearing, I came across this sentence in the article: "Queen-cells, or a newly hatched queen, should be given every colony or nucleus, as soon as a queen is taken out." In reading this I wondered whether the writer had ever had much experience in rearing queens, or whether he meant just what he said. If he meant just what he said, it would seem a little strange that nearly every writer on this subject should say wait twenty-four hours. I have often given queen-cells at the time I took a queen from a colony, or in some cases waited from six to ten hours later, and have always had nineteen out of twenty such cells destroyed unless they were protected with a queen protector. I have had better success in letting a very young queen run upon the combs as soon as I had taken out the laying queen, than I have in giving them cells; yet as far as my experience goes, not more than one out of ten of these will be accepted if let go on the combs at this time. Some years the bees are very slow in starting queen-cells after a queen is taken away, when I have had over one-half of the cells destroyed which were put in after twenty-four hours had elapsed from the time the queen was taken away.

That I am not alone in this matter is shown by the following from one of our most experienced queen breeders: "In my early days of beekeeping, I used to read that when forming a nucleus by taking two combs of bees and brood and placing them in an empty hive where I wished the nucleus to stand, I should give them a sealed queen-cell at once. After trying it very many times they have been invariably destroyed, the bees building queen-cells to suit themselves from the eggs and larva which they had. If the nucleus has been formed long enough for them to have queen-cells of their own, and a cell ready to hatch is given them, it will not be destroyed, or if their cells are cut out and another inserted in their place, it will be respected." This corresponds exactly with all of my experience. If I attempt to give a queen-cell to a colony from which I have taken a queen, before they start cells from their own brood, the cell is invariably destroyed. Hence if, at twenty-four hours after the removal of a queen, no cells are started, with me, it is not safe to give a cell just ready to hatch, unless the same is protected. As looking over the combs to see just when cells are started is extra work, I now wait forty-eight hours, and usually all works well. Where I think I do not want to wait this length of time I use the queen-cell protectors, when I get a queen hatched in a colony within from six to eighteen hours from the time the old one was taken out.

These cell protectors are made by rolling a piece of wire cloth around a tapering stick, so as to form a cage having an opening in one end about as large as a lead pencil, while the other end is large enough to admit the cell at its base. The queen-cell is now slipped into the protector and the large end secured so the bees cannot get at it, when the whole is put down into the center of the cluster of bees, between two combs, where it is left to hatch. As the bees always destroy a cell by biting into the side of it, this protects the cell so they cannot do this, yet allows the queen to come out at the lead-pencil hole.

While the above does not agree with my experience, nevertheless it is quite an important piece of information. A good method for introducing queens and queen cells is given in the above, as well as the way to make and use the cell protector.

Now, my experience in introducing very young queens and in giving queen-cells to either full or nucleus colonies has been this: when a fertile queen has been taken from a colony, I have for years made it a practice to immediately place in the hive a *well* matured queen-cell. I do this not only because I have found it perfectly safe to do so, but because it saves so much time and trouble later on.

It does not seem to be generally understood by beekeepers that it is *not* the *worker* bees that destroy the unhatched queen. While the bees will not open a queen-cell and sting the embryo queen, they permit a *queen* to do so. When the unhatched queen has received a fatal wound, then the bees remove her and at once tear down the cell.

Let me say again that bees having a queen will not destroy a queen-cell until after a queen has opened the cell and stung the unhatched queen. Until the queen has done her work the bees will continue to nurse and care for the cell the same as they do when the colony is queenless.

Should a queen emerge from a cell

as soon as placed in a colony having a fertile queen, she would not be molested until the reigning queen happens to meet the young queen on the combs; then the former would be despatched.

Should the queens not meet until the young one was several hours old, it would most likely be the old queen that would be dethroned. The longer the mortal combat is delayed, the more advantageous it is to the young queen.

I have seen two queens emerge from cells at the same time and in less than a minute they were closed in a death struggle for control of the colony. When a queen has received a mortal wound from the sting of a rival queen, she does not die immediately. The sting usually causes paralysis of the side injured and the wounded bee will creep around on the combs dragging one leg and wing for some time. Should she be met again by the queen that gave the death wound, they would pass by without taking the least notice of each other.

Best way to get knowledge of the habits of bees.

I do not guess at or suppose these things may be as stated. I know them to be correct from long experience and actual experiment. No one can know these things without spending considerable time in studying the bees and their habits.

A queen, fertile or unfertile, as well as bees will surely follow her nature in every instance. She will at sight destroy another queen, or rather make the attempt to do so. If a queen-cell is given a colony containing a queen, instinct teaches the queen that it is her duty to destroy the cell unless previous preparations have been made by the colony to swarm. The same instinct teaches the bees that a queen cell under all circumstances should be respected and receive proper care until the queen comes forth to take charge of the colony.

It seems to me that it ought not to require a great amount of argument to convince the average beekeeper that these statements are correct. I have found that a colony of bees is always ready to receive a young queen or a queen-cell at any time and it did not matter whether or not they had a queen.

A person who gives an opinion or an experience differing from the above has not had much experience in the matter, or jumps at conclusions without properly investigating the subject.

Having devoted more space to this subject than I intended, I will conclude by advising those who desire to test the matter of introducing young queens, or queen-cells at the time a fertile queen is removed from a colony, to follow the directions given on another page of this work. I venture to say that when a cell containing a well developed queen is placed in a full queenless colony, the queen will be allowed to emerge and will be well taken care of, and that not one cell in one hundred will be destroyed, and not even one queen killed that hatches from such shells.

How to obtain some valuable information about bees.

I know of no better way for any beekeeper to get so much profitable amusement and valuable information regarding bees and queens, as can be had by experimenting in the line of introducing just-hatched queens and inserting queen-cells in colonies at the proper season of the year. Most any beekeeper has plenty of queen-cells at swarming time and no special effort need be made to procure a supply by artificial methods.

Proper time to remove queen-cells from a colony that has swarmed.

It is not expected that the inexperienced beekeeper will do everything right in the apiary. All must live and learn. Many old beekeepers make mistakes in the management of their bees.

There is a time to do certain things and a time when some things should not be done. There is a right time to remove queen-cells from a colony that has cast a swarm. Usually a swarm issues on the first pleasant day after one of the queen-cells is sealed. If a

swarm comes off the day the queen-cells are sealed nearly every cell would be destroyed if meddled with on that or on any succeeding day before the cells had been sealed at least six or seven days. This has been my experience.

A frame on which there are a number of queen-cells may be removed from one hive to another if carefully done, and no injury will result. But if an attempt be made to cut the cells from the comb before the expiration of seven days after the cells are sealed most likely a majority of the queens would be destroyed. When the cells are first made the walls are very thin and soft. The nymph has not spun the thin silken lining (cocoon) that protects it in the cell while the nymph is maturing. Immediately after the cell is sealed the cocoon is formed and the bees each day add wax to the outer walls, and by the time the queen is ready to emerge the walls of the cell at the base are sometimes nearly or quite an eighth of an inch thick. This heavy wax coating protects the unhatched queen from injury before she leaves the cell. I can give no other explanation than this of the reasons why it is that the walls of a queen-cell are made so heavy. Yet I do not see the wisdom of this nor why it should be so, since the bees do not and cannot know that the cells are likely to be handled or are in anyway subject to injury except from the queen. Of course the thicker the walls of the cells, the longer it will take a queen to gnaw through them in order to sting the immature queen.

Exposure of queen-cells to heat and cold.

When handling queen-cells in a warm room or even in the open air, none of them should be exposed to the sun, or a very high temperature for a moment. Remember that the unhatched queen is in an almost air-tight case, and if the temperature is raised above eighty degrees only for a few minutes, it is almost sure death to the queen. Under no consideration should the cells be exposed unnecessarily. If the temperature of the bee-room is between seventy and eighty degrees, it is full warm for such operations as transferring-cells, starting queens, etc.

On the other hand, no unhatched queen will be injured if the cells are exposed for a long time to a temperature below fifty degrees. By a long time I do not wish any one to understand that the cells would not be injured if exposed an unreasonable time. No harm will be done if the cells are left for several hours in a room where the temperature is as low as fifty degrees.

I once accidentally left a cell on the ground over night; the temperature the next morning was about forty degrees above zero. Prompted by curiosity, and as an experiment, I placed the cell in a colony to see what the result would be, and to see whether the queen would be of any value. The queen came out all right, was promptly fertilized and proved to be a good one.

When the eggs of hens are placed in an incubator, the temperature is not permitted to go above 103 degrees. If it goes above 105 degrees or up to 106 degrees and is maintained for a short time only, many of the embryo chicks will perish. I have had no experience in the hen business, but from what I know about bees I am quite sure that many poultry breeders have often had their hopes blasted by a too high temperature in the incubator.

Surplus queens, how to preserve and care for them.

At the season of swarming many bee-keepers have more or less queen-cells and sometimes young queens they would like to preserve if it were convenient and the proper fixtures were at hand to aid them in carrying out their desires. At just that time several cages, such as are described on a previous page and are used in the queen nursery, would be the right thing to have. Remove the cells from the hive at the proper time, place them in the nursery-cages and after supplying each cage with food sufficient for a week, or longer, place the nursery in

some full colony, according to directions given on another page in connection with the description of the nursery. A much better way for the novice to dispose of queen-cells would be to supersede old queens and at once insert the queen-cells. If this seems too risky, the method of inserting queen-cells taken from the *American Stockman* can be used to good advantage. That is, dequeen the hive a few days before the cells are inserted. This method of dequeening would do away with the necessity of nucleus colonies in which one would be obliged to preserve young queens until fertilized.

Position of nucleus colonies in the apiary.

Occasionally a visitor to the BAY STATE apiary will look around awhile and then remark "Why don't you place those little hives in rows so they will look better? I shouldn't think a queen could ever find her way back to the hive where she belongs, etc." Well, my friend, the bees have no trouble in finding their home, is the only reply I need make. I usually go some farther and explain the reason why I place the nucleus hives in such seemingly careless positions. If the hives are set on a line and all face the same direction, few, if any of the queens would find their home on returning from the mating trip. For this reason we purposely place the fertilizing hives in a zigzag position.

Position of full colonies in the apiary. How bees mark the location of their homes.

With full colonies there is less danger of the loss of queens when the hives are placed near each other and are all painted one color. While there are several queens to be fertilized in a nucleus colony each year, there is but one to be mated from the full colony. Then again, there is always less danger of queens being lost from a full colony than there is from a nucleus colony at mating time. Hence the reason for the extra care with the nucleus colony.

While many paint the fronts of their hives in different colors to aid the queen and bees in locating their home, I hardly think such is necessary from the fact that bees do not seem to know one color from another. I have found that a slight change in the position of the hive from the one nearest it, is all that is necessary, and much better than paint. For instance: let one hive face south, the next one southeast and the next south again. Another hive may have a small stone near the entrance, or any other object by which the bees can mark the location. Bees seem to be guided in locating their home more by the position of the hive and surroundings than by colors.

How bees act when leaving the hive the first time.

When bees are let out of the hive after being placed in a new position they always "mark" the location by flying about the entrance a few moments. They do not come out of the hive and start directly for the fields, but as soon as they are outside the hive they at once discover that something is wrong. As each bee gets on its wings it turns head towards the hive, and after a few seconds spent in observation, it will move a little farther away and gradually enlarge the circle, all the time rising higher in the air, and finally it will take a "bee line" in search of water, pollen, propolis or honey, as the needs of the colony seem to demand; after the bees have been to and from the fields once or twice, they do not stop to locate their home but at once go to the fields in search of forage. When the bees leave the fields they go high in the air, and after circling around several times go directly to their home.

How a queen marks the location of her home when she leaves it for the mating trip.

One engaged extensively in rearing queens will in the course of the season see hundreds of young queens leave the hive to meet a drone. Queens mark the location the same as the worker bee. When the queen returns to the hive she is more careful about entering the right hive than the worker

bee. This is natural. The queen seems to know that if she enters the wrong hive that her chance of escape from death is very small, unless by chance she enters a queenless colony, when, of course, she will be well treated. If she happens to enter a colony having a fertile queen she would be pretty sure to be killed, not by the queen in the hive which she entered by mistake, but by the bees, as they would at once seize and ball her until she is dead when the bees would unceremoniously eject her from the hive.

I have seen queens return from the mating flight and fly about the entrance of their hive nearly five minutes before they dared to enter. The queen would go very near the entrance, and then recede several feet and then go near the hive again. Bees or queens seldom make mistake in locating the right hive.

I sometimes have thought that when watching the movement of a queen flying about the front of a hive she would venture near the entrance for the purpose of getting a sniff of the odor of the interior of the hive, in order to make sure of the right one.

During the honey flow it makes but little difference which hive in the apiary the worker bees enter when loaded with honey or pollen. The guard bees seem too busy to notice whether it is a friend or foe that is entering their home.

Where bees carry pollen and propolis.

Here let me say to the novice, old farmer and the box-hive beekeeper that bees carry pollen and propolis on its legs and not wax or honey as some suppose. A sack holding about one drop of honey is located in the abdomen of the bee and is used for the transportation of honey and water. So far as is known the nectar is not in the least changed for having been through the honey sack. Bees do not *make* honey, they simply gather it and place it in the cells of the hive. The nectar is then changed slightly by having the water evaporated from it and by the high and even temperature of the hive.

Nature has provided the bee with a way of ejecting the nectar from the honey sack. I have watched the bees fill a cell that was made against glass. They seemed to put the honey in the cells exactly as a painter puts paint upon wood. The tongue is used like a brush to paste the honey in the cell.

The cell is kept fullest against the walls to prevent any honey from running out; that is, the honey is put in the cells on the concave principle.

[*To be continued.*]

Foreign Notes.

L. STACHELHAUSEN.

SOME beekeepers believe that bees transfer eggs from worker-cells to queen-cells. A new observation of Mr. Vogel in Germany shows that this is very improbable, at least. Mr. Vogel had a queen with one hind leg wanting to the trochanter. When and how this leg was lost Mr. Vogel did not know. In the spring of 1889 the colony was populous, but got very weak in summer. He found many eggs laid, but not on the bottom of the cells, but about four to five millimeters from the edge of the cell. By repeated examinations he found no larvæ but eggs only. The eggs were always removed by the workers.

Now, Mr. Vogel set one of the combs containing these eggs in a queenless nucleus. One day all the eggs were removed. The nucleus was queenless some eight days and if the bees ever transferred any eggs, they would have done it in this case, so says Mr. Vogel.

In nearly all our American bee-papers and in the *British Bee Journal* we found, lately reproduced, a German law on beekeeping. This law has not passed, as yet, any legislation in Germany. The bill was introduced in the *Reichstag*. There it was dropped; the matter belonging to the resort of the police authorities.

In April, 1889, the bill was introduced to the Prussian house of representatives, but referred to a committee where it will remain forever buried. By the way, I will remark that the law is objected to by many German beekeepers.

Within a few years the question has been very much discussed in Germany, "Do the bees need water in winter and is it profitable to water the bees at that time inside of the hive?' Some beekeepers strongly recommend giving a little water by the aid of a bottle, while others think this is not necessary.

Theoretically, the bees need a little water to prepare the larval food, as soon as breeding commences. In some localities the honey is much inclined to granulate, and the bees need water to dissolve it. If the bees cannot fly out to get this water, they have to get it inside of the hive or suffer badly. The question now is: Is it more profitable to use a hive, so constructed, that the moisture may condense on the walls or near the alighting hole, or to have the hive all packed very warm and give the water by aid of a bottle? For our northern friends, I think this question is quite important; we are still very far from knowing everything about wintering bees.

In respect to the science of beekeeping, we find in the illustrated *Bienenzeitung* of Gravenhorst, some very valuable articles from Mr. Schoenfeld.

He experimented with drones and found that they will die in three days if not fed by the workers with larval food. These experiments explain now at once, in what manner the drones are killed by the workers. They simply do not receive any nitrogenous food. The reason for killing the drones of a colony is not on account of the end of the swarming season, but the scarcity of pollen in the field. With scarcity of pollen it is more difficult for the bees to prepare larval food. At first the drone-brood is not fed any more; then the drones are so weak the second day that they are easily carried out by the bees. Hereby it is necessary to know that drones, like the queen, feed themselves on honey, but never eat any pollen. All nitrogenous food for drones and queen comes from the chyle-stomach of worker-bees.

Before the British Beekeepers' Association, in the meeting of Oct. 23, 1889, Mr. Grimshaw read a paper entitled "Heredity in Bees." Quite the same idea and hypothesis was published by me in the German *Bienenzeitung*, No. 10, 1879. At that time it seemed quite certain that the larval food was prepared by glands. But now we know that this theory was a great mistake, and Mr. Grimshaw thinks that with the gland theory, his or my theory on heredity would fall; this is not necessarily so. If the time allows I will write on this subject.

Selma, Tex.

Double- vs. Single-wall Hives.

A writer says in the *Michigan Farmer* in determining which is the better, a double- or a single-wall hive for practical results, we should consider not alone the winter problem. At the late International Convention, where the matter was fully discussed, it was not, nor can it be shown to be, that a properly constructed double-wall hive packed with suitable material will not winter bees as well as the single-wall hive in a good cellar; though it was shown, I think, conclusively, that there is a small saving of stores by cellar wintering. I think it must also be conceded that it is on the whole, the most economical system of wintering. Here, then, are two points conceded in favor of single wall hives; but I propose to show that these are more than offset by the superior advantages of the double-walled hive in spring and summer.

The saving of stores by cellar win-

tering is not over four pounds to the colony; and the saving in the cost of hives is not more than the value of four pounds of honey per year. Now we come to spring brooding, and my experience is, that there is a net saving of not less than ten pounds of stores to the colony by the use of the double wall hive up to the first of June, in this locality; and I believe the saving would be still greater at any point farther north. If we calculate, then, from the first of November till the first of June, we have a saving of at least six pounds of stores in double-wall hives over the best possible showing in single-wall hives.

But we will not stop here. There is another advantage in double-wall hives that has not heretofore been recorded; and it is the chief consideration with me in deciding in favor of them. We can raise one-third more brood and bees in a double- than in a single-wall hive by the first of June. We have the facts and figures to prove this point, and they will be given if desired. I will here simply allude to the fact that bees in protected hives in spring are stronger, and are able to gather stores, and to breast strong cold winds, when the bees from single-wall hives, being comparatively weak, fall to the ground, or become chilled on the flowers and died. The cause of this state of things is undoubtedly due to the greater labor required to keep the brood warm during the cool nights of April and May, in single-wall hives.

Thus it will be seen, that the two points above conceded to the credit of the single-wall hive become a small matter when we compare the grand results that can be achieved with the double-wall hive in spring brooding, preparatory to securing a crop of honey. But I shall fall short of doing this subject justice by not saying something upon the proper construction of double-wall hives and their winter and spring management. I know that many have failed with such hives, and I think I know why. I have said, and I desire to emphasize the fact, that a chaff hive, with damp packing, and damp walls and combs, is a poor place for bees. Indeed, it is far inferior to a single-wall hive in out-door wintering, if it is allowed to get into such a condition; and I know that the management of these hives leads to more or less dampness, which is either death to the bees or there is a partial or complete failure in results. Double-wall hives, then, must be kept dry, and the packing must be thoroughly dry to begin with. Again, the packing must be quite porous or it will require to be often changed. Thus, fine sawdust, clover, and oat chaff, that mat down close, are objectionable. Forest leaves, planer shavings from dry wood, and the excelsior sawdust obtained in sawing sections, are preferred, and from two and one-half to three inches of packing about the brood-chamber is enough.

In preventing dampness I rely much upon proper ventilation, and practise two methods, both of which succeed well. The first is free bottom ventilation, and it seems best adapted to this locality. The second is upward ventilation in connection with a small entrance (two inches by three-eighths of an inch). This latter system seems better adapted to points farther north, though I am not sure it is. With free bottom ventilation there is more and purer air furnished to the bees, and they appear to be able to keep the hive as warm as by the other plan, as the following will show.

About fifty miles due west of here are quite a number of apiaries of from ten to fifty colonies of pure black bees in box hives, where for more than fifty years they have held their own, and where, up to this time, the frame hive and the modern system of beekeeping have been unknown or ignored. What impressed me most was the fact that all of these hives, without exception, were set on four small, flat stones, from three-fourths to one inch thick,

and they were left so the year round. I inquired of one old and intelligent beekeeper why he let so much air in at the bottom of his hives, and he replied that they could not winter their bees in any other way; that the combs and hives, without the large openings at the bottom, would become damp and the bees would die; that, as long as the hives and combs were dry, the bees were never injured by the cold! I suppose I have seen this fact stated in the bee papers a hundred times, and yet it does not appear that the mass of beekeepers are profiting by it.

It is now a well-known fact that bees in winter, at intervals of three to five days, arouse from their torpid condition, and feed. During the intervals they take no food until the sense of hunger again arouses them. This is an interrupted hibernation. I have thought that they often go as long as a week without food; but when they do rouse up they raise the temperature and warm up their stores before they can feed; and in the operation they set in motion active currents of air. Now, I have observed that bees cannot properly ventilate a hive except from the bottom; and the experiments of Mr. Cornell have shown that free bottom ventilation cannot be had through an horizontal entrance of the usual size, without other openings in bottom or other part of the hive. Bees then may, at their feeding times ventilate and dry out their hives to some extent, where free bottom ventilation is provided for. The plan that I have tried, and which seems to answer every purpose, is to give a full entrance ($\frac{3}{8}$ x 12 inches), and in the bottom of the winter-case, at the rear end of the brood-chamber, make five one-inch augur holes, which are to be covered with tinned wire cloth. Upward ventilation is prevented as far as possible by the use of an inside cover for the brood-chamber, made of wood. The hive stands near the ground, and a few leaves are placed loosely beneath to keep the bees from trying to get under the hive, when they can fly, where the augur-holes are located. The hives are painted on the bottom, and the dampness of the ground does not affect the hive or bees.

With the above arrangement the packing gets only slightly damp, which is soon dried out by taking off the cover of the winter-case once in two or three weeks when the sun shines clear. If the packing gets quite damp over the brood chamber (and it often gets so on the cool days of spring), I throw it all out to dry on the cover, which is inverted on the ground. The sun is also allowed to shine full upon the inside cover of the brood-chamber. The effect of this treatment on the bees in the spring is very remarkable, and especially upon the laying of the queen and the rapid extension of the brood. The covers are usually taken off about 10 A.M., and returned at 4 P.M. Where upward ventilation is given, the entrance is closed to two inches by three-eighths, and no holes are made in the bottom of the hive. Over the brood-chamber is laid two thicknesses of cheap cotton cloth, and four or five inches of packing. I prefer the cloth to lie flat on the frames without any cross-sticks for passage-ways. With this arrangement, after a few weeks of cold weather the surface of the packing will become quite wet, while it is warm (fifty degrees) and dry beneath. I use mostly the excelsior sawdust on the brood-chamber, loose, as it can be handled almost as easily as a cushion, and is readily dried out, while a cushion is wet. When ready for the sections it may be taken out and stored in barrels, for future use; but the packing around the first story is left in place, as a rule, all the year.

A properly constructed double-wall hive is simply a winter-case for a single-wall hive. They should not be constructed all in one, as the packing, if it becomes damp, cannot be removed to dry it out. My winter case is made of thin boards, nine thirty-

seconds thick by twenty inches long, nailed up and down to a frame at the top and bottom. The bottom and cover are also lined with the same thin stuff; and the whole, with the flat, tin roof, weighs under twenty-five pounds. It is light, easy to handle and very durable. After five years' use I have yet to lose a colony in them. In summer we take most of the packing away, when they become excellent summer hives. In conclusion, allow me to again call the attention of beekeepers to the matter of bottom ventilation for winter hives.—*Exchange.*

The above so nearly meets our views so often expressed in the different bee-papers that we give space to it here. The article is one of the best we have seen on the subject of double-walled hives for a long time.—ED.

Siftings in Bee Culture.

CONDUCTED BY M. A. KELLEY.

Periodicals for review, exchanges and correspondence intended for this department should be addressed to

M. A. KELLEY,
Milton, W. Va.

"La Grippe" prevented the appearance of *Siftings* in the API for March.

Mr. Heddon, in *Gleanings*, says that frames spaced 1¼ from centre to centre will do very well.

Mrs. L. Harrison, in *American Bee Journal*, advises beekeepers to have honey on hand to supply their trade at all times.

Our old friend, Mr. C. W. Dayton, has invented what he calls a "queen-restrictor." *Siftings* awaits further developments.

Well, well! What next? Here is Mr. Doolittle using nearly a page in the *American Bee Journal* discussing frame *vs.* box-hives. "Chaff."

A series of able articles are being published in the *American Bee Journal* on "Extracted honey." Much valuable information is thus being disseminated.

An entire page in a recent *Canadian Bee Journal* is devoted to the consideration of the best means of filling up a "crack" in a log "gum." "Chaff," Brother Jones, chaff!

Even A. I. Root seems to be coming around upon the side of those of us who have been advocating the idea of brood-frames being spaced not more than 1⅜ from centre to centre.

A correspondent in *Gleanings* speaks of adding something to extracted honey to cause it to retain its liquid form.

Siftings wants to sit down hard upon all such plans and all such talk. Better mix a little brains with your beekeeping and then, perhaps, there will not be so much talk about impure honey.

Mr. F. Danzenbaker says in the *Review* that he has thrown aside honey-boards, queen-excluders and reversible frames, as useless nuisances. He says also, that only three-sixteenths of an inch should be allowed between top-bars and the sections and that the prevention of brace-combs is a matter of distance. Proper spacing will prevent them.—[Correct—ED.]

Well, if this be correct and likely it is, brace-combs are not so terrible after all.

Mr. W. F. F. Petty, in the *Review*, puts himself on record as of the opinion that the best preventive of brace-

combs is a properly constructed and correctly spaced brood-nest. He prefers brood-frames, nine to the foot, $1\frac{1}{4}$ inches wide and $\frac{1}{4}$ inch thick. Frames that are spaced $1\frac{1}{2}$ inches from centre to centre are losing ground in the estimation of many bright bee men.

Mr. J. E. Pond, in *American Bee Journal*, gives some ideas regarding the much-talked-of burr-comb question. He says, in substance, that the prevention of brace-combs depends on proper spacing. The frames should be $\frac{7}{8}$ wide and the combs $\frac{7}{8}$ thick and spaced $\frac{3}{8}$ apart.

This agrees with my views exactly. Why anyone should want frames $1\frac{1}{2}$ inches from centre to centre is hard to understand.

The *Canadian Bee Journal* has an article, copied from the *British Bee Journal*, relating some facts as to heating bee houses in winter. It is claimed that a great saving of stores is thus accomplished. And that va- various manipulations may be performed in winter. Beekeeping, as a practical, money-making business, is yet in its infancy. The coming years will bring as much progress as those that are now passed away.

A hint that may, if followed up, lead to some practical result, is given by Mr. G. E. Hilton in the *Review*. It is that bees, if furnished with combs or foundation, have no good use for their wax, and rather than waste it they use it in building brace-combs.

Now, cannot some of our good thinkers invent a way to gather and save the wax scales and thus prevent their misuse?

The *American Bee Journal* says that the honey and pollen gathered from the yellow jessamine (*Gelsemium sempervirens*), is poisonous to the bees. This noxious shrub is plentiful in the south and should be destroyed wherever found.

The one great trouble in securing comb honey in presentable shape is to overcome or circumvent the bees' propensity to waste their time in gathering propolis and depositing it in all available places.

Queen-breeders' Department.

CONDUCTED BY E. L. PRATT.

Northern breeders are now pricking up their ears.

The *Review* did not give us many fresh points on queen-rearing in the special issue for March.

Who makes a good perforated zinc that will exclude drones and yet allow virgin queens to pass?

It looks as though control of flight was going to be as near to mating in confinement as we shall ever get.

Dr. Tinker is going to give us a book on how to get honey. We hope the doctor will give all the light possible on the use of zinc.

One of the first rudiments of breeding is the power to detect a small advancement in qualities, and to hold it there until another can be made.

Have a care when spring opens to keep down the rearing of undesirable drones. Keep drone comb away from your poor stock and give it to the good.

We have wintered over some quite small nuclei for experiments and are well pleased with the result. Next season we shall try a large number of them.

I am gradually being reconciled to a closed-end frame. Unless some one invents a novel way of fixing hanging frames pretty soon, I shall be entirely shifted. Closed-end frames are much better for breeding up.

How can we form any idea of the value of a cross of different races unless we breed for purity at the start? The purchasers of queens should be the ones to experiment along this line, not the breeders.

Dr. Morrison recommends carrying a drone-laying virgin queen through the winter in order to secure early flying drones. He says he can get them flying in April by so doing. Are they good for anything? Are not the queens mated to them drone layers?

Such drones would be worthless, and every queen mated to them would be worthless, too.—ED.]

I believe, by the proper manipulation of *drone*-excluding nectar at swarming time, that the honey producers could elevate the standard of their own bees. They could, at least, hold it up. The natural tendency is to backslide.

There is an erroneous impression going abroad that another entire outfit of supplies is necessary in order to work the self-hiver to perfection. Please tell them that they can use any old, cheap box just as well. By covering said box with wire cloth, would the bees not cluster inside until hived?

There is considerable being said of late about queen breeders training bees to swarm by the forcing methods they employ. Pray tell us are not natural cells constructed during the keenest swarming excitement? Cells developed over an excluder are more like the superseding process and will have a tendency to lessen the swarming *fever*. By this I do not mean "breed out swarming," for I do not believe such a thing possible.

This is a good point, friend Pratt.—ED.]

The importation of foreign races into Italy, Germany and Austria will very soon ruin the export business for those countries. Unless a breeder is honest it is folly to send your money across the water for imported stock from lands where other foreign blood has been introduced. In America we have as pure bees as can even now be obtained from many breeders in both Italy and Austria. Our foreign friends will need to take warning before it is too late, or they will lose the large patronage America has been giving them. *Keep your bees pure*, breeders!

The reputation of the Carniolan bees will depend entirely upon their purity. I believe A. I. Root and those who have written disparagingly about the Carniolan race of bees, have not been furnished with pure stock. The markings of pure Carniolan bees are very distinct; there should not be a speck of decided yellow on them, but all should show "rust" near the joint of the body and a series of light hairy bands to the tip of the tail and about the thorax. If pure their temper will be decidedly mild, and the heavy combs will tell the story of their power to gather honey.

You will hear men say that they do not believe there is any difference in the bee of to-day and that of fifty years ago. How is it, then, that we can now get larger yields of honey? Who of our large Italian and Carniolan beekeepers would go back to the bees of fifty years ago? Is there a man of us who would part with his favorite strain of any of the foreign races for those little fiendish black bees? If we have made no improvement in our bees in the last fifty years, it is our own fault. Unless a man can improve the quality of his stock

each year he is not worthy of the name "Breeder."

It looks as if the designer of all things had made worker bees, drones and queens of different sizes in order that man could so manipulate his inventions to improve upon nature's handiwork in cultivation.

Mating in confinement will probably never be accomplished only by the confining of undesirable drones by excluding metal. This metal can be made of sizes to exclude the drones in a certain hive, and yet allow the queen to pass and be mated with such drones as the apiarist sees fit for her company. Then we have that size of perforation that excludes both queen and drones, when, by simply removing said excluder after other drones have ceased flying, the desired mating is sure to take place.

The "dry bones" of beedom have been shaken up all along the line in the last few years. New ideas come up like meteors, shine awhile and sink to rise no more. Beekeepers have "sought out many inventions." Many of these appliances are used awhile and then replaced by others thought to be better.

Old ways of doing things are abandoned and others take their places. The older men are halting by the way and young men lead the van. So that in a few years we have new ideas, new appliances, new ways and new men.

The number who grasp ideas of improvement at their utterance is very limited. Those who are famous for kicking against what they call theory eventually fall into line and make a practice of the so-called theory.

You will often hear men say, "I wouldn't give a fig for all the theoretical stuff you could crowd into a magazine," while in truth they are making a livelihood on that which was but theory a few years previous. When you find one man pushing for something better, there are always a dozen others to hang on his coat-tails and hold him back.

Those fellows who have done so much "kicking" against the drone-and-queen trap and self-hiver should take the above home.—Ed.]

Dr. Tinkers' new book.

A copy of this new book has just come to hand. It is like everything that comes from Dr. Tinker's pen. Every branch of practical beekeeping is treated and in such a plain, common-sense way, that no one can fail to understand what the author means in the description given of the different methods practised by him in the production of honey, rearing queens, and new system of managing an apiary.

Price of the book is but 25 cents per copy.

G. B. Lewis & Co., whose factory was recently destroyed by fire, are now ready to fill orders for their fine one-piece sections, beehives, etc.

Up to date, May 25, bees here in Massachusetts have done but little towards gathering honey. We have too much wet weather all the time.

No one should divide a colony of bees and allow one part of the colony to rear a queen. The queen thus reared would be a very poor one. Do not divide unless you have a fertile queen to give the colony. A cell taken from a colony that has cast a swarm will do very well if no queen is at hand.

If you want all your sections nicely filled, and the comb fastened to all sides of the section reverse them when about two-thirds filled with honey.

There is a proper way to do all things; then there is a wrong way to do most things.

The Beekeeper's Directory.

A new book is on our desk. It is entitled "The National Beekeepers' Directory," and contains a classified list of 2,000 beekeepers of the United States and Canada (including about 200 supply dealers), with essays and hints regarding the successful management of the apiary. It is "compiled by Henry Alley, Wenham, Mass." It contains 140 pages, one-half of which are devoted to names and addresses of beekeepers, and the other half to the practical hints mentioned above, including Mr. Alley's "method for rearing queens in full colonies, while a fertile queen has possession of the combs." Price by mail, $1.00 bound in cloth.—*American Bee Journal.*

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WENHAM, MASS.

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We offer only the Bay State hive for sale.

One hive in the flat,..... ..$ 3.00
Six hives " " " 15.00
Twelve " " " " 27.00

All parts of the Hive are included in the above, frames, sections and all but paint and nails.

Sections.

One-piece sections	per 1,000	$4.50
" " "	500	2.50
" " " "	100	.60

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Material for (hanging) frames for Standard L. Hive per 100.....$3.00

The frames we use are so constructed that the bees will not build comb between or over them at the top, nor fasten the section case and frames together, as is the case when the common top bar is used.

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No one can do good work at nailing frames without a proper board to nail them on. We can send one, by express, that will do the work nicely price,..... .50

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We can supply the best brands at manufacturers' prices, and ship direct to our customers from the nearest factory. We also keep a quantity in stock to fill small orders.

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We keep in stock but one dimension of brood-foundation 17½ x 7 inches. This is large enough for any L. frame and is just right for the Bay State frame.

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This we can supply in any quantities, shipped with other goods, per foot.....12 cts.

If sent by mail, add 10 cents per foot for postage.

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THE E. T. LEWIS & CO. EXTRACTOR,

No. 22. 28 inches in diameter, 25 inches high, 2-frame for any size up to 12½ x 19; room for 25 lbs., honey below reel, and the best extractor ever made for. $10 00

We sell this size only as it is the most convenient to use of any found in use. This extractor is adapted to any frame in use.

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Root's knife, by express,..... .70
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The veil has a rubber band which draws the top together; it is then placed over any hat and drawn until the elastic is over the hat band. Common net, by mail,..... .35

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By mail, $1.75; by express,.....$1.50

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Prices.

Untested queens, each,.....$1.00
Selected " " 1.25
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Extra breeding queens, the best we have, each,..... 3.00

Our untested queens are sent out before any of their brood hatches. 95 per cent will prove to be purely mated. Safe arrival and purity guaranteed in all cases.

Carniolan queens and bees at the above prices. Our strain of this new race of bees cannot be excelled.

Full Colonies.

We consider eight frames well filled with brood and covered with bees a full colony. Prices of such in B. S. hive, including one set of sections, $12.00. Purchasers to pay express charges. Safe arrival guaranteed.

Fourth Edition of the

Beekeepers' Handy Book, or Thirty Years among the bees. 75 pages, with illustrations, by mail.....50

Queen-rearing Apparatus.

Beekeepers who rear queens, whether by the Alley method or by any other, should have the apparatus here described. The SWARM-BOX and QUEEN-NURSERY are articles that no person who rears queens ought to dispense with.

By using the swarm-box a large colony of bees can be confined a long time or transported safely hundreds of miles. It is a very useful article about the apiary at all times during the season.

Sent only by express, price, $1.25.

When a colony swarms and it is desirable to preserve the queen-cells, and no nuclei are at hand, the Queen-nursery in such cases will be found invaluable; the cells can be placed in them and they need no further care for a week or more. Virgin or fertile queens can be kept in the nursery for several weeks. We have sold a large number of queen-nurseries in years past.

The following articles are also used in rearing queens, a full description of which can be found in our work upon queen-rearing.

	Express.	Mail.
Queen-nursery (of 21 cages).....	$1.25	$1.60
Swarm-box.....	1.25	
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To make the lot complete, we put in each package one drone-and-queen-trap, one copy of THIRTY YEARS AMONG THE BEES, and send all by express for..... .... $4 50

All these articles can be packed in the swarm-box and sent safely by express or freight.

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We find a small "corn-broom" best for this purpose as it does not injure or irritate the bees, and will do the work better and quicker than anything else used for the purpose.

1 broom, by mail .... .25
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Remit by registered letters, cashier's check or express orders. If sent by money orders or postal notes, have them made payable at the Salem, Mass., P. O. Make all remittances payable to the order of the AMERICAN APICULTURIST.

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A JOURNAL FOR THE NOVICE AND EXPERT IN BEEKEEPING.

PUBLISHED MONTHLY. SUBSCRIPTION PRICE, 75 CTS. PER ANNUM.

HENRY ALLEY, - - - EDITOR.

VOL. VIII. WENHAM, MASS., JULY 1, 1890. NO. 7.

Entered at Post-office as second-class matter.

The Editor's Department.

The Bee-News.

The editor is most too busy in the queen yard to give our readers the current bee news of the day. Brother Pratt has attended to that part very well.

The Carniolan Bees.

We shall have no more Carniolan bees for sale this season. Send your orders to Brother Pratt, Marlboro, Mass. If you don't care to do that, order where you please.

Every reader of the APICULTURIST should order and introduce a young queen reared from our hundred-dollar queen. This is the finest strain of Italian bees we have ever had in our apiary. We wish to remind those who send for sample copies of the APICULTURIST that they can get our paper one year, and a selected daughter of the above queen, for $1.50. Now is a good time to subscribe. We can mail the queen in a few days after the order reaches us.

Bees and Honey.

"Bees and Honey" by Thos. G. Newman, is on our desk. All we can say of it is that it should be read by every beekeeper in the land. We never saw any of the former editions of the work, consequently can not say in what respect the last edition is better than the previous ones.

Supersede old queens.

When a queen is two years old she has seen her best days and should be superseded. If you are a subscriber to our paper send seventy-five cents and get one of those daughters reared from our $100 queen. If you are not a subscriber, send $1.50 and get a queen and the API one year.

The Drone-and-Queen Trap.

If you never have seen one of our drone-and-queen traps we will mail one to your address on receipt of fifty cents. If satisfied with it and think you desire an individual or township right, the fifty cents may be deducted from the prices for rights given on another page.

We have a splendid picture of our queen-rearing apiary which will be given in a later issue of the API; probably in the August number.

Three Hundred Queens.

July 1, we shall have three hundred beautiful Italian queens all reared from our famous $100 queen. We expect to be able to fill all orders by return mail. When ordering queens you will confer a favor by stating the date you desire to use the queens. If the weather will permit the queens shall reach you at the time you state.

Imported Italian Queens.

On June 16, we received by mail, two fine queens from the apiary of Charles Bianconcini, Bologna, Italy. There were no dead bees in one box and only two in the other. This we call a success. Last year we received three dead queens by express from another party in Italy. Express charges were ten dollars. We could not get the shipper — Chini Josephine, Bologna, to make good his bad shipment. No one will order queens of such a dealer.

Queens in exchange for Honey.

We will exchange some of our finest queens for either extracted or comb honey. Anyone desiring to exchange will please address HENRY ALLEY, *Wenham, Mass.*

How to remit.

All remittances to us should be made payable to the order of THE AMERICAN APICULTURIST. Please bear this in mind.

Siftings in Bee Culture.

CONDUCTED BY M. A. KELLEY.

Does the *Bee-hive* wish to go on record as saying that the bees are not *animals?*

Dr. A. B. Mason says that ammonia in water will remove propolis from the hands.

A sure way, and the only one to *entirely* prevent the building of brace-combs—don't keep bees.

The fraternity of beekeepers surely have great reason to be proud of the noble band of men that have editorial control of our different bee journals.

If you would make beekeeping pay you must stick to it. "One swallow does not make a summer," nor will one or two years make a thoroughly practical beekeeper.

Fruit bloom was an entire failure in this locality [southwestern West Va.], and the bees are in poor condition to enter the white clover harvest which is now at hand.

Mr. A. E. Manum says in *Gleanings* that he has used with success hard soap on the top-bars and the bottoms of the sections as a preventive of brace-comb building.

A crying need of the trade in liquid honey is some kind of cheap receptacle to retail a pound or two up to about ten. It should compare in cheapness with the one-piece section. As material of which to make them how would waxed paper do?

"Speaking of the combs in sections Dr. Miller says:—To have them well fastened, put a strip of foundation at the top and bottom." This, coming, as it does, from a leading comb honey producer should carry with it much weight.

We reverse the sections to secure solid combs in sections. Should say that the Dr. is a little off in his way.—ED.]

The open-side section has had its day. That day is drawing to a close. Mr. Root says, "our orders for sections made with open sides are getting to be few and far between.

I used two thousand of them the last two seasons but I shall use them no more. Dr. Miller says he is a "little skeptical" as to the advantages that have been claimed for them but if he would use them by the thousand during poor seasons he would soon become a "big skeptic."

Artificial pollen is the subject of a question in the *Canadian Bee Journal* for May the first. From the general drift of the replies one would be led to suppose that the practice of giving the bees artificial pollen is losing ground in the estimation of many leading beekeepers. It is of doubtful utility anyway and will soon be relegated to the limbo of wornout fussy fancies.

It is not now common, as it was some few years ago, for beekeepers to try to induce every Tom, Dick and Harry to go into the bee business. We gain *some* wisdom as the years go by. Mixed beekeeping, that is, beekeeping in connection with other overshadowing pursuits, will not and *cannot* pay. You cannot keep bees and do a dozen other things and do either well. One thing well done is worth a dozen failures.

Close spacing of the brood frames is gaining ground. The time is coming when all frames will be spaced not more than one and three-eighths inches from centre to centre. "I think, should I begin beekeeping again, I should use frames that would be but one and three-eighths inches from cen-

tre to centre" says Mr. Alley. Thus the leading men in the fraternity are more and more coming to the conclusion that one and three-eighths is the proper distance.

The old reliable *American Bee Journal* in its issue for April 26 contains one of the neatest, brightest, heartiest commendatory notices that we have seen for many a day. Brother Newman knows how to say these things and his good opinion of the "API" is doubtless highly appreciated by all who help to make it what it is. The *American Bee Journal* is certainly the "wheel horse" of bee journaldom.

Brother Kelly probably has reference to the following.—ED.]

☞The APICULTURIST for April is on our desk. It is, as usual, filled with spicy reading for bee-keepers. The APICULTURIST is fully up with the times, and it is a pleasure to read every copy as it comes to hand. It richly deserves its success. —*Am. Bee Journal, April 26.*

Mr. Doolittle says that "not nearly as nice comb is built when a colony has no laying queen in the hive." This seems to indicate that it is a mistake to cage the queen to prevent increase.

It strikes us that Mr. Doolittle should know that queenless bees build all or nearly all drone-comb. If a hive is opened and the bees found building little patches of drone comb, it is a sure indication that the colony is queenless. Of course, this does not apply to all cases. When a strong colony is hard pressed for drone-comb they will make little patches of it in most any part of the hive; but such comb will have eggs or brood in the cells, while in the queenless colony there will be neither.

If a colony is supposed to be queenless just give the bees a chance to build comb. Place an empty frame in the centre of the brood-nest, and feed the bees some. If worker comb is made the colony has a queen; if drone comb is built, it has no queens.—ED.]

A writer in the *Guide* claims that clipping the queen's wings leads to her supersedure before she fails on account of age. Yes, true enough, and it sometimes leads to her death in a month or two after her wings are removed. A few leading bee men still practise clipping the queen, but it is my opinion that it will be abandoned sooner or later by progressive bee-keepers. What do you think about it, Mr. Alley?

You are just right, friend K. Mr. Doolittle is the only strong advocate of clipping queens' wings. Mr. D. is the only person to rear queens by transferring larva from one cell to an other to obtain queen cells. Most queen dealers use a more practical, convenient and natural way. Yes, and who ever saw in print one word commendatory of Mr. Doolittle's queens? This only shows that "with the best method for rearing queens," Mr. D. ships no better (if as good) queens than other people.

Queen-breeders' Department.

CONDUCTED BY E. L. PRATT.

Equalization and Increase.

A simple method of strengthening weak hives in the spring is to simply change places with one of the strongest, that is, providing they have an active young queen and the weather is not too cool.

I have been asked, probably a thousand times, how to form a nucleus colony and have it do well enough to build up strong for winter. The simplest method I know of is to take from some stock its queen and one frame of brood and bees and place them in an empty hive filled out with full sheets of foundation. Place this hive on the stand of some colony when in full flight. Give the queenless colony a cell or, better, a young laying queen. If too many bees leave the full hive they should be changed back until the desired number are in both hives.

Another plan is to remove all bees from their combs during a harvest and let them run into a hive filled out with full sheets of foundation. (If done before a storm they would starve unless a comb of honey is given them.) Place all the capped brood and one or two frames of honey in another hive and place it on the stand of your strongest colony. You can then give

them either a queen or cell ready to hatch. In this way the robbed colony will act like a new swarm and if populous will work wonders in honey.

Swarming can be held at bay by either of these methods and rapid yet healthy increase secured.

A plan for securing small two or three-frame nuclei is to dequeen a colony and leave it until it has cells capped when it can be broken into several parts and each given a virgin queen or hatching cell.

In any of these operations full sheets of foundation should be used or quantities of drone comb would be built which we do not want.

In forming nuclei it should be done late in the day so that a long confinement in the hot sun will be avoided. All we have to do is to block them in until dark and during the night the bees will become aware of the queen in their presence and very few will go back.

If the colony broken up is a strong one better success will crown your efforts and enough old bees will go back to the old stand to warrant your giving five or six empty combs and a laying queen.

Some of these small colonies will do better than others but can be equalized in a few days by the jumping method which has been a great success with us at any season of the year and was highly recommended by Father Langstroth. It is a splendid method for equalizing your colony in spring.

By taking a full colony to some farm about a mile away, a few weeks before wanting nuclei one can bring them home just as he wants them without losing a single bee. Or the nuclei can be made up in the home yard and carried a mile away.

If nuclei are strengthened with bees from other colonies care should be taken not to give them old bees, and bees just coming from a laying queen should never be joined to a nucleus having a virgin queen. Queenless bees can be put anywhere without fighting.

A bee master will find plenty of ways to fill out shortage and make improvements that suit him best.

Equalizing can be carried on without lifting a comb or even opening a hive. Queenless bees will abandon strange cells if not about ready to hatch. It is always safer to introduce a just hatched queen by the use of tobacco smoke. If the virgin queen is quite old when given to the nuclei she should be put into a little cage made by boring a one-inch hole into a seven-eighths inch block and covered with wire cloth. Provide a three-eighths inch passage at one side to be plugged with candy. By the use of these cages, queens can be introduced with perfect safety to any colony.

Bees taken from upper stories where cell building is going on will not quarrel if dumped directly into a strange hive with a virgin queen, but if taken from the body of the hive they would kill every bee if a quantity is given and then ball the queen and at last clear out with the honey, leaving the very young bees queenless and starving.

Plenty of food should be left with all colonies, to last them at least two weeks.

Swarming and prevention of increase.

Having detailed several methods for securing increase, I will endeavor to tell how increase may be kept down and large crop of honey produced.

One of the best plans is to hive the swarm on the old stand and transfer the surplus arrangements thereto at once, using starters in the brood-frames below, so as to allow the bees to satisfy their desire for comb-building and at the same time securing a nice set of combs at very little cost. (Allow me to add here that we bee-keepers are cornering the markets on wax by the use of so much foundation, consequently that product has been getting so scarce that all dealers

are obliged to advance the price each year. The ultimate outcome will be that we cannot afford to use foundation at all.)

After the larger portion of the brood in the parent hive has been capped, shake every bee off the combs in front of the swarm after adjusting a trap at the entrance to sift out the drones and young queen. The capped brood can now be exchanged for combs of honey from the different colonies in the yard, or it can all be put over some strong stock divided by zinc and the honey extracted after the brood hatches out by the latter method; comb and extracting honey will be produced in the same yard. The combs of honey may be removed and boxes put on.

Another plan is that given by Dr. Tinker, who is unquestionable authority on bee matter which will be thoroughly understood by reading his valuable little book.

A grand and very successful method of cutting down increase materially and at the same time securing splendid crops of extracted honey is to raise all the brood and tier-up a story, giving empty combs below, also the one the queen is on; then dividing the two chambers with excluding metal and repeating the operation after extracting all the honey from upper story. Cell-building can be practised in all upper stories worked in this manner and fine ones will be built. During June or the clover harvests, cells will be worked out in both chambers.

It is poor policy to double up colonies that have no intention of swarming. Better push them all to the swarming pitch and do the doubling after they have had their fun. If worked in the right manner a new swarm can be made to store more box honey than a powerful colony that does not think of swarming.

The term increase does not apply to the number of bees but to the number of colonies of bees.

We are opposed to hiving two swarms in the same hive when they can both be made to do grand work by vamping up with the bees of the parent colonies and at the same time adding vim to all the bees in both hives and cutting down increase all together.

Swarming.

We value the queen-trap more and more each season. Especially this, as we had in our yard several colonies of bees in all sorts of things called "hives." Transferring was in order all through the fruit bloom and up to date it looks as though we would winter a few of these bees yet in boxes as they are.

By allowing after-swarming and then jumping the hives we have been able to get most of the bees on frames of foundation. Some of the box hives have only a handful of bees left, but a hive full of honey. These we shall transfer at our leisure.

By the use of the drone-trap and jumping hives we have weeded out about all the undesirable drones in the yard and before these hybrid queens have time to lay more drone eggs we have a young queen in and the trap comes off.

If the trap or swarmer is used merely as a swarm catcher it can be removed as soon as swarming is over, but when in rearing queens for sale they are indispensable the entire season.

We had an after-swarm containing eight queens; the trap sifted them all out and we hived the bees in the ordinary way and gave them a nice virgin of approved blood.

There are a thousand and one little knacks that can be applied to a good queen-trap. Mr. Alley has one so arranged that it will accommodate a whole swarm.

A plan that worked first-rate with us several times in a case where we could not get at the frames, was to leave the trap on until the young queen

came out to mate. She finds she cannot pass the zinc, so she goes up through the cone and is trapped. At night the bees will miss her and cluster into and on the trap when they can be hived on movable combs or on the old stand and the queen will mate the next day. If a frame of brood in all stages is given them they will do finely and will not swarm out. By this plan a box-hive can be entirely cleaned out with no trouble whatever.

When a large amount of brood is put above a strong colony, large quantities of honey will be carried above and the bees will soon get accustomed to storing above by the time all the brood in the upper story is hatched out.

Now I will tell you how a large portion of that honey can be transferred to boxes if you do not care for extracted honey. Simply transfer the super or supers from some hive that has been working well or give them a full case of foundation, a section containing one or two drawn combs, shake all the bees off the rest of combs containing brood and let them run into the part containing the honey; put on the cases and close the hive and if you do not get a nice full case of comb honey it's your fault. The brood taken away can be tiered over the colony from which you stole the case or a new one started in and the operation repeated. It's a sort of "presto change" and beats feeding-back "all hollow." The bees rather enjoy shifting the honey about because they can work nights on it; every bee will be on the field in the morning.

On the 23d of May, we had quite a heavy honey flow and we caught two hundred large combfuls. We are now having it put into boxes as fast as we can. I took off seventy all capped from two hives on the 7th of June. It gives employment to the bees during warm weather by first securing your honey in large frames if boxes are not convenient and handy. The bees shift it into unfinished cases.

The above all applies to controlling increase of colonies by the manipulation of brood-combs containing brood in all stages. It would be folly to first put on empty combs and attempt to get them filled and transferred, because it uses up the bees faster than they come in.

We are now perfecting a system in combination with our nucleus management to secure nice honey in one-half-pound boxes to retail at 15 cts., and at the same time have plenty of uncapped section to give to our nuclei.

Notes from the Bay State Apiary.

BY HENRY ALLEY.

Just at this season in the year, and, in fact, for nearly two months past, business has been lively at our apiary and at the office of the APICULTURIST. We have been on the jump and working fifteen hours each day for several weeks, and even then, have been unable to keep up with orders and ship goods in all cases as promptly as our customers desired them. However, in this respect we have done as well as other dealers, as, so far as heard from, all have been nearly three weeks behind their orders.

First work in the apiary.

The first work in the queen-rearing apiary is to get the colonies in good condition for cell-building. This is done by feeding sugar syrup, contracting the entrance to the hives and packing so as to retain all the animal heat, and to prevent the cold from entering the brood-nest. We have but little trouble to keep the bees warm as only double-walled hives are used in the Bay State Apiary.

Early in May we had a large number of colonies strong enough to build queen cells, and on May 4th the bees were set to work at rearing queens; yet notwithstanding the early start we

had, there was not a queen fertilized and ready to ship until the first week in June.

The weather and queen-rearing.

Well, it did seem to me that there never was such cold, cloudy, windy and wet weather as we had all through the month of May and to this date, June 16, still continues. Once in a great while we had a warm day, but such days were followed by, at least, ten days of cold and wet weather. On Wednesday, June 11, we had the first warm, summer-like day. That night the wind swung round to the northeast and all hands had to put on winter clothing to keep warm, and then the rain and wind came and continued up to June 16, with not the slightest indications or prospect that the sun would ever shine again in this part of New England. During the first week in June, while people but two hundred miles from here were suffering from the heat, here in New England it was wet and cold. Old Sol will most likely let his light shine later on. All will rejoice when he does as we have been afflicted with the worst of weather since Sept. 1, 1888. I need not tell our readers the effect such weather has on the queen dealer, and beekeeping generally.

I find it has taken about five pounds of sugar, on an average of 8½ cents per lb. to rear each queen we have sent out since the last week in August, 1888. This little item is in addition to the "cussing" we have received and hard names we have been called because we were not more prompt in filling orders for queens. How could we do it? We have made every effort to ship queens and fill all orders as soon as possible, but it has been impossible for us to do all our customers justice. We have had no less than two hundred and fifty nucleus colonies, each containing a queen or a queen-cell, yet the weather was such all through the month of May that only a few queens were fertilized on any day.

Our readers know, or, at least, the older ones know that queens will not leave the hive on the mating tour when the weather is cold and cloudy, and only on such days as are warm and pleasant — just such days as we have when bees are gathering honey in great quantities. Well, we do not have many honey-gathering days here or, rather, have not had the past two seasons. This state of things will not, in all probability, continue much longer.

If we are favored with a few pleasant days during the next three weeks, every order for queens will be filled before July 10. If any order remains unfilled on that date it will be because it has been overlooked or received on that day.

June 15, there was a change in the weather. Our hives are now full of honey; bees at work in sections, and all is going well.

No less than three hundred queen-cells were started on one day the past week from our $100 queen. This week as many more will be started. All this is in addition to the three hundred queens we now have in nuclei and in the queen-nurseries.

There are in the Bay State queen apiaries two hundred and fifty nuclei in as good condition as it is possible to get them. They are nearly all crowded with bees and brood. It has cost a good deal for sugar to do this, but the cost in this case is an item not to be considered. We have advertised queens for sale, and as orders are coming by each mail we must have the queens, leaving the cost to come in as a later consideration.

One hundred queens will be mailed this week (between June 16 and 21) to our customers. Right here, suppose we give the readers the contents of a few private letters that have come to us within a month.

The first one is from a well-known

writer for the API. He is also one of the largest beekeepers in America.

Selma, Texas, May 19, 1890.

MR. HENRY ALLEY:

DEAR SIR:—Two years ago you sent me the nicest Italian queen I ever saw. The colony gathered lots of honey and is now the best colony in my apiary. L. STACHELHAUSEN.

Considering that Mr. S. has several hundred colonies in his apiary, we are inclined to the opinion that we have reared more than one queen that is worth $100. Mr. S. was not requested to send us the above testimonial, and we really had forgotten that a queen was ever sent him from our apiary. Now here is another testimonial that seems to favor us, but is bad for other parties. As no names of dealers are given, no one will be badly hurt if we publish all the writer says about the queens he has purchased.

Little Rest, N. Y., May 28, 1890.

MR. ALLEY:

Please send me one of your nice queens as I have a queenless colony. The queens I got of you last year carried their colonies through the winter all right. Those purchased from other parties failed to winter their colonies.

WM. H. TOMPKINS.

Now this is the result of rearing queens on the haphazard plan, and sending out everything for queens that look like a queen bee. There are thousands of queens sent out every year that ought to have had their heads pinched the minute they left the cells. The person who pays fifty cents or seventy-five cents for such queens and introduces them to his colonies will surely regret it. Good queens cannot be reared and sold at fifty cents nor seventy-five cents each. At any rate I cannot do it and will not. True, we sell one queen to each subscriber of the API for seventy-five cents; but do you not know that we get more or less orders for other goods from each subscriber of the API? We do, and our way of increasing our subscription list is to sell each subscriber a queen for seventy-five cents, that generally brings out just such testimonials as are given here. We receive hundreds of testimonials each year, but we do not think it best to publish them all.

Rearing good queens— How it is done in the State Apiary.

All queen-cells are built in the strongest colonies and no weak colonies are ever permitted to rear queens for us. Here is our plan, and it will be well for those dealers who sent Mr. Thompson the queens that ruined his colonies to make a note of what we say here.

Our queens are started by queenless bees, and by the strongest colonies we have in the apiary. The other day we removed all the bees from a large colony for starting cells. It being an unusually strong colony I took a notion to weigh them (the bees alone) and there were twelve pounds of bees. Those fellows will rear queens that will take their colonies through the winter in the best condition. This strong colony was not permitted to work on the cells until they were finished. When they had worked upon them thirty-six hours, the cells were removed and placed in colonies to be finished having more than twelve pounds of bees even. There, reader, do you see the point? Do you see that there were not less than twenty-four pounds of bees, probably 100,000 bees in all, that built those queen cells? Another point is this: no one colony is allowed to rear over fifteen cells. We have had colonies build a larger number of queen cells but, if we are to rear good queens, not over twelve or fifteen cells should be built in the strongest colony, and under no circumstances rear queens in weak colonies. Did you ever hear any dealer in queens say that he reared his queens by using the number of bees for cell-building that we do? Not a queen dealer in the world has ever done it, nor has it ever been done by any one outside the Bay State Apiary.

We have always made it a practice to examine all queens before they were allowed to become fertile. If any seemed inferior in any respect, their heads were pinched at once.

It matters not by what method one rears queens; there will be more or less of them in the lot that should be destroyed. The dealer who makes it a practice to rear and ship only the finest formed, largest and most promising queens will always have all the orders he can fill.

We also make it a practice, when it is possible to do so, to rear a good many more queens than we can use. The largest and best queens are selected and placed in nuclei and when fertilized are sent to our customers.

A few more testimonials.

I came near forgetting about the testimonials which I intended to insert here. We have a few more good ones. Here is one of them.

Marshfield, Mo., June 5, 1890.

MR. HENRY ALLEY:

DEAR SIR:—I have been trying for the nicest colored queens that can be found. I have tried several dealers *and the best I have seen came from your apiary.*

M. L. MCNABB, P. M.

Nothing bad in the above. Our friend says no more in favor of our queens than hundreds of other customers have the last thirty years.

Adopt the best methods for rearing queens and good queens will be the result. We have left in our apiary about a dozen colonies of the choicest and handsomest Italian bees that can be found in the United States. It is pretty hard to decide which of these colonies has the handsomest bees. We have tested all of the queens in these colonies to see which produces the finest queens. Can see no difference in them. All produce large golden queens, and as fine in all respects as those reared from

Our hundred-dollar queen.

As this issue of the APICULTURIST will be an extra large one and will be read by hundreds of beekeepers who never before saw a copy of our paper, and, perhaps, never heard about the best Italian bees that we think can be found in the world, perhaps we may be excused for giving another brief description of this wonderful queen and her colony.

"There is a colony working well;" so says everybody who comes into our apiary. "Yes," we say, "that is our hundred dollar queen." "Would you like to see what a gentle colony of bees they are?" We then proceed to open the hive without bee-veil, smoke or rubber gloves. Nor does the stranger who stands looking on need any protection. The hive is opened, combs removed, and although there is a half bushel of bees in the colony not one leaves the combs or takes wing. We can open the hive twenty times a day with the same result. Now this colony is very strong, none stronger in the apiary; bees unusually gentle and the best workers and honey gatherers we ever had in our apiary. Her worker progeny are large, and very handsome. The queens are of a rich orange color. The drones are all large, active, and handsomely marked.

About seven hundred queens have been reared from this queen the present year and about three thousand will be reared before September 1. When one has a queen that combines all the desirable points that bees should possess she is indeed a prize. We have them in this $100 queen, viz.: — purity, beauty, gentle disposition, prolificness of queens, and excellent, yes, the *best* of honey foragers.

We will say to our new readers that we mail a daughter of this queen to each of the subscribers of this paper on receipt of seventy-five cents. Purity and safe arrival by mail guaranteed of all queens sent out from the Bay State queen-rearing apiaries.

One more puff for the queens reared in the Bay State Apiary.

Sylvan Beach, N. Y., June 9, 1890.

MR. ALLEY:— Your Beekeepers' Directory is a treasure. I have had queens from dealers from the Gulf to the Lakes, but the best I ever had are of your rearing.

P. W. LEETE.

Correct, my friend, the Directory *is* a treasure. It contains as much information on bees and bee culture as

any book in print devoted to beekeeping.

It is a wonder that at the low price we sell this book that more copies are not called for. The work contains the full address of two thousand beekeepers, and sixty-four pages of solid reading matter relating to the best management of bees for profit. Beside giving the best methods for rearing queens above a queen-excluder, and for rearing queens in colonies while a fertile queen still has possession of the combs, the work contains the best and most practical method for producing comb honey.

One dollar and twenty-five cents will purchase the book, and also the Api one year. If those who purchase the Directory are not well satisfied that they have their money's worth the remittance will be returned. How does this strike the reader?

A new strain of bees that was developed in the Bay State Apiary.

We shall not trouble you with any more testimonials at present. We will merely call your attention to the fact that any of those given in connection with these notes are not old. Please note the date of each. Now let me tell you about a new strain of bees we have and from what this strain was developed.

Last fall when cleaning up our nuclei for the season we found in our out queen-apiary (the one used for Carniolan queens) a muddy-yellow Carniolan queen. She had not been fertilized and could not be by Carniolan drones as we had none, nor did we have but a few Italian drones. It was late in the season (Oct. 10) to expect a queen to be fertilized, yet I did not despair. We had about fifty fine drones in our $100 colony. One day when the drones were flying out about fifty were caught and placed in a nucleus colony which was made all ready to move to the Carniolan apiary on the first day the weather was suitable for drones and queens to mate. After a few days waiting the weather cleared up warm about noon one day and we took the drones and went to the out apiary as quickly as our horse was able to take us there. When we got there the queen was on the wing. The drones were at once released and in a moment's time all were in the air. In less than ten minutes the queen returned bearing unmistakable indications of having been fertilized. In less than one hour from the time we started from home we returned with the queen. She was introduced to a weak colony, yet she managed to go through the winter all right, though there were less than a pint of bees this spring. This queen proves to be very prolific, the workers extra good honey gatherers, and handsomer marked yellow-banded bees cannot be found.

We shall commence at once to rear queens from her eggs, and have all of them fertilized by drones reared from our $100 queen. If this does not prove to be a good strain of bees we shall be disappointed.

Swarmers.

Reports concerning the self-hiver have not come in as rapidly as we desired. In our own apiary we have had but one swarm issue and that one we managed to hive in the swarmer described in the May issue of the Api. This worked to our entire satisfaction. About four-fifths of the bees were caught, or rather, hived in the box. If we can only induce our bees to swarm enough, we shall have a hiver that will give satisfaction in the hands of any beekeeper.

We are experimenting with the self-hiver described in the Jan. Api. We have them arranged in several positions and when perfected will describe with illustrations. That the self-hiver will work, and work satisfactorily is as certain as anything can be. We have the right principle, and all needed is a little experience to apply it to secure the end desired. The

swarmer has been made a success in many cases, and with a few minor changes in applying it to the hive will work perfectly.

The drone-and-queen trap.

The utility and practicability of the drone-and-queen trap was established the first year (1884). We need not say one word in its favor. All who use them praise and speak in the highest terms of this wonderful labor-saving device for the apiary. Supply dealers from all parts of the country are ordering traps by the quantity for their customers. Of the 100,000 now in use, no beekeeper has ever found any fault with them. They do all we claim for them. One beekeeper says the trap is a more important invention than the movable comb frame. This beekeeper is obliged to be away from home every day but Sunday and says he can leave his bees feeling that not a swarm can decamp; and if a swarm has issued during the day all he has to do to know it is to examine the trap when he returns home. If a queen is found in any of the traps he knows just what to do.

Those who keep bees and are in the apiary all the time will find that the trap saves them the trouble of climbing into trees for a swarm, or hunting on the ground for a queen in case her wing is clipped. No swarms can decamp as the queen is certain to be found in the trap when a swarm issues.

The utility of the trap is now so well established that in the future we propose to sell individual, township and county rights for people to use and manufacture them for sale.

We can supply the cone tubes, the only difficult thing to make about the traps, at a low figure. The wood parts may be obtained of the nearest dealer. Express charges are high, and they can be saved if one has the right to make and use the traps. The cone tubes can be sent by mail. I know of no better way for beekeepers to do in order to get the traps at the lowest possible cost than to club and purchase a township right.

We will sell one township right, and send one trap by mail for $5.00. The person who purchases territory can manufacture and sell as many traps as he can find demand for in the territory deeded to him, without further expense.

A county right will probably be the best to buy for one who has the machinery to get out the wood parts of the traps.

We will sell the right for any county for the small sum of $15 or any three counties for $40.

Just as we wrote the last line, Mrs. Alley came into the office and said "The bees are swarming."

As good fortune would have it, the bees were issuing from a hive on which we had just placed one of those drone-trap swarm-catchers.

The air was full of bees, and in the course of half an hour the entire swarm was in the drone-trap, nicely boxed and all ready to be hived. Well, didn't that work like a charm? That is the second time we have tried the drone-trap as a swarm-catcher and in both cases it worked just as we supposed it would and as we intended it should.

Those of our readers who also read *Gleanings in Bee Culture* must have read our description of this swarmer in the June 1 issue of that paper. We also will call to mind the remarks in brother Root's footnote at the end of my article. We ventured the prediction that this device would hive ninety nine out of every hundred swarms that issued. Brother R. said he hoped it would, but he said it in such a way that all understood that he did not take much stock in my statement. We shall probably live long enough to convince all beekeepers that that statement was not an idle one.

Well, the swarm we caught is now as quiet as can be. We have demonstrated to our entire satisfaction that this drone-trap swarm-catcher is a success.

Now when anyone purchases territory either an individual, township or for counties, the right to make, use and sell the drone-trap swarmer will be included. We do not expect to get rich out of the patent business. I am desirous and anxious to introduce the trap and swarmer into every section of the country, and for that reason have put the prices for territorial rights at a low figure.

Address, HENRY ALLEY,
Wenham, Mass.

Increase by forced natural swarming.

E. L. PRATT.

We always make it a point to get all swarming over with before the main harvest, and by the jumping plan we can fix all the weaker colonies and draw enough bees from the stronger to prolong the day just enough to bring all our bees to a certain standard a few weeks before clover, when wholesale swarming commences and the Alley trap comes into play.

Notwithstanding there will be a few colonies having weaker queens that cannot build up to the swarming point until after the swarming season is about over.

To prevent these from taking on the swarming mania during the harvest we force out a natural swarm artificially about a week before white clover opens.

Artificial swarming is oftentimes good but natural swarming is better, and if we understand our bees we can just as well operate with Dame Nature as against her.

What first gave me the cue to forced natural swarming was having a swarm come out with a virgin queen from cells the bees had built with the intention of superseding the old queen. I at once commenced experimenting and the result has been very satisfactory. I can say that in our locality we can make a colony cast a natural swarm even if they had no intention of doing so for some time to come.

The modus operandi is as follows: exchange stands of two moderately populous colonies, and after they are down to working order take away their queens long enough for them to start cells. At the end of the third day run a virgin queen into each and leave them two or three days longer, when the laying queen can be safely reintroduced (a just laying queen is better) either on a full comb of brood and bees or by the candy-plug-cage method, which by the way is the best ever given to the fraternity.

I need not say that the queen-trap should be left at the entrance of both hives during the whole time so as to catch the queens if they attempt to leave the hive.

There is no fixed time when the swarm will come out but they are sure to swarm and you must be on hand with an empty hive and work quickly or you will lose them. They act for all the world like a swarm that has it in mind to decamp. Whichever queen they come out with must be kept in the trap until the bees are all in the hive or clinging thereto, for if you allow her to escape while changing the trap from the old to the new hive she will surely lead your bees to parts unknown.

I have never known them to cluster, but after they are hived they work exactly like a natural swarm.

There are a number of little points that cannot be told here and which would not be brought to mind until the occasion offers. I have simply outlined a method of procedure and leave to the reader to experiment on it.

If the swarm comes out with the laying queen, hive it on wide starters in the ordinary way; but if it is the virgin, use full sheets of foundation at the sides and starters in the middle, so as to prevent the building of drone comb. All swarms, whether

natural or otherwise having a virgin queen, should have their hives arranged in this manner. If the hive for any swarm is raised off the bottom-board two inches or more the majority of the combs will be attached to the bottom bars and many will be firmly built to them the entire length; then wiring will be unnecessary.

After a swarm has been hived a few days look the comb over to see when they are liable to build drone and comb and jump them to the centre bring one of the completed combs to its place. By following a swarm up closely you can prevent the building of drone-comb entirely.

If a patch is started cut it out and jump it to the centre. It will always be found at the sides. If they still persist in building drone-comb take the frame away entirely and give a full sheet of foundation.

Some of our nicest and straightest combs were built from starters by swarms. Full sheets should always be given bees in established colonies.

An experiment.

During a heavy flow of honey this spring we took the drone-trap away from one of our strongest colonies to ascertain whether or not it was a hindrance to the bees. We are pleased to go on record as saying "It is not." The one we matched with puts in a little more honey through the trap than the one without. Bees can slide through perforated metal "as slick as a mitten" after a little practice. We had one colony that spent three days practising on the zinc but now they do not mind it in the least. Bees are creatures of habit like men.

A blizzard of orders.

"Oh pity, pity me!" for I am a supply dealer and a queen-breeder and with orders piled so high and still coming. All beekeepers should learn a lesson by this season's experience. I feel like saying, "I told you so, I knew the cow would eat the grindstone" and next season will be still worse, so it will behoove us all to enlarge our facilities for there is a good time coming for the bee business. We never had such a spring for honey. Clover is doing finely on the start. The tide is turning and everything is pointing toward a successful season all around. Now, a word to the beekeepers in a small way: have your orders, whatever they may be, large or small, in the hands of your dealer two months before they are needed. This is a thing that cannot be put off.

Of course the burning out of G. B. Lewis & Co.'s factory cuts down the supply of sections just at a time when they were most needed, and a shortage in one article delays an order unless two shipments are made. We feel like saying that we are glad to get our orders filled by hook or by crook this season.

Mr. C. W. Costellow has proposed a meeting of the New England supply dealers which we think a good plan. If any have suggestions to make, put them down on a card and direct to Waterborough, Me.

A fine bee.

We have seen a sample of the bees Mr. Alley run out last season. They are finely colored and possess all the desirable points of Carniolans.

Marlboro, Mass.

Query Department.

Diseased Bees.

MR. ALLEY:

A few colonies in my apiary are diseased. Bees turn black and die. Do you know anything about this disease?

WM. STEVENSON.

Yes, we know something about it. Should say it is what is called the nameless disease. The remedy is simple, cheap and easily applied. Make a strong brine, about an ounce

of salt to a pint of water. Uncover the frames and wet the bees, combs, frames and all the inside of the hive with the mixture. It will do no harm in any event, and will surely cure the disease.

Some twelve years ago there was a colony in our apiary in as bad condition as you say yours are. One day I uncovered the frames and sprinkled the top-bars with fine salt and then wet the whole thing with water. Result was that all the stricken bees died and the disease disappeared.

This malady has made its appearance in several apiaries in California. Salt is the remedy.

Moving Bees.

Chicago, May 13, 1890.

AM. API.:

Sometime please answer the following question:

In the fall *before* I pack my bees for winter (I winter on summer stands) could I move the hives about fifty to seventy-five feet without danger of loss? I have been watching API and *Gleanings* for information that *just hit* my case, but have not noticed any thing.

JOS F. BARTON.

There is no way you can remove the hives without losing many of the bees unless the hives are moved only a few feet each time.

A much better way would be to move the bees about a mile; let them remain a month or so and then take them back and place in the new location. This is the most practical way.

Another way is to remove the queens and confine the bees to the hives three days. The bees may then be placed in a new location when few, if any, would return to the old stand. The queens should be reïntroduced at the end of three days.

Introducing queens at swarming time.

We have received many inquiries as to the best way to introduce a queen at swarming time. An order just came for a queen. The writer says: "Shall I put the new queen in with the swarm or in the old hive? How shall I do it?"

We never introduce a strange queen to a *swarm* of bees. As the person who sent the above queries says he is a beginner and knows nothing about bees, we will first inform him that a *swarm* of bees are the bees that have issued from a full colony. Well, now the new queen should not be introduced to the swarm, nor to the old colony until after the combs have been examined and all the queen-cells destroyed. Three days later introduce the queen.

If the queen is purchased of us and she is mailed in one of our introducing and shipping cages, all there is to do is merely to place the cage in the hive so that the bees of the colony can remove the sugar food in the cage and thus release the queen.

We have sent out a few queens in Pratt's shipping cage. If any customer happens to get a queen in one of these you will notice that there is a small hole in the food end of the cage. The food is held in place by paper. Take a nail and pierce the paper before placing the cage in the hive.

We usually place the cage at the bottom of a brood frame, close the hive and in the course of a week examine the combs for eggs or for the queen. Do not put the cage near the hive till two days after the swarm has issued, or the colony has been queenless.

Apiculturist Mail-box.

Two Years of the Api. free.

New York, June 11, 1890.

HENRY ALLEY:

DEAR SIR:

Queen came to-day, O. K. She is much handsomer than a $3.00 queen that I bought this spring. If she does as well, I shall consider that I have gained two years of the API free.

HENRY HALL.

The Beekeeper's Directory.

A new book is on our desk. It is entitled "The National Beekeepers' Directory," and contains a classified list of 2,000 beekeepers of the United States and Canada (including about 200 supply dealers), with essays and hints regarding the successful management of the apiary. It is "compiled by Henry Alley, Wenham, Mass." It contains 110 pages, one-half of which are devoted to names and addresses of beekeepers, and the other half to the practical hints mentioned above, including Mr. Alley's "method for rearing queens in full colonies, while a fertile queen has possession of the combs." Price by mail, $1.00 bound in cloth.—*American Bee Journal.*

PRICES OF SUPPLIES

—AT THE—

BAY STATE APIARY,

WENHAM, MASS.

Bee-Hives.

We offer only the Bay State hive for sale.

One hive in the flat,	$ 3.00
Six hives " " "	15.00
Twelve " " " "	27.00

All parts of the Hive are included in the above, frames, sections and all but paint and nails.

Sections.

One-piece sections per 1,000	$4.50
" " " " 500	2.50
" " " " 100	.60

Langstroth Frames.

Material for (hanging) frames for Standard L. Hive per 100.....$3.00

The frames we use are so constructed that the bees will not build comb between or over them at the top, nor fasten the section case and frames together, as is the case when the common top bar is used.

Nailing Block for Frames.

No one can do good work at nailing frames without a proper board to nail them on. We can send one, by express, that will do the work nicely price..... .50

Comb Foundation.

We can supply the best brands at manufacturers' prices, and ship direct to our customers from the nearest factory. We also keep a quantity in stock to fill small orders.

1 to 10 lbs., for brood frames.....55 cts. per lb.
1 " " " " sections.....60 " " "

We keep in stock but one dimension of brood-foundation 17½ x 7 inches. This is large enough for any L. frame and is just right for the Bay State frame.

Perforated Zinc.

This we can supply in any quantities, shipped with other goods, per foot.....12 cts.
If sent by mail, add 10 cents per foot for postage.

Honey Extractors.

THE E. T. LEWIS & Co. EXTRACTOR.

No. 22. 28 inches in diameter, 25 inches high, 2-frame for any size up to 12½ x 19; room for 25 lbs., honey below reel, and the best extractor ever made for. $10.00

We sell this size only as it is the most convenient to use of any found in use. This extractor is adapted to any frame in use.

Honey Knives.

Root's knife, by express,	.70
" " by mail,	.75

Bee Veils.

The veil has a rubber band which draws the top together; it is then placed over any hat and drawn until the elastic is over the hat band.

Common net, by mail..... .35

Smokers.

Bingham & Hetherington's only.
By mail, $1.75; by express.....$1.50

Queens and Full Colonies.

Queens.

Prices.

Untested queens, each,	$1.00
Selected " "	1.25
Tested " "	2.00
Extra breeding queens, the best we have, each,	3.00

Our untested queens are sent out before any of their brood hatches. 95 per cent will prove to be purely mated. Safe arrival and purity guaranteed in all cases.

Carniolan queens and bees at the above prices. Our strain of this new race of bees cannot be excelled.

Full Colonies.

We consider eight frames well filled with brood and covered with bees a full colony. Prices of such in B. S. hive, including one set of sections, $12.00. Purchasers to pay express charges. Safe arrival guaranteed.

Fourth Edition of the

Beekeepers' Handy Book, or Thirty Years among the bees. 75 pages, with illustrations, by mail..... 50

Queen-rearing Apparatus.

Beekeepers who rear queens, whether by the Alley method or by any other, should have the apparatus here described. The SWARM-BOX and QUEEN-NURSERY are articles that no person who rears queens ought to dispense with.

By using the swarm-box a large colony of bees can be confined a long time or transported safely hundreds of miles. It is a very useful article about the apiary at all times during the season.

Sent only by express, price, $1.25.

When a colony swarms and it is desirable to preserve the queen-cells, and no nuclei are at hand, the Queen-nursery in such cases will be found invaluable; the cells can be placed in them and they need no further care for a week or more. Virgin or fertile queens can be kept in the nursery for several weeks. We have sold a large number of queen-nurseries in years past.

The following articles are also used in rearing queens, a full description of which can be found in our work upon queen-rearing.

	Express.	Mail.
Queen-nursery (of 21 cages).....	$1.25	$1.60
Swarm-box.....	1.25	
Fertilizing-hive (complete)	.50	
Fumigator for using tobacco..... ...	.25	.30
Cone-feeder.....	.15	.20

To make the lot complete, we put in each package one drone-and-queen-trap, one copy of THIRTY YEARS AMONG THE BEES, and send all by express for..... $4.50

All these articles can be packed in the swarm-box and sent safely by express or freight.

Brooms for Brushing Bees from Combs.

We find a small "corn-broom" best for this purpose as it does not injure or irritate the bees, and will do the work better and quicker than anything else used for the purpose.

1 broom, by mail	.25
1 " by express.....	.20

HOW TO REMIT MONEY.

Remit by registered letters, cashier's check or express orders. If sent by money orders or postal notes, have them made payable at the Salem, Mass., P. O. Make all remittances payable to the order of the AMERICAN APICULTURIST.

Address,

AMERICAN APICULTURIST,

Wenham, Essex Co., Mass.

THE * AMERICAN * APICULTURIST.

A JOURNAL FOR THE NOVICE AND EXPERT IN BEEKEEPING.

PUBLISHED MONTHLY. SUBSCRIPTION PRICE, 75 CTS. PER ANNUM.

HENRY ALLEY, - - - EDITOR.

VOL. VIII. WENHAM, MASS., AUGUST 1, 1890. NO. 8.

Entered at Post-office as second-class matter.

The Editor's Department.

The honey crop.

Our splendid honey crop was cut short by drought. Nevertheless, we got more honey and of a much better quality, than for several years past.

Supersede your old queens.

Don't allow any colony to go into winter quarters with an old queen. Such a queen will most likely fail early the next season. A colony which gives promise early in the spring of a good yield of honey will do nothing on account of the failure of the queen.

It will pay to requeen colonies each year. Old queen bees are very poor property.

When a queen is two years old she has seen her best days and should be superseded. If you are a subscriber to our paper send seventy-five cents and get one of those daughters reared from our $100 queen. If you are not a subscriber, send $1.50 and get a queen and the API one year.

Every reader of the APICULTURIST should order and introduce a young queen reared from our hundred-dollar queen. This is the finest strain of Italian bees we have ever had in our apiary. We wish to remind those who send for sample copies of the APICULTURIST that they can get our paper one year, and a selected daughter of the above queen, for $1.50. Now is a good time to subscribe. We can mail the queen in a few days after the order reaches us.

The drone-and-queen trap.

If you have not seen one of our drone-and-queen traps we will mail one to your address on receipt of fifty cents. If satisfied with it and think you desire an individual or township right, the fifty cents may be deducted from the prices for rights given on another page.

Rearing queens.

We have experienced a temporary set-back, in our queen-rearing operations since July came in. Had we not expected something of the kind our customers might have had to wait for queens.

For some cause which we cannot make out, about four hundred queen cells failed to hatch. As we have plenty of queens no one will have to wait for them a great while.

Yellow-banded Carniolan bees.

The queens reared from our yellow Carniolan mother are very large and handsome. We have in the apiary about fifty such queens and all are laying finely and seem to be very prolific. If they are duplicates of their mother in all good points, they will satisfy any beekeeper. Prices same as for Italians.

We have one very dark Carniolan queen that is giving the most beautiful three-banded workers we have. She is such a curiosity that we shall introduce her to a full colony.

Queens in exchange for honey.

We will exchange some of our finest queens for either extracted or comb honey. Anyone desiring to exchange will please address HENRY ALLEY, *Wenham, Mass.*

How to remit.

All remittances to us should be made payable to the order of THE AMERICAN APICULTURIST. Please bear this in mind.

Siftings in Bee Culture.

CONDUCTED BY M. A. KELLEY.

Mr. C. H. Dibbern has been inventing some more and has now what he says is a perfect bee-escape.

Many of the reports in the papers indicate another poor honey year. Well, well, we must make the best of it.

The *Beehive* is printing a serial poem. The "Hive" is rather small to be filled with anything but nectar.

Have yon ever observed that bee-keepers, as a class, are rather good-looking? Or is it because only the good-looking ones have their pictures published?

Mr. C. F. Muth, in a recent *Gleanings*, gives much valuable information about selling honey. Lack of space forbids its reproduction here. Get *Gleanings* and read for yourself.

A neat idea of Mr. S. F. Newman in *A. B. J.* is to teach the bees to carry a few seeds of the sweet clover and drop them where they will grow. The point is, of course, to do this yourself.

What a grand thing it would be to have all, or even a majority of the "mooted points" in bee culture settled finally and forever by some competent authority! But this I fear, can never be.

A great deal of nonsense about "dead-air spaces" is to be found in the papers. A "dead-air space," in order to be such, must be airtight and must be surrounded by exact thermal equilibrium.

Dr. Tinker has our thanks for a copy of his new book. It is called "Beekeeping for Profit," and it is, like all of the doctor's productions, as nearly perfect as human skill, care and good judgment can make a book of its size and scope.

A practical machine for uncapping combs for extracting is the one great need of large producers of liquid honey. Let some genius invent one at once. *Siftings* remembers that there is such a machine in existence but does not regard it a success.

Our co-worker, Mr. E. L. Pratt, sent out the first of April a bee-edition of the *Companion and Prize Weekly*. Four of the eight large pages are devoted to beekeeping. Many of the most useful hives and apiarian implements are nicely illustrated.

A thing of beauty as well as utility is Brother Newman's book, "Bees and Honey." It should be in the hands of every beekeeper in the land. It is largely rewritten and is fully up with the times. It is well-nigh perfection as to its illustrations, matter and make-up.

Let the beginner start right. "Get the best" is a good rule in beekeeping as well as in other things. Get good tools to work with, it will pay in real comfort. To do a thing well requires correct knowledge, great care and good implements to work with. Cheap things are often dearest in the end.

One great trouble as to hives in our sunny south is that the flat-covered boards will warp. I have lost sleep nights trying to devise some sort of flat-cover that would remain true. It seems to me now that nothing but a slab of stone will fill the bill? Have any of our readers tried stone covers?

The Review for March contains an editorial on the production of comb honey that, in the humble estimation of *Siftings* is worth more than the price of that excellent Journal for the entire year. I cannot "sift" it and give you the wheat, for it is all wheat. Get the *Review* and read it for yourself.

The *Beekeepers' Review* for March rebukes Mr. A. I. Root pretty severely for the unreasonable position he takes with regard to patents. In closing, Mr. Hutchinson says: "Mr. Root's position is very peculiar, and one that cannot be successfully defended by argument." Mr. Root is almost alone in his strange views about this matter.

Mr. James A. Stone in A. B. J. gives some good advice as to keeping honey. Do not put it in the cellar but in some dry, warm place. It would be a splendid thing to have correct information as to the management of honey plainly printed on a gummed label so that all who buy might read and thus know how to care for their honey. It would pay the producer a hundredfold in increased sales.

In view of the present trouble to keep sections free from propolis how would it do to make them alike on all sides, that is without insets, and support them in the supers, bee-space apart, in all directions upon the points of wire nails driven through the slats of the super? This is only a hint, but if anyone invents such a thing don't you see that *Siftings* can be *fashionable* and *claim* priority?

Much is being said in the bee journals about supers. No one seems to be satisfied with those in use. Most bee men are all the time looking for something better. One leading beekeeper says he *must* have something better. It may be that this general dissatisfaction with the supers in use will lead to a radical change in the section itself. If the super cannot be made to suit the section, why not make the section to suit the super?

A large card printed in colors containing the leading facts about comb and extracted honey to be framed and hung where honey is for sale would do a world of good. It should be illustrated and have the local dealer's address placed upon it in such a way as to appear that the whole affair was his own special announcement. Now, let some of our brethren who are printers see to it that we have such a card before we come to sell the coming season's crop.

The editor of the *Canadian Bee Journal* says, "it is totally unnecessary to wire frames of the dimensions you name ($10\frac{3}{4} \times 14$), or in fact any frame having a sufficiently stiff top-bar to prevent sagging of the comb."

The editor of the Api and Dr. G. L. Tinker are of the same opinion and this triumvirate of leading lights in the vocation is good authority on such points. Will the beekeeper of the future wire his frames?

It would be interesting to know what proportion of the beekeepers of the world use veils. Mr. Doolittle says he always uses one when working with the bees. I think I would quit the business if I were obliged to use a veil. I regard them as a nuisance, absolutely necessary at times it is true, but still what might be called a necessary nuisance. Handy to have around, for when you need one you need it badly, but from their usual use, good luck, deliver us.

For one, I think the course of *Gleanings* regarding Carniolans is commendable.

Mr. Root does not wish to sell

queens until he is further persuaded of their value.

What *is* the matter with the Italians? They have been tried long and severely in competition with other races and have *not been* found wanting. They are the "coming bee," and they bring tons of honey with them. Did you ever hear of train-loads, or car-loads, or even tons of honey before the days of the beautiful Italians?

What is the exact size of the Langstroth frame?

"The Langstroth frame is $17\frac{3}{8} \times 9\frac{1}{8}$ inches."

J. P. H. Brown.

"The Standard Langstroth frame is $17\frac{3}{8} \times 9\frac{1}{8}$ inches."

G. W. Demaree.

"I always supposed it to be $17\frac{3}{8} \times 9\frac{1}{8}$ inches."

Eugene Secor.

"The frame is $17\frac{3}{8} \times 9\frac{1}{8}$ inches.

A. J. Cook.

Of course these men all know just what they are talking about. Root's "Simplicity" frame which is $17\frac{5}{8} \times 9\frac{1}{8}$ turns out to be almost *but not quite an L.*

Mr. John F. Gates, in the *Canadian Bee Journal*, makes some rather cutting, yet true and timely, remarks as to the too common practice of some of the older brethren of lauding bee-keeping too highly. The day is past for this sort of thing. Let your enthusiasm be properly curbed and bounded. The conclusion of the whole matter, as it seems to me is, that it requires as much hard work and hard worry to make beekeeping pay as to succeed in any other vocation. The way we tread is not a path of roses. Another mistake is made in trying to induce women and invalids to engage in this pursuit *under the impression that there is no work about it.* Rather say to all that there is hard work, heavy work and hot work and plenty of it in beekeeping.

I would not deter women and invalids from keeping bees, but let them understand that a strong man is at times scarcely sufficient for the work.

Mr. Doolittle gives his views at length as to preventing increase in *Gleanings* for March.

It would not do, with the space at our disposal, to copy his article entire, so we shall simply "sift" out some of the most important points. He gives three methods. The first, which he prefers, is to contract early in the spring to five combs. Then, when by giving them combs of honey outside of the division board, they have their five frames full of brood he takes the queen of one hive and one frame of the brood along with one empty frame with a starter which he leaves on the old stand to build comb. He then takes all the remaining brood and adds it to the next hive which is thus greatly reënforced. In the fall the little colonies are united or added to weak swarms.

The second plan is to cage the queen at the time she swarms, cutting out all queen cells at the end of six days and again at the end of fourteen days from time of swarming and then releasing the queen.

The third plan is that given by Prof. Cook and is to hive the first swarm of the season in a new hive, and put the next swarm that issues in the hive the first came from and the next in that the second came from, and so on to the end of the season.

After all, we are told by J. M. Doolittle in *Gleanings* that brace combs are a blessing. He gives two reasons for his view. First, they answer for Hill's devices, giving a winter passage over the combs, and, second, they serve as ladders for the bees to go up to the sections, thus saving much time and honey.

There is one class of persons that I would like to see encouraged in beekeeping. I mean our bright Amer-

ican boys. We teach other trades to our boys and why not beekeeping? Not often do invalids and persons who have failed in other callings make good beekeepers. They have failure to begin with. But take a boy and bring him to handle bees and he will, if at all adapted to the business, make it a success. The young blood of our country is needed in apiculture as well as in other vocations. To the inventive genius of the boys of our land must be relegated for solution many of the knotty problems that vex us older heads. The energy, the originality, the enthusiasm of youth are only qualities that will press to successful issue many of the experiments of the day.

How many of our boy readers are already beekeepers? I would like to know. Send me a postal card giving your name, age, address, number of colonies, etc., and I will report it all in the API.

That Self-hiver, etc.

KIT CLOVER.

I am still on the "tenter hooks" of uncertainty regarding that self-hiver, and I want more light. Will not "Bro." (that's what all the bee-men seem to call each other) Pratt forgive my "swear words" and help me out a little.

Here is my trouble. Will the self-hiver catch a virgin queen, and if so, is it all right that she should not begin laying until after swarming time?

I can make matters all right with the old queen, not, Mr. Editor, because I read "two-penny" papers, for I read about all the bee papers published, but simply because I *can't* "shin" trees, worth a cent. I snip the queen's wing, and that ends my trouble. I can hive the first swarm that comes off, all right, but that miserable, high-flying second swarm, that is what troubles me. They go to the very tip-top of our oak trees, and I can't follow.

Now, after the first swarm has issued, can one put on an Alley self-hiver, or queen-trap, or anything else, and let it stay there until the hive has swarmed its second time, and will the queen go to laying after the cluster has been hived in a new hive.

Another question is this; can we keep down increase by putting this afterswarm back into the parent hive? This can be done in some cases, I know, for I have done it, myself, and the bees went to work splendidly, but do they usually do so? And is there any plan by which one can prevent afterswarming except by cutting out all the queen cells?

I have tried that process with three hives this spring and the result is, I have six good flourishing young colonies, from the three, but no surplus honey. I suppose I skipped some cells, or did they build cells later on? I cut them out the fifth day after the first swarm issued. In one case the second swarm came out on the twelfth day, and when I opened the hive, I found two or three empty queen cells in plain sight, where there were none the day I cut out cells. Did they build them later?

How would it work to have good laying queens in nuclei, and introduce one to the old hive just after the swarm has issued? And now, Mr. Pratt, *do* the Carniolan bees swarm more "early and often" (as a bad man votes) than any other breed of bees?

I began the season with five colonies, and by the last of June had eleven. My neighbor had five colonies of Italians. He now has six.

Another neighbor began with ten; has nine now, since one starved. Another had one hundred colonies of Italians and has not had a swarm.

My new colonies have filled ten brood-frames, having only one strip of foundation two inches wide, and the parent colonies have their brood chambers full.

From what I see of other bees, I think I want nothing but Carniolans;

but, if they are to swarm and swarm and do nothing else, why, that will not altogether suit me.

Here is a comparison. At the time I got my first swarm of bees, a neighbor got one of blacks. That was two years ago in June. Last year I should have increased to eleven swarms if I had not put them back in all the while, sold two swarms, lost one; and increased to five that I wintered over, and took off three hundred pounds one pound sections, and so for this year I have six young swarms, all sold. My neighbor with the blacks, increased to three swarms last year, lost one, one starved next spring, and they now have the old colony, and one just now (July) issued. No honey, not an ounce.

I am certain of some points about Carniolans. They are gentle, hardy, and excellent workers, capping the whitest honey I ever saw, and getting the least dark honey, but if they are bound to swarm too often, I just want some kind of a trap to catch them.

No use to tell me to put salt on their tails, I can't do it.

Do give me a little light on this matter.

Dubuque, Ia.

For reply to this communication see page 124. —Ed.

How our queens and the manager of the Bay State Apiary are appreciated.

Editor American Api:

Your postal at hand some days since and the queen and her escort arrived safely this A. M. She is as handsome as a gold coin fresh from the mint, a sort of personification of be(e)atific perfection. If any one can show finer queens or handsomer bees as their offspring than is to be found in our little amateur apiary, we should be pleased to hear from them. In selecting at the start the strain of bees we would cultivate, we feel that we made the right choice. We have strictly adhered to that choice, without any deviation and all the colonies are "queened" either by one reared in the Bay State apiary, or a daughter raised by ourselves. Our deal with you is one of the exceptionally few instances, in which we hav'n't been swindled or deceived in some way or other in dealing with agents or dealers in supplies; and we contemplate that fact with as much satisfaction as we do the nice coating of honey on the matutinal griddle cake.

We hatched three queens last night in some nuclei we had prepared, and they all are that same splendid color and size as that from you. You see we had a good chance to compare them, and prove our standard, yours being caged. The bees are all right. We had one colony with a two-year queen that filled about three-fourths of their brood frames with honey. We extracted twenty-seven pounds and put them back and now they are well filled with brood. Your queen is to supersede her to-night. We have taken off but little of our honey yet—it ripens well in the hive. We took forty-nine pounds capped and perfect from one hive leaving just half the sections on; they were filled but not quite capped We have several others that will do as well or better—say a dozen or so.

To-day the bees have taken to robbing some new swarms we had started (three or four) and we have shed much vigorous English and lots of smoker manipulation at this evidence of their moral turpitude; have closed the new ones up tight to keep them out.

On the whole we are doing very well. We've found out that there's lots of things we don't know about "bee culture" but we're learning and you'll hear from our apiary yet. We mean to have a good one. At the same time there's lots of things we do know—such as what hive we want, also on the subject of bee culture as a pursuit for women and some other things of which I may sometime write you. Am glad

you propose to visit us. Come at any time, only drop us a postal card, that we may be at home. We shall be more than glad to welcome you. Will do our best to entertain you and make you leak bee wisdom, all of which will be most carefully stored for future use and experiment by

Yours very truly,

MRS. G. M. BARKER.

P. S. Will also explain our aggregation of freaks yclept—hives, etc.

Natick, Mass.

Tell-tale arrangements.

E. L. PRATT.

I have tried tacks, stones, section pieces, blocks, pins, nails and I don't know "what all," to remind me of work to be done with nuclei, and I have not yet found a convenient plan.

We want a plan to tell us where our mated queens may be found and something that will "cry out in a *very loud voice*" and point in a forcible manner to those hives in want of a cell or virgin queen.

I propose to try a flag system next season, something as follows: I shall have a lot of pine sticks cut about eight inches in length by one-fourth square. On the ends of them will be tacked little three-cornered flags made of colored flannel or felt, red on one end of each stick and blue on the other. One of these sticks will be attached to each hive by a small wire nail, pivot fashion, in such a manner that I shall be able to display either color at will.

Red will mean "queenless," and blue for "laying queen." When both flags hang down with the stick in an horizontal position, it will mean "normal state."

I think with this arrangement, it will be hard on a keeper's conscience to see many red flags in sight any length of time. There will always be a great effort on my part to keep the blues up rather than the reds.

Railroad men have used a flag system for a great many years with satisfaction. Should think queen-breeders could pattern after them and adopt a similar well tried system in connection with their business.

Artificial heat.

I was very much interested in "Foreign Notes" in your January issue.

Brother Stachelhausen has gathered together very valuable and interesting matter.

What interested me more than anything else was "Artificial heat for bees in spring." I had in mind an experiment for March, 1890, somewhat as follows: a hollow division board made of tin was to be placed close up to the contracted brood-nest inside a regular division board made of frame stuff covered with felt and close to the packing. A small rubber hose was to be connected at the bottom of this tin-chamber outside the hive in such a manner that it could be filled readily with hot water and emptied of cold from the outside of the hive without disturbing the colony. Every morning and night the cold water could be run out and hot water run in by a tunnel.

I was in hopes to be able to force along several colonies to use on early queens. Also to secure drones equally early. Hope Brother S. will keep us posted on this matter. I believe artificial heat can be used to advantage in forcing bees the same as with plants under glass.

A. I. Root failed with an experiment of this kind some years ago. Since then I have not seen much mention of the scheme.

Marlboro, Mass.

Notes and comments.

BY HENRY ALLEY.

Bee veils.

Where one has a race or strain of bees that cannot be handled with a good smoker, we advise a change in

the "breed." We never owned a bee-veil and seldom have seen the need of such a thing in our apiary. A Brigham & Hetherington smoker is all anyone needs to handle bees without getting stung.

Bee-veils should be worn as little as possible on account of injury to the eyesight. There is no doubt that the straining of the eyes in looking through the fine meshes of a veil will, in time, cause blindness.

Like brother Kelley we would give up beekeeping rather than wear a bee veil. Our work is such that a veil would be in use ten hours each day.

Advice to beginners.

"Siftings" advice to beginners to start right is hitting the nail on the head.

Too many of those who commence beekeeping do not look around and investigate as much as they should before investing their money in bees. Many of the beekeepers of the present day soon found when they had had a little experience in bee-culture that they started wrong and too much in a hurry.

Our advice to the beginner is to visit several successful beekeepers for the purpose of getting some practical information concerning the best hives and other appliances and go into keeping bees understandingly.

Keeping comb honey.

I have known beekeepers to remove honey from the hive and at once place it in a cold, damp cellar. In a short time the honey was nearly ruined. The moisture of the cellar would condense on the comb and that which was not sealed when put in the cellar had gathered moisture, soured and ran out the cells, thus spoiling the honey as well as the sale of it.

Now our plan for keeping comb-honey is this: We happen to have considerable section honey this year (rather an unusual thing for us, I admit) and we propose to keep it in good condition until sold. The cases as they were removed from the hives were placed in a small room, the dimensions of which are about ten feet square. There is but one window, and to keep out flies, bees, etc., a wire screen is used the whole size of the window.

When the weather is dry and warm, the window will be opened to give ventilation. In damp and rainy weather, and in dog-day weather especially, a good sized lamp will be placed in the room to keep up the temperature, and to keep the room dry and also to to give better ventilation.

Those who practise this method will have to keep a lookout for the moth.

Although these troublesome insects do not often destroy honey in the comb, yet they will work in it some, enough certain to spoil the appearance of many sections.

Why tops of hives warp.

Siftings says the tops of his hives warp. The only way to prevent it is to send north and get some of our soft lumber and then dress the tops with two coats of white lead. Make the tops of seven-eighths-thick boards and cross-cleat them by pieces three inches wide. Boards of any kind without paint will warp and crack.

The tops of our Bay State hives are made of boards but three-eighths inch thick, yet they are so thoroughly nailed and cleated that they do not warp. Unless made of a good quality of lumber they will crack some toward the ends, but this does not cause them to leak.

Self-hivers.

Kit Clover, whose article will be found on page 121, this issue, says she wants more light concerning the working of the self-hiver. This device will catch and hold any queen that attempts to leave the hive. I do not say that every swarm that issues where the hiver is used will be hived. If not successfully hived in the new hive the bees will return to the parent

stock. As the swarming season is now over, we shall drop the self-hiver business till next winter, then our readers shall have more light about this wonderful invention for catching swarms of bees when they issue.

Yes, it is just right for the virgin queen, or rather what was a virgin queen, not to lay till after swarming is over. When the last swarm issues, whether it is the second, third or fourth swarm that comes off, the queen is usually but a few hours old. It will be from seven to ten days before she will be fertilized and commence to lay. If the queen is fertilized when five days old (and I never knew one to mate when younger than five days old) she would not commence to lay till she was seven days old. But there are but few queens fertilized when just five days old. The majority are ten days old when they commence to lay.

If Kit Clover will use the drone-and-queen trap there will be no need of shinning trees for those high-flying second swarms. The trap will catch all queens, young or old, or whether fertilized or not, and hold them, too, until the bees return. We never pay the least attention to bees if we are busy when a swarm issues; don't even look to see where they cluster, as they sometimes do and hang on the limb of a tree for half an hour without a queen, and then return. We go directly to the trap, and finding the queen caged, make preparations for the return of the bees. If we return the swarm, the cells are first removed; then when the bees are about all in the hive, the queen is liberated and allowed to join her colony.

By all means keep the trap on the hive for twelve days after the first swarm issues, then remove it to give the young queen a chance to become fertile. No swarms are likely to issue after the twelfth day.

Increase can be kept down by returning the first swarm that comes out. While the bees are in the air, open the hive and destroy all the queen cells. I never knew a swarm to issue where this had been repeated twice. Usually the bees will not swarm a second time, if all the cells are destroyed.

No, there is no plan to prevent after-swarming except by removing all the queen cells or all but one of them. If all the cells are destroyed a queen should be introduced. If this is not done, other cells would be built, and when matured, a swarm would issue. In this case the old colony would be about ruined, as a queen reared by so few bees and on such a forced plan, would be very inferior.

Kit Clover did wrong in cutting out *all* the queen cells, but it was the right thing to do in removing all but one after the swarm came off. Your bees commenced to build other cells as soon as they discovered the fact that all the capped cells had been removed. That is why the swarm issued twelve days later. The best plan is to remove the cells and introduce a fertile queen the third day after the first swarm issues.

Kit Clover inquires of Mr. Pratt as to the Carniolans being more apt to swarm than other races of bees. Bro. Pratt is quite able to answer this, but this time we will do so. Yes, the Carniolan bees are given more to swarming than other races. When our American queen breeders have had these bees a few years this little fault with the Carniolan will be eradicated. Kit Clover's report of her success with bees is first-rate. You have done well. Women seem to make successful beekeepers.

Use the drone-and-queen trap and your trouble and annoyance, so far as swarming is concerned, will be at an end.

Wiring brood-frames.

Brother Newman is just right in saying it is folly to wire frames 10×14. It is folly as well as loss of time and money to wire any frames. We

can show in the Bay State apiary the handsomest brood-combs to be found in the world. The foundation came from the Dadants, every comb is as straight and as smooth as a piece of board.

Wired brood-frames and narrow top-bars have caused me to say a good many swear words the last ten years. Both of these things are nuisances in the apiary. Bee veils, wood foundation, narrow top-bar brood-frames and rubber gloves are the meanest kind of nuisances in the apiary, and wholly unnecessary at all times.

Carniolan bees.

The Carniolan bees are getting some hard kicks in the various bee papers. Those who are rearing this race of queens have our sympathy, as we well remember some thirty years back how the Italians were treated. Just substitute the word *Italian* for Carniolan in those fellows' articles who are now saying such hard things about the Carniolan bees and you will then get some idea as to what was said about the best race of bees now in the world.

It does sound so natural to us when reading one of the articles in the bee-papers concerning the Carniolan bees that we almost feel thirty years younger. Well, the Italians outlived the croakers and no doubt the Carniolans will do the same.

When the Italians are properly reared and bred, they are as good as bees can be expected to be. The same may be said of the Carniolan bees. The first imported queens were not as good as they should have been. Queen dealers here had to rear queens from inferior mothers at the start. The consequence has been that the Carniolans proved to be great swarmers, and poor honey gatherers. Now, in the hands of the skilful queen breeder there has been a great improvement in this new race of bees.

We cannot say that the Carniolan bees are as good as the Italians, yet will say that they are pretty nearly as good in most respects. However, the Italians will stay in the Bay State apiary a long time yet; we do not propose to throw them over yet awhile.

There is one peculiar thing about crossing these two races. Last year we mated some Carniolan queens to Italian drones. Result was beautiful Italian bees. We then mated some Italian drones and Carniolan queens. Result was the same. Who can explain this?

Imported Italian queens.

We stated in our last issue that we had received two imported queens by mail from Italy. Both queens were successfully introduced and the hives are now well filled with bees. Those unacquainted with imported bees suppose that queens received directly from Italy must produce the finest three-banded, worker bees. This is not so. The progeny from these queens, though they have a yellowish cast, have but two narrow bands. Should I send queens to my customers that produced no better bees, letters would come in by the hat full "the queen you sent me is a hybrid." All queens, and pure Italian queens too, do not produce three-banded workers, nevertheless they are pure Italians.

We shall soon rear a few queens from the imported mothers. The young queens will be quite dark colored, yet they will produce handsome bees where fertilized by drones reared from our $100 queen. One thing is certain, there will be no in-bred bees when thus crossed.

Will those who desire these queens please order early, so that we may be prepared to fill all orders as soon as possible. The imported mothers are very prolific and we have no doubt that the daughters, when fertilized by the drones to which we propose to mate them will produce bees for business and profit.

We did not attempt to rear any queens from these mothers till they had been in the hives sufficiently long

to test their egg-laying powers, color and purity of the bees.

Introducing cells or virgin queens at the time a fertile queen is removed.

Mr. G. M. Doolittle gets a sly dig at us on the matter of introducing queen cells or virgin queens at the time a fertile queen is removed.

Read what Mr. D. says:

A correspondent writes to me thus: "Lately I have seen it stated that bees never destroy queen-cells until after some queen has stung the embryo queens, after which the workers will remove the dead queens and tear down the cells; also, that should a young queen emerge from a queen cell placed in a colony having a fertile queen, she would not be molested until the reigning queen happened to meet her, when the former would be dispatched. Do you find this to be the case?"

In reply I will state that I have not found such to be the case; and, further, I stand ready to give the party who claims such to be a fact, $100 if he or she will come into my apiary and demonstrate it, for I would willingly pay that price to know how to introduce a ripe queen-cell or a just-hatched virgin queen to any colony I so desired at the same time I took away a laying queen. Even as good a bee-keeper as Mrs. Harrison cannot do it, if we are to judge from what she writes, when she says:

'In my early days of beekeeping, I used to read that when forming a nucleus by taking two combs of bees and brood and placing them in an empty hive where I wished the nucleus to stand, I should give them a sealed cell at once. After trying it very many times, they have been invariably destroyed, the bees building queen-cells to suit themselves from the eggs and larvæ which they had.'

To say that Mrs. Harrison has jumped at these conclusions, or has not had much experience, is belittling one of our best apiarists—one who stands as high in the ranks of beekeepers, as a careful, thorough, persistent, experimenter as any in fraternity. No, this will not do. Bees will destroy queen-cells where no queen is present in the hive to sting the inmates of the cells, as I have learned to my sorrow. I do not say that they will sting the embryo queen, for I have no evidence to that effect: but I have often opened hives in which I placed queen-cells a few hours before, to find the bees biting away at the cells, and dragging out the struggling inmate, if such inmate was far enough advanced to be about ready to hatch.

I will not claim that bees will not kill a virgin queen of any age if introduced at the time a fertile queen is removed. We are continually removing queens to ship to customers and introducing queen-cells at the time; that is, in the course of an hour after the laying queen is removed. Have often opened a hive in a few hours after a fertile queen has been removed and a cell inserted and found a newly hatched queen running over the combs. I never hesitate a moment to insert a cell at the time a queen is removed.

Now, Mr. D., let me tell you how you can save nearly all that hundred dollars you offer. Just send some friend here and let him spend one week investigating the matter and let him report result to you. If we do not do all we claim in ninety cases out of a hundred we will pay the $100 to you.

We claim that some things can be done and are done in the Bay State Apiary that cannot be done successfully in many other apiaries. We can introduce a hundred virgin queens to nuclei with tobacco smoke and not lose one out of the lot. We will introduce them just as fast as we can handle the queens. Perhaps it will require two minutes to introduce each queen. Now, I do not wish to brag, and do not, but Mr. D. cannot do this thing, and we do not believe there is another man in the world who can. Now, Mr. D. can do some things we cannot. For instance! He can rear queens by transferring larva or royal jelly from one cell to another. We cannot; that is, don't suppose we can, never tried it; never shall try it. Don't believe in the plan, though it is very scientific, but most too far from nature's way. We had rather do less work and get better queens. We know how to get queen-cells by the million; but cannot get a big lot of first-class queens from cells when reared by the million. Our aim is to see how good queens can be reared, not how many per colony. Our columns in each is-

sue contain ample evidence as to whether our method for rearing queens is a good one or otherwise.

Mr. D. may have testimonials by the million for all we know, commending his methods and views, yet though we have watched the bee-papers pretty closely, none to our knowledge have ever got into print. We have no doubt, however, that Mr. D. rears good queens, perhaps better than ours. Although Mr. D. is not slow in tooting his horn about the only "scientific and natural method" for rearing queens, he has been slow and very backward about the testimonials, which he should have, and which people demand of any dealer commending his goods. A dealer who cannot show proper evidence that his goods are all he claims for them should be driven out of the business.

Fifty-cent queens.

About every mail brings us letters asking us what we will furnish fifty or a hundred queens for. In no case have we stated a price less than the one found in our regular price-list. We have no fifty-cent queens, cannot rear first-class queens at those figures. When you want such low-priced queens please apply at the next shop. Good queens cannot be reared at such low figures. When we can fill our orders at our regular prices, and have a surplus of queens, then a proposition to sell at a less price will be in order.

Though we have been rearing and shipping queens thirty years, there never has been a time when we had a surplus of queens in our apiary.

We are ready to sell each subscriber to the API one queen for 75 cents, and that is the lowest we can sell queens to anyone. Every queen sent out from our apiary is worth $5. We venture to say that hundreds of queens go out from our apiary every year that cannot be bought for even more than $5 each. Let me tell you about one of them.

Newburgh, Indiana, July 14, 1890.

MR. H. ALLEY: Herewith find 75 cents, for another queen; the one you sent me last year is a splendid queen. Have taken thus far this season 112 pounds of honey from her colony and expect to get 28 pounds more if the weather does not continue too dry. DR. GEO. LACKE.

There, friends, isn't such a queen as that worth $5? Who says no?

If such a testimonial as the above does not suit you, please read the one from Mrs. M. G. Barker on page 122.

Our orders.

We want to say to our friends that there has been considerable unavoidable delay in filling some orders we have received. However, we have done the best we could, and each customer will get what he has ordered as promptly as possible. One man whose poor handwriting we could not make out ordered two queens, also, one drone-trap. These things were sent and we supposed we had addressed them correctly, after a while our friend wrote brother Root that he sent Alley so much money and could get no word nor goods from him. We investigated the matter and found the trap had been sent, and although the order was for but two queens we had mailed three to the supposed address of this man. Later on, postmasters in several towns in Ohio notified us that there were packages there for which they could find no owner; and then the cards and letters we had written this fellow came back. Now this customer thinks we must and should send these things again. It is not our fault that he did not get his goods.

When ordering supplies, please write the address so that we can make it out at a glance. We sometimes have to call upon the neighbors to aid us in making out a badly written address.

A few days ago a registered letter came to hand said to contain 75 cts. The letter was unsealed (but it was not noticed till we arrived home) and contained no money. No one in my opinion had meddled with the letter.

The remitter had forgotten to enclose the money.

We so informed him of the circumstances. All we got in return was the card which we had to write our name upon when the letter was received.

When we place our name on the card we do not certify that we receive any money, we merely say that we have received a registered letter from such a party. A postmaster who knows his business will not permit anyone to open a registered letter until the receiver has receipted for it. The postmaster or person addressed is not supposed to know whether the letter contains money or important matter.

Some one gets a hard hit.

New York, July 22, 1890.

HENRY ALLEY ESQ.,
Wenham, Mass.

Dear Sir: The queen came this A. M. much sooner than I had hoped for. Please accept thanks.

I think that I'll try a select tested queen later in the season.

I asked a certain beekeeper and dealer in supplies what he wanted for a first-class queen, as good as he had, and he said that his price was $3, but he would let me have one for $2.

After ordering the queen, I sent him word that if more money would get a better queen, to let me have the *best*. He then sent me a two years old queen for $2, "as good as he had." The result is that she isn't filling seven frames.

Moral—I ought to have read "Thirty Years among the Bees" more carefully, and I should not have invested in a two year old queen, even if she did store ninety pounds comb honey last fall. And if the dealer, who is a very square man, had also been familiar with the same book he would not have risked his reputation by sending her.

Very truly yours,
HENRY HALL.

Chini Josephine, or Josephine Chini, which?

A correspondent says, Josephine chini is a lady. I think he must mean that Josephine Chini is a woman. She can't be much of a man anyway, to use a fellow in the way we were used by our own dealings with that person.

Query Department.

Black ants in hives.

Melrose, Mass., June 6, 1890.

Mr. HENRY ALLEY: I opened my beehive this morning and found thousands of large black ants inside evidently eating honey as fast as brought in by the bees.

I immediately put fine salt around and inside the hive. In an hour opened the hive again and should judge by the action of the ants that they thought it was put in for their benefit.

What is best to do to exterminate them? A reply in the APICULTURIST will much oblige a subscriber.

Sprinkle kerosene oil, or red pepper in the places where the ants are located. We do not think ants trouble the honey. They get in the hive for warmth and protection from the weather. —ED.

E. MYRICK.

Extract from a private letter.

FRIEND ALLEY: I have been very busy lately. Do not even get much time to read the bee-papers. Besides, a damper is put upon us occasionally by, for instance, an important (?) invention such as the Heddon hive, which is taken up by almost every bee-paper in the world and lauded in such a manner that grave doubts arise in our minds whether or not there is an editor anywhere who has even a faint idea of bees and beekeeping. Again when I read Heddon's speech at the Chicago convention my compassion was aroused. I thought of Langstroth, Quinby, Dzierzon and a dozen others. Poor fellows! what did they do to compare with my invention? I thought also of us poor fellows! who are going to steal those great inventions. I can comprehend our small souls and get sick of argument on bee culture.

Had some friend carefully read the API he would have found that its editor never took any stock in the Heddon hive. I once told Mr. H. that had anyone but himself invented that

famous hive not a man in the world could be found who would say more against it.

I know it is a pity to dig this hive question up after it has been buried so long and so deep; yet we rather desire to make public the opinion and sentiment of one of the most prominent beekeepers in the west. This letter has been on our desk sometime, and had it not been mislaid would have appeared before.—Ed.

Size of standard brood frame.

M. A. Kelley, on page 65 of the April No. of the Api asks, Will Mr. Bunch give us the exact size of a standard brood frame? What is a standard frame anyway? I think I can answer this question. Turn to page 147 of revised Langstroth, in regard to what they have to say of the Simplicity brood frame. This style of frame has been manufactured and sold by the most prominent dealers to such an extent that it may be called the standard frame of America. The size of this frame is $9\frac{1}{8}$ by $17\frac{5}{8}$.

C. A. Bunch.

Nye, Ind.

From some of our exchanges.

(Tiny travellers.)

Ten little travelers, useful and welcome immigrants to the Centennial State, made a short stop at the The Eye office this week. They traveled by mail in a neat little box, addressed to Mark W. Moe, who resides out by Smith's Lake in South Denver. The box was postmarked "Salem, Mass.," and came from the celebrated Bay State Apiary. Within it was a queen bee, of the select strain of Italian bees, with nine healthy and active workers. They were bountifully provisioned with a good supply of honey and sugar, and openings in the box afforded good ventilation. Apparently they were none the worse for their long journey.

Mr. Moe has forty hives of bees, all doing well, and he informs us that the present season promises to be a prosperous one for beekeepers.—*South Denver Eye, June* 21, 1890.

Mr. S. M. Rankin, the apiarist, has just received an Italian queen bee from the "one-hundred-dollar queen" of Mr. Henry Alley of Wenham, Mass., the champion queen rearer of this country. *Middletown (Del.) Transcript, June* 26, 1890.

The honey crop.

It is as yet most too early to give an estimate of what the honey crop of the country is likely to be. That it will be above the average is more than probable. The favorable weather in most sections has had much to do with the crop.

New England farmers have been favored with an unusually large crop of hay, nearly all harvested without a drop of rain on it.

The Beekeeper's Directory.

A new book is on our desk. It is entitled "The National Beekeepers' Directory," and contains a classified list of 2,000 beekeepers of the United States and Canada (including about 200 supply dealers), with essays and hints regarding the successful management of the apiary. It is "compiled by Henry Alley, Wenham, Mass." It contains 140 pages, one-half of which are devoted to names and addresses of beekeepers, and the other half to the practical hints mentioned above, including Mr. Alley's "method for rearing queens in full colonies, while a fertile queen has possession of the combs." Price by mail, $1.00 bound in cloth.—*American Bee Journal.*

PRICES OF SUPPLIES

—AT THE—

BAY STATE APIARY,

WENHAM, MASS.

Bee-Hives.

We offer only the Bay State hive for sale.

One hive in the flat,..... ..$ 3.00
Six hives " " " 15.00
Twelve " " " " 27.00

All parts of the Hive are included in the above, frames, sections and all but paint and nails.

Sections.

One-piece sections per	1,000	$4.50
" " " "	500	2.50
" " "	100	.60

Langstroth Frames.

Material for (hanging) frames for Standard L. Hive per 100.....$3.00

The frames we use are so constructed that the bees will not build comb between or over them at the top, nor fasten the section case and frames together, as is the case when the common top bar is used.

Nailing Block for Frames.

No one can do good work at nailing frames without a proper board to nail them on. We can send one, by express, that will do the work nicely price,..... .50

Comb Foundation.

We can supply the best brands at manufacturers' prices, and ship direct to our customers from the nearest factory. We also keep a quantity in stock to fill small orders.

1 to 10 lbs., for brood frames.....55 cts. per lb.
1 " " " " sections.....60 " " "

We keep in stock but one dimension of brood-foundation 17¼ x 7 inches. This is large enough for any L. frame and is just right for the Bay State frame.

Perforated Zinc.

This we can supply in any quantities, shipped with other goods, per foot.....12 cts.

If sent by mail, add 10 cents per foot for postage.

Honey Extractors.

THE E. T. LEWIS & CO. EXTRACTOR,

No. 22. 28 inches in diameter, 25 inches high, 2-frame for any size up to 12½ x 19; room for 25 lbs., honey below reel, and the best extractor ever made for. $10.00

We sell this size only as it is the most convenient to use of any found in use. This extractor is adapted to any frame in use.

Honey Knives.

Root's knife, by express,..... .70
" " by mail,..... .75

Bee Veils.

The veil has a rubber band which draws the top together; it is then placed over any hat and drawn until the elastic is over the hat band.

Common net, by mail,..... .35

Smokers.

Bingham & Hetherington's only.

By mail, $1.75; by express,.....$1.50

Queens and Full Colonies.

Queens.

Prices.

Untested queens, each,.....$1.00
Selected " " 1.25
Tested " " 2.00
Extra breeding queens, the best we have, each,..... 3.00

Our untested queens are sent out before any of their brood hatches. 95 per cent will prove to be purely mated. Safe arrival and purity guaranteed in all cases.

Carniolan queens and bees at the above prices. Our strain of this new race of bees cannot be excelled.

Full Colonies.

We consider eight frames well filled with brood and covered with bees a full colony. Prices of such in B. S. hive, including one set of sections, $12.00. Purchasers to pay express charges. Safe arrival guaranteed.

Fourth Edition of the

Beekeepers' Handy Book, or Thirty Years among the bees. 75 pages, with illustrations, by mail.....50

Queen-rearing Apparatus.

Beekeepers who rear queens, whether by the Alley method or by any other, should have the apparatus here described. The SWARM-BOX and QUEEN-NURSERY are articles that no person who rears queens ought to dispense with.

By using the swarm-box a large colony of bees can be confined a long time or transported safely hundreds of miles. It is a very useful article about the apiary at all times during the season.

Sent only by express, price, $1.25.

When a colony swarms and it is desirable to preserve the queen-cells, and no nuclei are at hand, the Queen-nursery in such cases will be found invaluable; the cells can be placed in them and they need no further care for a week or more. Virgin or fertile queens can be kept in the nursery for several weeks. We have sold a large number of queen-nurseries in years past.

The following articles are also used in rearing queens, a full description of which can be found in our work upon queen-rearing.

	Express.	Mail.
Queen-nursery (of 21 cages).....	$1.25	$1.60
Swarm-box.....	1.25	
Fertilizing-hive (complete)	.50	
Fumigator for using tobacco.....	.25	.30
Cone-feeder.....	.15	.20

To make the lot complete, we put in each package one drone-and-queen-trap, one copy of THIRTY YEARS AMONG THE BEES, and send all by express for..... $4.50

All these articles can be packed in the swarm-box and sent safely by express or freight.

Brooms for Brushing Bees from Combs.

We find a small "corn-broom" best for this purpose as it does not injure or irritate the bees, and will do the work better and quicker than anything else used for the purpose.

1 broom, by mail .... .25
1 " by express..... .20

HOW TO REMIT MONEY.

Remit by registered letters, cashier's check or express orders. If sent by money orders or postal notes, have them made payable at the Salem, Mass., P. O. Make all remittances payable to the order of the AMERICAN APICULTURIST.

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THE * AMERICAN * APICULTURIST.

A JOURNAL FOR THE NOVICE AND EXPERT IN BEEKEEPING.

PUBLISHED MONTHLY. SUBSCRIPTION PRICE, 75 CTS. PER ANNUM.

HENRY ALLEY, - - - EDITOR.

VOL. VIII. WENHAM, MASS., OCTOBER 1, 1890. NO. 10.

Entered at Post-office as second-class matter.

The Editor's Department.

How does this strike you?

We still have a few copies of the Beekeepers' Directory (bound in paper) which we shall dispose of as follows:

To those who renew their subscription to the API at once, and to all new subscribers, we shall send the JOURNAL, also THIRTY YEARS AMONG THE BEES and the DIRECTORY for the sum of $1.25. Now is the time to get the largest amount of bee literature for the smallest sum.

A splendid offer.

We have just received from the factory five hundred drone-and-queen traps. If any one is disposed to purchase them at this time we shall sell half dozen in flat, one made, seven traps in all, and give the purchaser an individual right to manufacture the traps for his own use for the small sum of $3.00. If you wish one dozen traps (13) and individual right, we will ship them for $4.00. Those who purchase fifty traps for $10.00 will get an individual right to make 100,000 or an unlimited number of traps for their own use.

Now let me tell you something all of you, or many of you do not know about, at least nine out of every ten persons do not. Do you know that you can sell any or all the traps you purchase of us in any place in the United States where the territory is not sold? You can come into our town and sell these traps if they were purchased of us in the first place.

Now if we sell you one dozen traps (13) you can sell every one of them for 50 cents each. This will be $6.50. You then have the right to make all you can use in your own apiary.

Those who have an individual right to make the traps, can obtain the material for them from their nearest dealer. A person who owns a right to use and manufacture a patented article has the right to get his goods manufactured just where he selects. So you see it will pay you to purchase an individual right in any case, as by so doing you can more than save the price of it in express charges on one dozen traps.

We want agents in every part of the country, and know of no better way to establish them than the above plan.

There is nothing in the way of bee supplies that sells so readily as the drone-and-queen traps. To any one who will purchase one hundred traps for $20 we will present a township right.

Now is your time to get the traps at a low figure.

Notes and comments.

By Henry Alley.

Something about the Bay State Apiary and what has been done there this year.

By the time this number of the Api has been mailed the queen-rearing business at our apiary for the season of 1890 will be nearly over. We can say that on the whole, we have had a successful year. Some over twelve hundred queens have been reared and shipped, and up to Sept. 20 less than one dozen have proved to be otherwise than satisfactory to our customers. This is a record of which we feel proud.

Our one-hundred dollar queen from which so many queens were reared the past season has at this date (Sept. 20) control of one of the largest and finest colonies of bees to be found in any apiary in the world. Though we have taken from her colony since May 8, 1890, not far from 100,000 eggs, there is at the present time no less than seven L. frames well filled with brood, and certainly not less than 50,000 bees "on the wing."

We expect this queen to do as well in 1891 as she did in 1890.

Orders for queens reared from her eggs continue to come in at the rate of one hundred per week. Of course we cannot fill all orders that will be sent us, though we hope to fill most of them.

Some of our friends think we have done a good deal of bragging about this queen. Not at all. Don't you know that all advertisements have an air of bragging about them? How can a business man sell his goods if he does not advertise and show them up in the best light possible?

Our yellow Carniolans.

Now permit us to do a little more bragging about this new strain of bees. You have all heard considerable about the "coming bee." Well, if the yellow Carniolan bees do not fill the bill as the coming bee, then it will be a waste of time and money to even try to produce the coming bee, or a strain of bees that will be better than those we now have. For years we have experimented in crossing the new races of bees for the purpose of improving, if possible, the races and strains of bees we all have had in our apiaries so long. Nearly all progressive beekeepers know well that the Italian and Carniolan races are superior in all respects to the brown, or black German bee. Such is the fact, nevertheless, though some people have not found them so.

Does any sensible man dare say that if we continue to propagate from the *best* strains year after year that no improvement in our bees will be the result?

Now suppose there is in the apiary a colony of bees that is doing a good deal better than any other, or much better perhaps than most of the others. This one colony and its history we will make a record of. By and by we find colonies that are working hard, storing honey may be, while other colonies that have an equal chance are doing nothing. Now suppose we use the queen in that best colony to rear other queens from, and for drones select a queen from one of the *best* working colonies. Are we not likely to get all the good qualities of these bees transmitted to their progeny? At any rate, this is the principle that is being carried out at the Bay State queen-rearing apiaries. Now suppose we go on year after year rearing queens in the helter-skelter way that is being done in some of the apiaries of this country, what will be the result? I need not say, purchase the fifty-cent queens from the cheap queen dealers and you will soon get all you want of inbred bees and queens.

Our beautiful yellow Carniolan bees and queens are not the result of breeding in, but the result of very careful breeding and selection.

We expect to send out in the season of 1891 about two thousand of the finest yellow Carniolan queens that can be reared.

Out of all the queens of this strain

we have reared this year, two have been selected for breeding queens for the season of 1891. One will be used to rear queens from; the other for drones. On Sept. 6 we had a batch of twenty-five queens hatched from our best golden Carniolan queen. Friend Pratt was on a visit to our apiary about that time. We won't repeat his remarks when shown these queens. They were all large and as yellow as gold. We shall let Mr. P. have one or more of these queens. You will hear from him in 1891. We have an idea that *all* queen breeders will be anxious to get one or more fine breeding queens of this new strain. We can tell you now that these queens will be sold to no one until they first agree over their own signature that they will rear no queens for sale from them before the year 1894. We once bought an Italian queen of S. B. Parsons of Flushing, L. I., on condition that we should not sell any queens from her for three years. That was a good many years ago, yet we have not forgotten the fact.

There may be other strains of yellow Carniolan bees besides our own for aught I know.

This particular strain of which we have spoken was produced in the Bay State Apiary, and I would like to reap a fairly good income from them before the fifty-cent dealers get hold of them.

A perfect queen-bee.

It has often been said that no yellow queen would duplicate herself every time in queen progeny. Well, this is usually the case with the Italians, but it not so with our best yellow Carniolan queen. I have no doubt that every queen we shall send out next season will produce *all* yellow or golden colored queens and bees. At any rate, I shall establish a yellow Carniolan queen-rearing apiary two miles distant from all other bees, and as the drones of this strain are nearly as yellow as the queens there can be no trouble about getting handsome queens and bees.

The working qualities of the yellow Carniolans.

"What sort of honey gatherers are the yellow Carniolan bees?" methinks I hear some one say. "A 1 friends." Call at the Bay State Apiary some pleasant day and see them work. There are no better workers. In disposition they are perfect. I can sit beside the hive an hour at a time and not a bee will molest me. This cannot be done with all races of bees.

Well, to make a long story short, we will say that the "coming bee" has come and we shall prove it to you in the year 1891, *as we have the bees.*

Prices of these queens will be 50% higher than Italians.

The Api and one selected yellow Carniolan queen will be sent for *two dollars.* Remit the seveny-five cents for the Api, and when the queen is needed the balance ($1.25) may be sent. One selected Italian queen and the Api for one year, $1.50.

Feeding bees.

Sept. 15 feeding in our apiary was begun. The feeder used was a one-quart improved Mason fruit jar. Six quarts of syrup was given each colony. This will last the bees till about April 1, when feeding to stimulate breeding will be commenced.

Should any one need these feeders we can send them all prepared for use for *two dollars* per dozen. They must go by express. These jars may be used for preserving fruit after the bees are fed. They are made of glass (not tin) and will last with care a life-time.

Introducing queen.

I will tell you how I have introduced a good many queens without the loss of even one queen. We are now shipping all our queens in Pratt's mailing cage. These same cages are used for introducing queens. We merely place the queen in the cage, and then insert

the cage at the bottom corner of a brood frame. Of course a small piece of comb must be cut out to make room for the cage. If the colony the new queen is to be introduced to has a queen, she is removed and the cage containing the new queen is at once inserted. The hive (not entrance) is then closed and a small amount of to-tobacco smoke is blown in among the bees and combs. This will odorize the entire interior of the hive—bees, queens and all.

There is more than one advantage in this method of introducing queens. When queens are so introduced the colony never misses their queen; at any rate, they never show the loss of a queen by any of the usual indications. Another advantage is that all the work is done at one time, and the hive is probably not without a queen on the combs over ten hours. The cage is so arranged that the bees eat out the food and release the queen in a few hours.

Although I fumigate the bees with tobacco smoke, I am not certain that the fumes of rotten-wood would not do as well. All that the fumigating is done for is to give the bees and combs the same odor. Bees, you know, recognize each other more by scent than in any other way. A robber bee, of course, is not known by any peculiar odor about its person. The bees easily recognize a thieving bee by the way it approaches the hive. While the bees that have a right to enter a hive at once pass in, the robber bee tries to sneak in.

Unfavorable weather for bees.

The prospect for a good crop of honey from golden rod was never better than it was the present year; but the weather was such from Sept. 8 to Sept. 19, that not one pound of honey was gathered. After about ten days of continued rainy weather the sun came out in all his glory, and the bees commenced to work again, and to-day, Sept. 19, is one of the finest days we have had this year. Bees are gathering honey; queens are out on the mating trip, and all is going well in the Bay State Apiary. We have several hundred queens about ready to mail; about seventy-five will go to customers on the 20 inst., and the balance of our orders will be filled in about three days more.

A good reason why one should swear.

Brother A. I. Root is inclined to lecture those who make use of profanity. I am thinking if he had been here through the long rainy spell and had had three hundred queens ready to mate, and at the same time orders coming in by the hatful for them, he might have said some words not fit to publish here. We felt a good deal like swearing as the rain poured down day after day. But never mind, we don't feel that way now. The bright sunshine has driven the "blues" into the shade.

During those rainy days several letters came to hand urging us to hurry up and ship "my queens." Bless your good nature, friends, we have hurried up and have been hurrying up the past thirty years and doing all we could do to fill your orders promptly. All we want to do is to get your orders filled and off our hands, and if we live to see Sept. 22, not an order for a queen will remain unfilled of those that are received prior to Sept. 15.

Please bear in mind when ordering queens that we do not control the weather. Bad weather is the only drawback to the prompt shipment of queens.

Rearing queens from eggs.

I hope most of you read Dr. Tinker's excellent article as published in the Sept. Api. We are strongly convinced that the best methods for rearing queens or, we should say, starting queen cells from the egg is the best and most practical thing for queen breeders to do. In future we shall give the eggs to queenless bees twen-

ty-four hours before they should hatch. This we practised the last two months of this season. Now if Mr. Doolittle will manage to transfer an egg instead of a larva he will hit the nail squarely on the head. Why not try it Brother D.? We do not practise the Doolittle method of rearing queens, but what a wonderful improvement there would be in the Doolittle methods and also in queens reared by those methods, if Mr. D. and his followers will practise our suggestions. Mr. D. has given us a fine book on queen-rearing, yet his methods are as far from perfection as those given by many other queen breeders.

An old customer.

Our old friend, J. Hulman, of Terre Haute, Indiana, ordered some queens to-day and says, "I have bought queens of you for 20 years." He is correct, I think we have sent Friend H. more or less queens each year for twenty-five years. I hope we shall continue to do business together for twenty-five years more. I shall need that number of more years in order to get rich at the queen-rearing business. It is pretty hard work, and very small pay and sooner or later those fellows who are advertising queens for sale at such low prices will find that they cannot be reared at a profit for so small a sum.

I saw the advertisement in a bee-paper of a man who is offering tested queens at $1.00 each. That man does not know a pure queen from a hybrid; yet some one will be so foolish as to send him a dollar for one of his tested (?) queens.

Italians vs. Carniolan bees.

Mr. S. A. Shuck has an article in the *American Bee Journal* giving his experience with the Carniolan bees in which I was much interested. Mr. Shuck hits one J. C. Robinson some pretty hard raps. The article is well written and will prove quite interesting to those who have the Carniolan bees. We are so well pleased with the good advice Mr. Shuck gave the readers of the A. B. J. concerning the Italian bees, that we quote his words below.

> I wish to say to the inexperienced bee-keeper, that if he has bees that he knows will gather honey when there is honey to be gathered, the best thing he can do is to take good care of his bees. If he wants bees that are gentle — bees that he may know *are pure*, both by their appearance and actions — just send to any reliable breeder of Italian bees for a few tested queens; and, take my word for it, you will not be disappointed.

I wonder if Mr. S. had the fifty-cent queen dealers in his mind when he penned the above.

While I am on the subject of Carniolan bees, I may as well say something more about them. I have found them very good honey gatherers and quite gentle. These are their best points.

One word about the purity of these bees. I had one queen in 1889 whose worker progeny in color were all a "steel blue." A great many of her daughters were of a muddy-white color. I selected some of the finest and lightest queens for breeding queens. But when the brood hatched from these queens about half of the workers were yellow-banded; in fact it was very much so with the worker bees from the darkest queens. As the drones were reared from the same queen that the daughter came from, I supposed that some of the latter would give purely marked Carniolan bees. The worker bees were all yellow-banded. Out of one hundred queens reared, not one gave purely marked bees equal to those of the mother, though all the queens were fertilized two miles from all other bees, and at the time there were thousands of Carniolan drones in the same yard with the queens. Now please don't waste your time in trying to prove that all the young Carniolan queens were mated to Italian drones. I know that not even one of them was mismated.

In my opinion the Carniolan bees are the outcome of some yellow race and from which the Italian bees originated. Perhaps Mr. Benton might give us some valuable information on this point. I had an order in the season of 1889 for a few Italian queens mated to Carniolan drones. When the bees hatched from the queens so mated they were *all* yellow-banded. Why was this? Why were there not some of the "steel blue" worker bees in the lot? When a drone from a black colony has mated an Italian queen, about half the worker bees will be solid black and all the young queens will be very black. It is a fact which I have found in my experience, that if pure Carniolan bees are left to themselves a few years they will nearly all be yellow bees, while if the purest Italians are left to breed and mate as they naturally will, say four years or more, they will degenerate to solid black bees. There would, no doubt, be a few bees in the colonies with a very narrow yellow band, but a large majority of the bees would be black.

Will some of our readers who have given this subject study and serious thought give the readers of the API their ideas on this point?

You will see by what I have said what an easy matter it was for me to originate the race of yellow Carniolan bees. Some one will say "he bred in to do it." No, I did not; we found a more practical way than that to reach the desired point.

Age of the different sexes of bees.

The honey bee is a short-lived insect in any event. In the honey-gathering season a worker soon wears itself out, say in about six weeks. Yet the bees born in the months of August and September will live well into the month of the following May. The drone bee is abused and ill-treated nearly all his days. As soon as his services are not wanted he is unceremoniously pitched out the hive. Pitched out the hive is the word to use as they are pitched out and no mistake about it. The drone's life is a little over two months when permitted to live it out, yet very few of them ever reach sixty days of age.

Mr. Doolittle tells the readers of the *Am. Bee Journal* that drones will live over the winter. He says:

"Many seem to think that drones never live over the winter, which is the rule though not always the case, for at two different times my hives have been so well supplied with honey during the fall and winter, that the bees did not seem to realize any need of retrenching, so kept their drones, which were flying every fine day during the fall and winter, the excess of honey causing the bees to allow them to live as long as life held out. It was really amusing to hear their merry hum from many hives on warm days during February and March. As the pleasant days of April came on, they gradually grew less and less, until all were gone about the middle of that month."

Mr. Doolittle is certainly mistaken in this matter. I have found it impossible to preserve drones alive even three months. The drones found in Mr. D's hive in the spring were certainly reared late in the winter. I have often found drone-brood, that is, a few cells in some hives early in March, and have had drones flying at the last of March. The simple fact that Mr. D. saw drones flying from his hives in April is not sufficient proof to convince me that those drones were reared the fall previous.

The life of the queen bee varies according to circumstances and conditions. Queens will live from one to three years when kept in such small hives that their productive powers are restricted to about one-half of their egg-producing capacity. I believe the practical thing to do is to introduce young queens as often as every alternate year. Young queens are the ones that produce the most honey and bees. A majority of old queens begin to fail and lose vigor when in the second year.

Another patent swarm-hiver.

Some one who claims a patent on a swarm-hiver describes the same in the

American Bee Journal. It strikes me that any one with half an eye to business can see that this new device will not work successfully. In the first place the queen cannot leave the hive by the regular entrance, as she naturally would and does do when a swarm issues. To prevent her from going into the air with the swarm a piece of excluding metal is placed at the entrance. Well, now, the same thing that will prevent the queen from leaving the hive also prevents the drones from passing out. What is the result? Why, the drones will crowd into the excluder so that the bees can only get out with the greatest difficulty. Now this will not only be the case at swarming time, but in the middle of every warm day when the drones take a flight as they do on each pleasant day at noon time.

The arrangement of the device is given below by the inventor.

"It is a combination of two hives, without the use of any front entrances. Therefore the alighting-board and bee-entrance is at the orifice of vacant hive (No. 2) which is provided with a queen-excluding screen at the time of swarming.

The closing doors are so made as to come entirely off, and allow the two hives to come close together, and it will be seen that the bees must pass entirely through hive No. 2 in order to reach their home. At first I regarded this as objectionable, but I soon found that the delay of the bees in traveling through hive No. 2 was more than made up by the warding off of robbing bees, and the perfect security of hive No. 1 from the spring winds and stormy weather. The colonies with hives so arranged have done fully better than any others in the yard. This is a point wherein experience is better than theory.

At the time of swarming, the queen-excluding screen is to be adjusted, which is quickly manipulated. It will be seen that hive No. 2 becomes the swarm-receiver."

I will bet a small sum that not one swarm in 10.000 that issues will ever be self-hived by that device. The inventor says he has hived several first swarms with the device, but not even one second or third swarm. Yet the fellow says "It needs no argument to show that this device is a success." Pretty good. It needs no argument to prove that the device can never succeed. Any sensible man can see that. The principle of the whole thing is wrong. One need not possess a great amount of ingenuity in order to invent such a device. When we were experimenting with our swarm-hiver, all the things Mr. Lacy claims for this new device were considered. We saw that a self-hiver could not be made practical if the drones that would want to leave the hive every day, and especially at the time the swarm issued, were not taken care of and gotten out of the way.

Our device is not only a self-hiver but is a drone-and-queen catcher as well. It is placed at the entrance of a hive in the spring and need not be removed till fall. Now how would it work if no provision was made to catch the drones that want to take wing each day? Why, the thing would destroy a colony in a short time; probably on the first warm day, as the drones would clog the entrance to the hive and no bees could leave or enter it. This is not so with our swarm-catcher. Place it on the hive and go about your business. It needs no care, and you are not obliged to stay in the apiary ready to clap it on a hive when a swarm attempts to issue.

As we sold thousands of the swarmers to the readers of the Api we will say here that the only trouble with the swarmer was that the queen could not in all cases readily find her way to the empty hive through the end of the swarmer on the home hive. This little difficulty has been remedied, and we expect in 1891 that not one failure to hive a swarm will be reported.

Our swarmer will catch any swarm that issues whether it be a first or third swarm. As soon as we had described our swarmer in the *American Bee Journal*, the man who claims a patent on the one that will not catch only a first swarm, put his wits at work and soon described what he supposed might be an improvement on our

patent. Just what that man claims as a good thing, we rejected as being impractical. Have we not shown that it is thoroughly so?

Packing bees for winter.—Double-wall hives.

We have always contended that the best place to winter bees is on the summer-stands and in double-walled hives.

At a convention of beekeepers held at Haldimand, Ont., the question of of "Preparing Bees for Winter" was discussed. As the experience of several beekeepers who were present has been the same as our own I will quote them here:—

Mr. Kindree said he wintered his bees in doubled-walled hives on the summer stands. He first made sure that each colony had a queen and plenty of food; crowded the bees on as few frames as possible, and put a thick cushion on top of the frames.

Mr. Armstrong winters his bees in double-walled hives and in clamps, with an abundance of packing on top, and all around the hives. He did not like clover-chaff for packing, as it had a tendency to heat and make the bees uneasy.

The thick cushion on top of the frames is a good thing, but the packing between the walls of the two hives is all wrong. When we have so packed the hives the combs near the walls of the brood-chamber would mould badly, while those that had only a cushion over the bees not only wintered the best, but had no mouldy combs.

Now here is another way of *not* wintering bees.

Mr. G. B. Jones advocated taking all the honey from the bees, and then killing them, buying new colonies in the spring. For those who packed their bees he recommended the use of hair-felt. He said it was very necessary to have young bees instead of old ones, as old ones eat more honey than young ones; and gave two plans of getting rid of all old bees, the one he preferred being to cage the queen during the month of August, so that she could not lay, then releasing her, and all the bees reared after that would be young.

There reader, did you ever read or hear of anything so foolish as that? If every body practised that man's method, where would one find bees to purchase in the spring? The idea of caging a queen in the month of August to prevent brood-rearing almost makes me faint. Doesn't that fellow know that the bees reared in August, as well as those reared in September are the bees that live over winter? Why don't those bee cranks keep quiet when they go to bee-conventions and let practical and sensible men do the talking?

We want the bees that are reared in the month of August to gather the golden-rod honey in September and fill our hives with winter stores.

Large vs. small hives.

A good article from the pen of Mr. Doolittle concerning the proper size of hives may be found in a recent issue of the *American Bee Journal*. Once was the time I thought the 10-frame L. hive was the proper size. I am not of that opinion now. I once sold two colonies of bees in L. hives that had been prepared for winter by removing three of the brood-frames, leaving but seven frames well filled with good stores for the bees to winter on. It was my intention to replace the three frames in the spring; but as the bees were twelve miles away the matter escaped my mind. Well, the result was that when I got a report from those two hives of bees I at once made up my mind that there would be no more 10-frame hives used in the Bay State Apiary, and to that decision I have adhered for the past ten years. Although there were a dozen other colonies on 10-frames in the same apiary as the two colonies purchased of me, not one of them did as well as the two colonies on the 8-frames. For several years we have had in use hives having not over eight frames, and several hives with but seven frames. The seven-frame hives do the best, and another season we shall use but seven frames in any of our L. hives, and eight frames in our Bay States hive. The eight

frames used in the Bay State hive are about the same capacity as seven L. frames.

We do not believe in a large hive as the Dadants do, and think Mr. Doolittle is right in advocating the small hive.

Foul brood.

Our friend, F. A. Gemmell, of Canada, has sent us a copy of a pamphlet on foul brood. If this worst and most destructive of all diseases among bees is half as bad and prevalent in Canada as this pamphlet seems to indicate, the Canadian beekeepers must be having a hard time of it.

I would much rather go into my apiary and find all my bees dead than to find one colony infested by foul brood. Over twenty-five years ago we went through a seige with this disease. Fire was the best and cheapest remedy we could apply, and he who employs any other means to eradicate foul brood from his apiary will certainly have diseased colonies on his hands as long as he has a hive of bees. Don't attempt to cure it. You cannot do it. Destroy it. Don't hesitate a moment to destroy the best, or even all the colonies in the apiary if even but one cell of foul brood is found in each hive. I know this is a harsh remedy, but it is the proper thing to do.

I believe in enacting the most stringent laws for the extinction of foul brood. One case of foul brood in the hands of a careless beekeeper would be the means in time of destroying all the apiaries in the country.

Let some inexperienced person open a hive having foul brood on a warm day when the bees are not at work. In a few moments the bees from every colony in the apiary would be trying to rob that hive. The result would be that every colony in the yard would be infected with foul brood in less than six months. Take no stock in the cure of foul brood. No matter who tells you it can be cured. It will cost more to cure it than it will to annihilate it. When you have had any considerable experience with the disease, I feel pretty sure you will come to the same conclusions concerning its cure I have.

Winter feed.

Some apiarists claim that a healthier food for bees to winter upon can be made from granulated sugar than honey, which I very much doubt. It looks like presumption on the part of man to claim superior wisdom to the Creator who fashioned the bee and provided its food. It is true that during very cold winters, when many colonies of bees living upon natural stores died of diarrhœa, those that had only syrup made of granulated sugar remained healthy. Under some conditions it may be the best food, but it does not seem right nor practical to take away their natural food and substitute an artificial one.

The above is from the pen of Mrs. Harrison. I wonder if Mrs. H. was thinking about the "bug juice" bees sometimes store in the combs, when she wrote the above.

When man removes this horrid stuff from the combs and feeds his bees good, clean and wholesome granulated sugar, he certainly makes an improvement upon nature. Has Mrs. H. forgotten the time, long ago passed, when nearly all the bees in this country were destroyed on account of the "bug juice" stored in the combs for winter food?

I do not believe that granulated sugar is superior to good honey to winter bees upon, and I think a beekeeper would be in fine business to remove the good honey from his hive and feed back sugar for winter stores. I do not believe any one has ever done that thing. Most people feed sugar for winter food for the reason that the combs are bare of natural stores. That is why we have been feeding sugar the past ten days. Most of our colonies are now in fine condition for winter. In a few days the brood-chambers will be placed in the winter cases, the cushions put on the frames and that is all we shall do to our bees till spring.

Spacing frames in the brood-chamber.

A good deal is now being said in *Gleanings* about spacing frames. This is an old subject and was discussed in the *American Bee Journal* (then the only bee-paper published) nearly twenty-five years ago. The beekeepers of the present day seem to know but little about it, and a good many beekeepers seem to think that the only bee-paper in the land is *Gleanings*. "Where ignorance is bliss, etc." All right, friends; if you think that Bro. Root publishes all there is about bees and beekeeping, just stick to his teachings. No one man knows it all —that is, all about bees. Now post yourselves up about spacing frames. Fifteen years hence there will be a new set of beekeepers in the field, and they, too, will want to know all about spacing frames. Ernest Root then can refer them to the back numbers of *Gleanings*.

If you really desire to introdnce a nuisance into your apiaries, just use any of the devices for spacing frames now being recommended by those people, who, it seems to me, have had no experience in such things. These same things, now advised and described, were used thirty years ago, and nearly all who used them cursed the day they applied them to their hives.

I need not tell you why they are a nuisance. If any reader desires to test the matter for himself, all I have to say is, go ahead and use them.

Queen-rearing.

In a private letter to the editor of the *American Bee Journal*, Rev. L. Johnson says:

> I have just finished reading Mr. G. M. Doolittle's book on "Scientific Queen-Rearing," and must truly say it far exceeds anything on the subject I have ever read. His discoveries are certainly remarkable, and cannot fail to be of great value to the beekeepers of America. God bless him for what he has done for us in the little in this little book. I thought Mr. Alley had exhausted the subject in his "Bee-Keepers' Handy-Book," but Mr. Doolittle has opened to us a new field of which I never dreamed. I almost held my breath in amazement as I read Chapter XIII.

If our friend Johnson will take the trouble to read Dr. G. L. Tinker's little book, as well as the Dr.'s writings that have appeared in the API, and our "*Thirty Years Among the Bees*," he will find that Mr. Doolittle's method for rearing queens is very much behind the times. There are newer, better and more practical ways for rearing queens than Mr. D. advises or practices.

Gleanings in bee-culture.

Have you seen a late copy of the above publication? Brother Root has put his favorite publication in a new dress and the improvement over the old style of small type is very marked. I believe the paper has also been enlarged. Brother Root publishes so much matter in *Gleanings* that does not relate to bee culture that he found it necessary to add several pages to his paper.

We lately received a splendid book from Bro. Root on "Strawberry Culture." We can recommend this work to all who raise little or much of this most delicious and wholesome fruit. Price of book, by mail, is 50 cents. If you would like a copy we will have it mailed to your address and the API one year for $1.10.

We have a small patch of seedling strawberries in our garden. My son planted a few seed some four years ago from the Sharpless strawberry. From about nine plants two only were selected. These two plants produce very large, nicely-shaped berries. We had several pickings from these vines some two weeks after all others had failed. As the berries ripen so much later than other varieties it is a very desirable plant. By and by we may have a few of these plants for sale.

Bro. Thos. G. Newman's visit to A. I. Root.

The editor of the *American Bee Journal* has been on a visit to the editor of *Gleanings*. We would be glad

to have all the editors of the bee-papers visit the Bay State Apiary. Editors, like lawyers, quarrel sometimes, but they do not despise or hate each other. I hope the day is not far distant when Bro. Newman, at any rate, can get as far as Wenham. We have met him in New York and Philadelphia and would go that distance again to spend a few hours in his company. Bros. Root and Jones we never had the pleasure of meeting. We may meet face to face by and by.

Mr. Ernest Root has been up in York state to see Mr. Doolittle. We hope Bro. D. gave Ernest as cordial a greeting as he did the writer, at the Candee house in Syracuse, N.Y., some ten years ago. We shall never forget our visit to the above city—no, never.

Bees and poultry.

Bro. D. A. Jones publishes a good bee-paper, also a good poultry-paper. The latter is the best paper of the kind that comes to our office, and we get a good many such papers during the year. This mixing of poultry and bees or, in fact, anything else with bees I do not like. Bro. Jones did a good thing when he decided to publish two distinct papers.

Exhibiting bees and honey at fairs.

A few weeks ago Mr. E. L. Pratt requested me to send some sample copies of the Api to W. A. Green, Providence, R. I., to distribute at the Rhode Island state fair. The papers were sent and I also took a notion to run down one day to see how the bee-keepers of that little state did things in the display of bees at their fair. Well, I must say that I was surprised at what I saw before I had passed into the room where the bees and honey were on exhibition. There were bees in one frame (observatory) hives, and full colonies in hives having glass on all four sides, and not only that, the sections were on the hives, and many of them were full of honey and bees. The hives were made for the occasion and all were very handsomely and so nicely arranged that the visitors could see the bees, combs and honey and get a good idea of how bees "make" honey.

One large room was filled, yes crammed full of bees and honey, both in comb and extracted; honey in large frames, honey in small sections and extracted honey in all sorts of fancy glass jars and bottles.

Among the exhibitors who deserve special mention is Dr. G. M. Marchant of Warren, R. I. The Doctor was awarded the first premium for the largest and best display of extracted honey. I understood that Dr. Marchant is only a novice in bee culture. Whether a novice or an old vet., his display was very fine and would do an old beekeeper credit.

Robert Nevins took first premium for best general display of comb honey and apiarian fixtures.

The R. I. Apicultural Experimental Station, Samuel Cushman, apiarist, had a large exhibit of hives, honey and bee furniture generally; in fact, one large room was filled with hives of all patterns except the Bay State. Many of the hives shown there were fit for nothing but chicken coops, or for kindling a fire. Several of the hives were so large that they would probably let readily for tenements to small families. A person intending to start an apiary of 100 colonies in such hives would have to order lumber by the carload. I would not give one of Root's dovetail hives, one of which I saw there, or one of our Bay State hives for all the others on exhibition. Just why the R. I. Apicultural Experimental Station want such a large number of old anti-deluvian packing boxes in their way rather puzzles me.

Mr. W. A. Green, of Providence, had a colony of Carniolan bees on exhibition that he purchased at the Bay State apiary in the spring of 1890. The bees had increased to two colonies and had stored 125 pounds of

honey. The colony is a fine one, and though not strictly pure Carniolan bees, they are quite handsome. The color is rather more of a light gray than steel blue. Mr. Green says the only fault with the Carniolan bees is their propensity to swarm so much.

There was another thing in the bee exhibit that certainly was a novelty. Mr. Cushman had on exhibition a large swarm of bees clustered on a branch of a tree, as in natural swarming. The bees were in a large screen-wire cage, and until late in the day were as quiet as though they had just issued from a hive and had settled there. Of course in order to make a success of this, a queen bee was caged and the cage fastened to the branch, and the bees clustered about it, completely hiding the queen and cage from view. The whole thing was ingeniously arranged and did the exhibitor great credit.

Arthur C. Miller, of Barrington, R. I., had a fine display of bees, honey, hives, etc. Mr. Miller is the inventor of a comb-fastening machine. Should say it is a good and practical implement for the apiary. We also saw a sun wax-extractor, constructed by Mr. Miller. This also struck us as a practical thing.

Alley's drone-and-queen trap was there. We all know this is a good thing. No less than three exhibitors had the traps with their exhibits.

A. M. Cole, East Providence, had a good display of hives, honey and a general assortment of bee fixtures. And last, though not the least, was an exhibit by Brother E. L. Pratt, of Marlboro, Mass. "Our new nucleus system" was represented, as well as a lot of other useful things used in Bro. P.'s apiary. Mrs. Mary E. Ralph, Hope, R. I., captured first prize for beeswax, while A. C. Olney was awarded second prize for comb honey.

The bee-keepers of the state of Rhode Island seem to have done their best to make the exhibition of bees and honey a success. That they were successful one need only visit the fair to be convinced of the fact.

I was glad to meet so many of my beekeeping friends who were present, and the greeting given us was so cordial that we shall not soon forget our visit to the Rhode Island state fair.

If the beekeepers of the country generally would make such an effort to show their honey, bees, etc., as the beekeepers of Rhode Island have, honey would sell more readily and at much better prices. Advertise at the fairs; make people acquainted with bees and honey, and the many household and medicinal uses of this wholesome and delicious sweet.

Apiculturist Mail-box.

Bees did well; nice bees.

Jewett, Ohio.

MR. ALLEY: Please send me another queen. Both the queens you sent me in 1889 have done well and proved fine. They are the nicest bees I have.

DAVID LUCAS.

Worth many times their cost.

Scales Mound, Ill.

BROTHER ALLEY:—Find $1 50 for API and queen. The queens you have sent me the last two years are all O. K. and worth many times their cost. J. W. WILCOX.

He likes our queens.

Oran, N. Y.

MR. ALLEY:—Send me eight queens, four from your imported mother. I like your queens better than those bought of other dealers. WM. H. BALCH.

Four queens paid for all.

Bicknell, Ind.

MR. ALLEY:—I bought eighteen queens of you and lost all but four. But the four queens made up my loss to a great extent, as their bees were all I could desire or expect. H. F. WINTERS.

Handsome bees.

Thorndale, Texas.

MR. ALLEY:—Find $1.50 for which mail me another queen. The bees are hatching from the first one you sent me and they are the handsomest bees I have.

O. J. E. URBAN.

Questions and replies.

Rearing queens.

Otwell, Ind., Sept. 10, 1890.

MR. ALLEY:—The two queens ordered came to hand in good condition and are satisfactory in every respect. I have been trying my hand at rearing queens this season, but not with very great success. I have reared several fine queens, but have trouble to get the cells started; five cells were the most I could get from one lot of bees, and one lot of bees flatly refused to start any cells, so I finally gave them a mature cell which hatched and the queen is pure and proves to be a good one.

I used your system as given in the Handy Book and API, using eggs and also larvæ just hatched in both old and new comb, but it made no difference in the result.

Another thing that puzzles me is that the pure Italians seem no better natured with me than the blacks, and the hybrids of which I have several stocks seem no more irritable than the others. If you can give me some advice, either by letter or in the API by which I may succeed in getting cells started, you will oblige me very much.

J. E. HOSTETTER.

I hardly know how I can say more about queen-rearing and starting queen cells than I have said in my book and in these columns.

When you try queen-rearing again, you better proceed thus: Let the bees that are to start the cells remain queenless from eight o'clock in the morning till six o'clock at night, then give them eggs that are forty-eight hours old, and those that are in as new comb as you have. But never use comb that one batch of young bees have not been reared in. When the bees are about all in the queen-rearing hive, place a caged fertile queen at the entrance, and let her remain there till nine o'clock the next morning.

If you follow these directions I do not see how you can fail to get all the cells you need. I never have the least trouble in getting all the cells started that one good colony should start. Once in a great while, a batch of bees will not start quite as many cells as they ought, but usually there is little or no trouble about it. If the bees you use for queen rearing have been idle for several weeks, you will find that they will be better prepared for cell building and start cells more readily and a larger number, if you feed the colony liberally several days before they are put to work cell building. Try that, my friend, and you will be well pleased with the result.

This question is out of order.

Lynchburg, Pa.

Queens received O. K. Please say if these queens are mated.

Yes, sir, the queens are mated. And here let me say that we do not send out queens till they have been laying a week, at least.

I rather think our friend found the queens were all right in one or two days after they were introduced, as we have heard no complaint to the contrary.

A few days ago, a customer ordered several queens and said he did not want *old* queens such as some dealers send out. Where do you suppose we can get 1200 old queens to mail our patrons, when we keep less than 100 colonies of bees in our apiary? When we have old queens for sale, we get $5 each for them.

One more queer case. "I don't want the wings of the queens you send me clipped." All right, my friend, you cannot get such queens here. Though we have been requested to clip the wings of queens, we have never done so, in any case. We are not one of those fellows who have an idea that clippling queens' wings is practical.

Still another. "I don't want any queens that hatch out the cells before the thirteenth day from the appearance of the larvæ," writes another customer. A good idea, my friend. I think you must have read the API with considerable care. You are a beekeeper that will succeed. You know what you want and just where to apply for it, too. Queens started from eggs will not hatch in less than sixteen days from the time the egg was laid. Some dealers hatch them out in nine and ten days. Those fellows can afford to sell for fifty cents each, or to give such queens away, but no beekeeper can afford to introduce them in his apiary.

The Beekeeper's Directory.

A new book is on our desk. It is entitled "The National Beekeepers' Directory," and contains a classified list of 2,000 beekeepers of the United States and Canada (including about 200 supply dealers), with essays and hints regarding the successful management of the apiary. It is "compiled by Henry Alley, Wenham, Mass." It contains 140 pages, one-half of which are devoted to names and addresses of beekeepers, and the other half to the practical hints mentioned above, including Mr. Alley's "method for rearing queens in full colonies, while a fertile queen has possession of the combs." Price by mail, $1.00 bound in cloth.—*American Bee Journal.*

Bee Conventions.

The next convention of the York and Cumberland Beekeepers' Association will be held at Goodwin's Mills, Me., Oct. 18, 1890. A cordial invitation is extended to all persons interested to be present.

Waterboro', Me., Sept. 20, 1890.

The International American Bee Association will meet in Keokuk, Ia., Oct. 29, 30, 31. Copies of the program and hotel rates can be obtained by addressing the Secretary, C. P. DADANT.

Hamilton, Ill., Sept. 19, 1890.

How to remit.

All remittances to us should be made payable to the order of HENRY ALLEY. Please bear this in mind.

PRICES OF SUPPLIES

—AT THE—

BAY STATE APIARY,

WENHAM, MASS.

Bee-Hives.

We offer only the Bay State hive for sale.

One hive in the flat,..... ..$ 3.00
Six hives " " " 15.00
Twelve " " " " 27.00

All parts of the Hive are included in the above, frames, sections and all but paint and nails.

Sections.

One-piece sections	per 1,000	$4.50
" " "	500	2.50
" " " "	100	.60

Langstroth Frames.

Material for (hanging) frames for Standard L. Hive per 100.....$3.00

The frames we use are so constructed that the bees will not build comb between or over them at the top, nor fasten the section case and frames together, as is the case when the common top bar is used.

Nailing Block for Frames.

No one can do good work at nailing frames without a proper board to nail them on. We can send one, by express, that will do the work nicely price,..... .50

Comb Foundation.

We can supply the best brands at manufacturers' prices, and ship direct to our customers from the nearest factory. We also keep a quantity in stock to fill small orders.

1 to 10 lbs., for brood frames.....55 cts. per lb.
1 " " " " sections.....60 " " "

We keep in stock but one dimension of brood-foundation 17½ x 7 inches. This is large enough for any L. frame and is just right for the Bay State frame.

Perforated Zinc.

This we can supply in any quantities, shipped with other goods, per foot.....12 cts.

If sent by mail, add 10 cents per foot for postage.

Honey Extractors.

THE E. T. LEWIS & CO. EXTRACTOR,

No. 22. 28 inches in diameter, 25 inches high, 2-frame for any size up to 12½ x 19; room for 25 lbs., honey below reel, and the best extractor ever made for. $10.00

We sell this size only as it is the most convenient to use of any found in use. This extractor is adapted to any frame in use.

Honey Knives.

Root's knife, by express,..... .70
" " by mail,..... .75

Bee Veils.

The veil has a rubber band which draws the top together; it is then placed over any hat and drawn until the elastic is over the hat band. Common net, by mail,..... .35

Smokers.

Bingham & Hetherington's only.

By mail, $1.75; by express,.....$1.50

Queens and Full Colonies.

Queens.

Prices.

Untested queens, each,.....$1.00
Selected " " 1.25
Tested " " 1.50
Extra breeding queens, the best we have, each,..... 3.00

Our untested queens are sent out before any of their brood hatches. 95 per cent will prove to be purely mated. Safe arrival and purity guaranteed in all cases.

Carniolan queens and bees at the above prices. Our strain of this new race of bees cannot be excelled.

Full Colonies.

We consider eight frames well filled with brood and covered with bees a full colony. Prices of such in B. S. hive, including one set of sections, $12.00. Purchasers to pay express charges. Safe arrival guaranteed.

Fourth Edition of the

Beekeepers' Handy Book, or Thirty Years among the bees. 75 pages, with illustrations, by mail.....50

Queen-rearing Apparatus.

Beekeepers who rear queens, whether by the Alley method or by any other, should have the apparatus here described. The SWARM-BOX and QUEEN-NURSERY are articles that no person who rears queens ought to dispense with.

By using the swarm-box a large colony of bees can be confined a long time or transported safely hundreds of miles. It is a very useful article about the apiary at all times during the season.

Sent only by express, price, $1.25.

When a colony swarms and it is desirable to preserve the queen-cells, and no nuclei are at hand, the Queen-nursery in such cases will be found invaluable; the cells can be placed in them and they need no further care for a week or more. Virgin or fertile queens can be kept in the nursery for several weeks. We have sold a large number of queen-nurseries in years past.

The following articles are also used in rearing queens, a full description of which can be found in our work upon queen-rearing.

	Express.	Mail.
Queen-nursery (of 21 cages).....	$1.25	$1.60
Swarm-box.....	1.25	
Fertilizing-hive (complete)	.50	
Fumigator for using tobacco.....	.25	.30
Cone-feeder.....	.15	.20

To make the lot complete, we put in each package one drone-and-queen-trap, one copy of THIRTY YEARS AMONG THE BEES, and send all by express for..... $4.50

All these articles can be packed in the swarm-box and sent safely by express or freight.

Brooms for Brushing Bees from Combs.

We find a small "corn-broom" best for this purpose as it does not injure or irritate the bees, and will do the work better and quicker than anything else used for the purpose.

1 broom, by mail .... .25
1 " by express..... .20

HOW TO REMIT MONEY.

Remit by registered letters, cashier's check or express orders. If sent by money orders or postal notes, have them made payable at the Salem, Mass., P. O. Make all remittances payable to the order of the AMERICAN APICULTURIST.

Address,

HENRY ALLEY,

Wenham, Essex Co., Mass.

THE * AMERICAN * APICULTURIST.

A JOURNAL FOR THE NOVICE AND EXPERT IN BEEKEEPING.

PUBLISHED MONTHLY. SUBSCRIPTION PRICE, 75 CTS. PER ANNUM.

HENRY ALLEY, - - - EDITOR.

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Entered at Post-office as second-class matter.

The Editor's Department.

Read this and then Subscribe for the American Apiculturist.

Desiring to increase the subscription list of the AMERICAN APICULTURIST, we make the following unusual liberal offer: We will mail the above paper from Nov. 1, 1890, to Jan. 1, 1892, and to each subscriber will be mailed one copy of our new book, on *queen-rearing*, "*Thirty Years Among the Bees*," also a copy of the Beekeepers' Directory, all for the small sum of $1.25. Here are 350 pages of solid, practical facts concerning bee culture, at a cost per page of less than $\frac{1}{3}$ of a cent.

The two books contain all the information on beekeeping any one need possess from purchasing the first colony of bees to producing honey by tons and rearing queens by the thousands. Every part of bee culture is treated in a practical and thorough manner by one who has had thirty years experience in beekeeping.

The APICULTURIST has been issued monthly the past eight years and is considered by competent and experienced beekeepers as one of the most practical publications devoted to bee culture.

Apicultural Points.

Rev. L. L. Langstroth is improving in health.

A. I. Root has purchased two carloads of honey from L. E. Mercer & Son of Ventura, Cal. As Mercer & Son purchase a good many queens of us, we understand how it is that they have honey to sell by the carload.

Honey is getting scarce. We are not sure that this is not a good year to hold fine honey for a fancy price. Honey is retailing at from 25 to 30 cents per pound in Boston.

We saw some California honey in one-pound sections that was of an exceedingly poor quality. The dealer would sell that for 19 cents per pound by the case.

Forty delegates to Beekeepers' Congress stricken with fever.

Berlin, Sept. 21, 1890.

Forty delegates of the beekeepers' congress, now being held at Fulda, have been stricken with typhoid fever, and four of them are already dead.

The doctors allege that the disease is to be traced to their eating canned American lobsters.

Correspondence.

The color of Italian queens.

Mrs. G. M. Baker.

It seems then, to an amateur, that while a bright, golden yellow color is substantial proof that a queen is a pure bred Italian, like those from the Bay State Apiary, yet she may be equally pure, even though she shades off into a dark color as you approach the rear of the abdomen. At least, that is what we infer from reading the article in *Gleanings*, here referred to; because it is not for a moment supposable that the manager of that journal would allow a hybrid, or anything else other than purely bred and properly mated queens, to go from his apiary as pure Italian. Is this inference right? Is it only the bright yellow specimens that are pure, and if so, why are their sisters from cells cut from the same frame, same hive, same queen's eggs, and grown in same nursery hatching at same time, not all equally bright? Are they not equally pure? If not, in what respect do they differ—other than color—and what is the cause of it? We profess to breed only pure Italians and to that end, have never allowed a queen in the apiary that did not come direct from the Bay State Apiary, or reared by us and fertilized by drones from a queen got from there the same season, thus avoiding in breeding, and yet while we raise many just as handsome and large and perfect in every lot in a nursery we will find now and then one that shades off darker at the end, sometimes most black. Now, I don't believe there is a colony of black bees within fifty miles—there are no black drones for the queens to meet. Why then this difference in color of the young queens? We get but few shaded ones and those we kill as soon as hatched. If the dark shaded ones aren't Italians, what are they? We shall certainly be thankful if you or anyone can explain this. At any rate our experience don't seem to be exceptional. We raise three times as many queens as we use, yet never have sold any or tried to sell; but do it so as to have plenty to select from for our own use, and sometimes it is difficult to make the selection. It seems too bad to kill some of them.

In looking over our files of bee literature we are struck with the amount of work which should be done at "sundown" and just before. And now you state virgin queens should only be introduced then. We have never had any trouble in doing it at any time of the day; in fact, if the bees are working smart and honey plenty, prefer the middle of the day. It would take a modern Joshua to hold the sun up long enough to do a fraction of the work laid down for about sundown. Evidently from your recapitulation your time is tolerably well occupied. Does it all have to be done "about sundown?" "Call and see us" is good. Could'nt you take in a little civil engineering, or piece up a crazy quilt, or teach a kindergarten class? The father of all mischief could'nt abide in your "Neck 'o timber."

Natick, Mass.

Mrs. Baker is getting rather funny. We like it, and must say that we always enjoy a good, practical joke and a funny thrust when aimed at the editor. Don't be afraid that we shall get mad even if you hit us quite hard—provided you are only joking.

Now to business. Mrs. B. does not seem to understand that the Italians are not a fixed race of bees. She seems to think that the true Italians should produce all yellow queens and bees. It is not often that a yellow Italian queen can be found that will duplicate herself every time in the color of her daughters. Queens that will do it are the exception and not the rule.

A queen that produces the most beautiful worker bees will not produce *all* beautiful golden queens.

If Mrs. Baker would purchase one imported queen and rear queens from her eggs, she would have a good many dark queens to kill; all of them, in fact. Yet, we have found that even the darkest queens reared from an imported mother produce, when mated to yellow drones, handsomely marked worker bees.

We call queens pure, regardless of their color, when their worker progeny are all uniformly marked, that is, when all the worker bees show what are called three yellow bands. A pure Italian queen is not judged by her color, but by her worker progeny.

We have in the Bay State apiary two queens: one is a light straw color; the other is a dark leather color. The bees from both queens are exceedingly handsome. But those from the darkest queen are a good deal handsomer than those from the golden colored queen. While one queen was mated to a yellow drone, or a drone that came from what we call a pure mother, the other queen probably mated to a queen from some other colony, or, perhaps, both queens may have mated drones from the same mother.

We must say one word about the "sundown" business. Yes, ma'am, we say do certain work at sundown. If we have not stated the reasons therefor, please listen while I do so and for your special benefit as I am sure *all* other readers of the Api understand them.

We use tobacco smoke to introduce virgin queens. When a colony has been fumigated with tobacco smoke (except while bees are gathering honey) they are not in condition to defend themselves against robber bees. Now for that reason we introduced virgin qeeens just before dark. Before morning the bees recover from the effects of the smoke and all danger of the colony being robbed is averted.

We introduce queens at all times in the day as Mrs. B. does, but we do not use tobacco smoke in the middle of the day for that purpose by any means.

Then again, Mrs. B, we do a good deal of other work between sunrise and sunset, and put off introducing queens till the last thing, and we find it much less work to do it at night than we do in the middle of the day, and will say that it requires no more time to do it at sundown than it does at any other time. Have I made the "sundown" work clear?—Ed.]

A Visit to the Bay State apiary and queen-rearing yards.

By E. L. Pratt.

I spent two days and a night recently under the hospitable roof of Mr. Henry Alley, editor of the Api, and manager of one of the largest queen-rearing yards in the country. I cannot begin to express myself on the pleasure the occasion afforded. Suffice it to say that Mr. Alley is a gentleman; Mrs. Alley and all the family circle are very pleasant people to meet, and one feels at home on crossing the threshold of the "Old Alley Homestead."

We spent several hours talking about bees from every conceivable point of view, but mainly queens and queen-rearing, as two breeders will.

Mr. Alley has originated a new strain of bees, which he calls "The Yellow Carniolan." They were brought about by a freak of nature and constant selecting. They are very beautiful and as clever as flies. This fall has shown their gathering qualities to be as good as the best. The queens are large and very prolific, a great many of them being monstrous. Mr. Alley believes that yellow is the color of pure Carniolans. I do not; yet I do not understand why they answer so quickly to the "yellow call" when the greatest of care in breeding will not keep them from showing a spot or two of that color.

Next year will be a Yellow Carniolan year at both the Bay State yard and the

Pratt Bee Farm, and I doubt if we can both supply the demand for this beautiful new strain of bees. The breeding queens are decidedly golden in color, very large and strong.

After spending several hours looking over the yard we retired again to Mr. Alley's "sanctum sanctorum" for another long talk. The one-hundred-dollar queen seems to be in good health and doing excellent work.

A seven-frame hive will be used in the Bay State yard after this date.

The Pratt Perfection shipping and introducing cage has the preference with Mr. Alley now.

The swarmer is going to be a success after a little remodelling to force the queen to pass above as with the trap.

Mr. Alley's ideas are changing somewhat on the number of bees required to construct queen cells.

He will hereafter tier up for the nursery cages, placing them alternately with brood in an upper story above a zinc excluder.

I do not wonder that Mr. Alley is proud of his bees, they are of such beautiful color, so well behaved and such excellent workers.

We looked over several imported Italian stocks and found the queens generally dark, but the bees are well-marked and the queen progeny show a decidedly bright hue.

There were about 275 little fertilizing hives in the yard and over forty large colonies. The care of them all, besides considerable outside work, including all the work on the Api, is on the shoulders of Mr. Alley.

The tobacco smoker, so much "kicked" about by those who do not understand its use, is an indispensable implement in both Mr. Alley's yard and our own.

The masses do not half appreciate the value of the Trap, or drone-and-queen "Flight Controller," as it should have been called.

Come to get two large queen-rearing yards in Essex county, our friends can have a chance to see queen-rearing on a stupendous scale. We look forward with enthusiasm to our removal near the Bay State yards. Who dares say that we cannot sell upwards of 3000 queens from our two yards another season?

Beverly, Mass.

Notes from Florida.

By John Craycraft.

Friend Alley: Through the agency of "John Wannamaker," I have received a copy of the Api. I am pleased with its contents and more especially with "Notes and Comments" and where friend "Root" is asked to tell where progressive beekeeping would have been if not for "wasted time and brains" to obtain patents on "worthless" appliances in beekeeping fixtures. His (Root's) remarks must have made "dear old father Langstroth" feel very sad to think that he had wasted his time and brains to obtain "just nothing at all."

"Wasted time and brains" will continue as long as there are brains and time to make something better adapted to the uses of man; even though perfection may appear to be complete. Such is not the case; there is no stop either forward or backward. New inventions call for more new inventions. Progressive beekeeping calls for some material as a base for comb foundation; to make the manufacturer speedy; the material stronger; the handling, shipping and safety from damage more secure. Will some manufacturer that has the "time" to try the paper now in use by "dairymen" to wrap butter and said to be odorless, air and waterproof and cheap; who will volunteer the "time and brains" to obtain this necessity? Necessity is said to be the "mother of invention." Sooner or later some material will be brought forth that will solve the problem.

Beekeeping and honey production

is a very fine business. We are preparing to make honey production a specialty. We have thirty-eight colonies to start with this year. Shall work for increase, although we have our hives so arranged that we can double up for honey, or divide for increase with very little trouble. We use a small hive and work frames very close for the brood. Hives have loose bottoms and we can add as many stories as wanted. We got an average of one hundred pounds fine honey per colony last year from twenty colonies and nearly doubled them with very little attention as we resided twenty miles from them. Now we are with them having made this our residence.

St. Francis, Fla.

Notes and Comments.

By Henry Alley.

It soon will be time to make plans for the season of 1891. No doubt many are thinking of making a change in hives, or, at least, in trying some new pattern. For several years we have used more or less hives having closed end frames similar in principle to the Quinby closed-end frame; though our frames are made of much lighter material than the original Quinby frame. Mr. Ernest Root had an idea that hives having closed-end frames must possess some good points, provided such frames could be handled as rapidly and without killing bees, as the hanging frame.

When on his visit to the beekeepers of New York State, Mr. Root made a pretty thorough investigation of the matter and returned home well satisfied that the closed-end brood frame is superior to the hanging frame. Below we give his opinion and experience in his own words.

"Well, after leaving Mr. Tunicliff, Mr. Elwood and I started *en route* for one of his out-apiaries, and were discussing fixed distances and the rapidity with which they could be handled, as compared with the common suspended or hanging frames. Said I, '*If* fixed frames can be handled as rapidly, and at the same time without killing bees as the hanging-frame, they will be the frame of the future.' Mr. Elwood did not boast very much what he could do—in fact, he did not make any very great claims to the system, etc., which he was using. Sometime ago, in an article he said he could handle the closed-end Quinby as rapidly as he could the hanging-frame. I well remember at the time I did not doubt his veracity, but I did somewhat question his knowledge as to the manipulation of the suspended frame. I told him, as we approached one of the apiaries, that one of the privileges that I had long desired was to see him, or some other beekeeper using the Quinby frame, handle them as rapidly as the hanging frame, and not kill the bees.

Mr. Elwood and I secured the lunch-basket; and after hunting around for a good log to sit on, we partook of a hearty lunch; which, being dispatched, we put on our veils and proceeded to the yard. I had expected to see large Quinby hives; but, to my surprise, the brood-nest or brood chambers were no larger, on the average, in cubic capacity, than are those in our eight-frame dovetailed hives. I had supposed that the York State beekeepers, like the Dadants, advocated and used large brood-chambers. So far as I was able to discover, however—in the production of comb honey at least—they practise contraction, and use brood-chambers no larger in capacity than an ordinary eight-frame Langstroth hive. The frame being two inches shorter than the original Quinby, six of these frames would be about equivalent to eight of the Langstroth, I should say, without figuring. I was surprised to learn that all, or nearly all, of the bee-men of York State who have adopted the Quinby closed-end frame, like Mr. Elwood and Capt.

Hetherington, use it two inches shorter, and it is no doubt a better frame for the reduction in length.

After lighting the smoker, Mr. Elwood and I entered the yard, and he proceeded to open a hive while I was looking on with eager expectancy. The entrances were on the under side of the hive. Blowing a little smoke under to drive away the guards, he lifted off a case of sections. I expected to see those frames come apart with a snap, and an onslaught of bees. There was no snap or onslaught. He picked up and handled the frames as rapidly as you or I can handle suspended frames; and I am not sure but he manipulates them more rapidly.

Mr. Elwood then examined continuously twenty-five or thirty other colonies; and when I came to think of the time he had spent in doing it, of the queens we had seen, of the brood surface we examined, I was simply astounded. I feel pretty sure I could not have examined the same amount of brood surface in the hanging-frame in so short a space of time. Did he kill any bees? Not one that I saw. Did the frames stick together? Scarcely at all; and yet the bees were hybrids. Here was a large yard of, say, over a hundred colonies. I do not remember to have asked how long it would take him to examine each one; but at the rate he handled those before me he would have gone through the whole apiary in four or five hours, and hunted all the queens besides. He did not move very rapidly; on the contrary, his movements were deliberate, but they counted.

I am well aware that this is a heavy testimonial for the closed-end frames on the Quinby plan; but I deem it but just to give it, because I know the beekeepers of the west, and those who have been using the hanging-frames, have somehow got the idea into their heads that the closed-end frames were simply intolerable, and that the beekeepers who were using them were either very much behind the times, or so stubborn as not to be open to conviction that there might be something better. Indeed, when we consider the fact that nine-tenths of the beekeepers of that section of New York where I visited are using fixed frames, and are intelligent and progressive men; and when we consider the other fact, that they make bees *pay*, we must admit that their system is not so clumsy and awkward, after all. Capt. Hetherington, years ago, used hanging-frames faithfully, and finally discarded them for the closed-end Quinby. Capt. Hetherington, with his three or four thousand colonies, Mr. Elwood, with his 1,300, and a great many others, owning from 300 to 400 colonies in this part of New York, use only fixed frames, some Quinby and some Hoffman.

No burr-combs.

While Mr. Elwood was examining the hives I was pleased to note that there were no burr-combs on the tops of the frames. No, I do not believe I saw a single small spur. When I came to inquire into the matter, I found he used top-bars fully an inch wide and five eighths of an inch thick — perhaps in some cases one-half inch thick with *fixed distances*. I emphasize this purposely, because I believe that this is one of the secrets. I could not discover that any of the beekeepers who had used fixed distances with top bars five-eighths of an inch thick and an inch wide, in that section of country, had used honey-boards. No, a honey-board was a thing that none of them had ever tried. With no burr-combs, what need had they of them? Now, if I am able to judge correctly, with fixed distances we can have *thinner* top-bars; but with hanging-frames and no arrangement for automatic spacing, in order to do away with burr-combs there must be thicker top-bars. I examined into this matter very carefully all through this trip; and since my return home I feel confirmed in what I have said above in regard to the presence or ab-

sence of burr-combs, their cause and prevention.

I am well aware that I have given some flattering testimonials for the Quinby system. I am not sure, however, that beekeepers generally would not like the open or movable sides. The hive looked a little top-heavy also, and a good many beekeepers incline toward the shapely appearance of a thing as well as its practical utility with the two combined."

The Bay State Hive.

There, friends, I told you these same things a good many years ago, and not only pointed out to you the advantages of the closed-end frame hive, but offered for sale one of the best hives now in use.

Now that this subject is opened up anew, I have no doubt that thousands of beekeepers will adopt the closed-end frames.

We need not mention again the fact that the Bay State hive has a closed-end frame, nor need I mention all its good points. As we have added many new readers to our list the past year, we will, for their benefit, give a brief description of the Bay State Hive.

Fig. 1 represents the bottom-board, brood-chamber and one section-case from which the side-boards have been

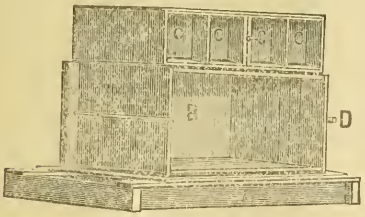

Fig. 1.

removed, thus exposing the interior of the brood-nest and the four outside sections C C C C in the case. The frames are held in place by two iron rods D D, which pass through the end of the side-boards of the brood-chamber, thus clamping the frames solidly together when the thumb nuts are set up. When necessary to move a colony of bees in one of the Bay State hives there are no frames to nail nor can the frames get out of place in any event. The section case is composed of six broad-frames; each holding four one-pound sections, or twenty-four sections to the case. A wood separator is used between each two frames or five to each eight sections. Like the brood-nest, the six broad-frames of the section case are held together by an iron rod which runs through the centre of the case, as shown in the illustration. All the twenty-four sections may be put on or removed from the hive in a body, and if desirable, the rod can be removed and any one of the broad-frames taken out singly. The case is also reversible which is an important feature in any hive. I know of no way by which the sections can be filled with honey without pop-holes, and fastened so nicely on all sides the section as by reversing at the proper time. Now this can be done so quickly and quietly with this section-case that there is little or no disturbance to the bees. There is just a bee-space (three-sixteenths of an inch) between the section-case and the top-bar of the brood-frames; and the bees build no brace-combs between nor between the top bars of the frames. Another point which can be claimed for no other hive is the fact that the *queen has never been known to enter and deposit eggs in any section cases used on the Bay State Hive*, and no queen-excluder is used. Can the same be said of any other hive? The section-cases can be tiered as high as is practical as the passage ways are continuous. We have tiered them successfully as high as four cases, at one time. When a case of sections is added, the one put on first is reversed and the new case placed directly on the frames, thus bringing the empty sections the nearest to the brood-nest. There is no hive in use whereby the sections can be placed so near the brood as can be done in the Bay State Hive. The ex-

perienced beekeeper will appreciate this last mentioned advantage.

As a winter-hive the Bay State has no equal; and as a hive to bring bees to the swarming point early in the season (and this means profit to the beekeeper, as no colony of bees is ready for business that is not in a condition to swarm so far as point of number is concerned), the Bay State stands first among the hundreds of different styles of hives now in use.

Fig. 2, in which is represented the Swarm-hiver and two Bay State hives, shows the hive ready for winter with the winter case on. There is a space of nearly two inches between the winter case and the brood-chamber. This space in the fall may be filled with chaff, or other heat-retaining material. We never pack this hive as bees winter perfectly without any packing whatever. Just as the bees commence to carry pollen in, in the spring, is the proper time, in our opinion, to pack a colony to secure the best results. A heavy duck mat and a cushion six inch-

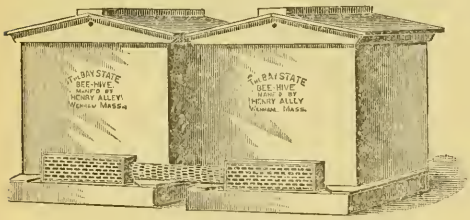

FIG. 2.

es thick, filled with chaff, or hay cut to length of about two inches, is all the winter-packing a colony needs to be wintered well in the Bay State Hive. This hive weighs, all complete, but thirty-five pounds. Anyone can lift them, bees, stores and all, with ease.

We claim for the Bay State Hive all the desirable features that can be combined in one hive.

Prices: one hive, nailed and complete, which includes every part, $3.00. In the flat per half dozen, $15.00.

As we desire to place them in the hands of a large number of beekeepers the coming winter, the hives will be sold at the following extremely low figures:

One hive complete, $2.75

By the half dozen in flat (shipped direct from the factory at Jamestown, New York), $12.50

This will include one hive, nailed, as it would be impossible for anyone who had never seen one of the B.S. hives to nail them up properly without a model to work by.

These hives are sawed so accurately that anyone can put them up even if the only tool he possesses is a hammer.

The lumber used is of the very best. No cheap work or lumber is our motto. We have sold thousands of these hives and all have given good satisfaction. The Bay State hive has been in use six seasons.

Packing Hives for Winter.

In a recent issue of *Gleanings*, A. I. Root says: "I do not believe that any hive will become popular that is made with the intention of removing the packing or winter covering in summer time."

Why use any packing at all in winter in double-wall hives? I claim that double-wall hives will winter bees much better without packing of any material.

Do you appreciate what an easy thing it is to test the matter? Just place from twenty-five to fifty colonies of bees on summer-stands in double-wall hives. Let each alternate hive be packed between the outer and inner walls with chaff or any other material. I will bet ten to one that the colonies not packed will winter the best, build up the quickest in the spring and do the best in every way. Try it, ye advocates of packing hives for winter. As this is the season for preparing hives for winter, why not test the matter at once.

The Benton Mailing Cage.

"As the essential features of th cage we have been using for the p ae

season were borrowed from the above, we have decided to credit friend Benton $50.00 for what the benefit his experiments have been to us." A. I. Root in *Gleanings*.

Mr. Benton is deserving all the credit and cash given him by Mr. Root for the shipping cage which is described in a late issue of *Gleanings*.

But, friend Root, how is it that you, in your beneficence, do not remember the fellow who invented, or first prepared the proper food for the mailing cages? To him belongs the credit of making it possible to send bees and queens long distances by mail. Of what earthly use would the Benton cage be without the pulverized or powdered sugar and honey food?

The Benton cage without this food would be about as worthless as a Langstroth hive without frames.

The person (who can name him?) who first prepared the new food for queen cages, is as much of a benefactor to beekeepers as is Mr. Langstroth who gave us the movable-comb hive.

Mr. I. R. Good first mixed granulated sugar and honey, but that was a poor food for shipping cages, and not as good as a sponge and honey. I found that the bees would use the honey, and leave the dry grains of sugar to rattle about the cage, which would catch in the screen wire used for ventilating the cages, thus stopping out all air and killing the bees in some cases; where powdered or pulverized sugar and honey are used, the bees consume all, and none is left to rattle in the cage.

Is this a new idea?

Of all the devices that have been suggested to retard or restrict brood-rearing after the honey season is over, it seems to me that the following method is the most practical and effectual.

When Brother E. L. Pratt was last here we discussed this point at some length. In the first place both had had the same experience in one line. When the honey season was over, our hives were full of honey; but before the fall harvest the combs were almost entirely bare of stores.

Then there is another thing in this connection that is peculiar, to say the least. Those colonies that had but a small amount of stores at the end of the honey harvest were in as good condition at the first of September as those that had plenty of stores early in the season. Well, now we have come to the conclusion that at the end of the honey flow another season, we shall remove nearly all the honey from the brood combs, and thus compel the bees to make their own living from day to day. In my opinion there will at all times be sufficient honey in the combs to take the bees through a week or more of dull weather.

It strikes me that this plan for retarding brood-rearing and also in economizing the consumption of stores will be successful. If necessary to feed back in the fall, the honey will be on hand for the purpose. This, it seems to me, will be better and cheaper than to purchase and feed sugar to winter the bees on.

An old friend visits the Bay State Apiary.

Rambler—you all have heard about this mysterious fellow. He is the funny man whose articles are published in about every issue of *Gleanings*. His ramblings have mostly been outside New England. However, a few weeks ago he got over the line into New England and roved about this part of the country considerably. It took Rambler some fifteen or twenty minutes to look the big state of Rhode Island over, and, before he was aware of it he had slipped out of that little potato patch and found himself in Massachusetts. Once in old Mass., he soon found his way to the Bay State Apiary. Well, as it was about dinner time Mr. Rambler was invited in. We had no sooner got well under way, when some one says "there's a man in the

yard." Sure enough, there was a MAN. It was Bro. E. L. Pratt, and we invited him in to dinner and introduced him to Mr. Rambler. "How do you do, Mr. Rambler?" says Bro P. By and by Bro. P. caught on and saw the joke. Well, we settled the dinner and then we settled some other things.

By and by Mr. Rambler brought out a little black box and said he wanted to take a few views of some things he saw in the B. S. Apiary. As we were putting up the last shipment of queens Rambler thought that a good subject to show up. Of course I had to take a prominent part in that little act and so I prepared for the occasion, which was no small job. However, the necessary preparations were soon made. Mr. Rambler pointed the "bull's eye" of that little black box towards us—click; "all right," said R., "I've got it." Well, that was done about as quick as lightning.

When brother Rambler gets ready we will give the readers of the API the result of that little click.

Rambler spent about four hours with us. We enjoyed his visit very much. Though we had to talk about as rapidly as some women when they meet, I guess we went pretty much over the whole ground.

About ourselves.

Well, friends, if you really desire to know all about us, you can get all the information by sending for the *American Bee Journal* of Oct. 11, page 681. It is all pretty good and correct, except on one point. Our complexion and our eyes are not dark; that is, if we know ourselves when we view our phiz in a glass. Our skin is quite light, and our eyes of a light blue color. Brother Pratt must have been here on a dark day.

By the way, reader, when you send for a copy of the *American Bee Journal*, why not, at the same time, enclose ten cents and get the *Illustrated Home Journal* three months? We receive this publication each month, and find its columns filled with choice and interesting reading.

Rhode Island apiculturist station.

We have received the advance sheets of the Apiarian's report of the R. I. Apicultural Experimental station. The report contains the result of wintering bees in a cellar as well as wintering on the summer stand. Spring feeding to stimulate brood rearing was another experiment that Mr. Cushman tested to some extent.

Concerning dry sugar feeding, Mr. Cushman says:

It is well suited to the management of out apiaries, where but occasional visits are made, and in all cases, though possibly in a dry country not so effective as syrup feeding, saves the trouble of making syrup and the time required in its daily distribution, while the danger of the disastrous results of occasionally omitting the daily ration is avoided. Instead of dry sugar, moist sugar like good grades of molasses and C sugar are best, but the former should first be well drained. This, placed in a feeder where the heat and moisture are confined, is slowly licked up or liquified by the bees. The rapidity with which this is done depends upon the heat and moisture in the hive. By placing an enamelled cloth, enamelled side down, over the frames in place of the porous covering, the loss of moisture, so desirable in freezing weather, may be lessened; while by removing the warm cushions or quilts from part of its surface, condensation of moisture takes place upon the enamelled surface beneath and furnishes water to promote more rapid work. The sugar may be placed in an ordinary syrup feeder or wrapped in cheese cloth and laid over the frames, but the arrangement we prefer and use here is similar to Mr. Simmins' pattern and consists of a hollow dummy, having the same length and depth as the brood frame, and a similar top bar and a movable side that does not reach the top bar by $\frac{1}{4}$

inch. This is filled by removing the side, while the space at the top allows the bees access and but little escape of heat. If the inside space is more than an inch wide, comb will be built therein. This mode of feeding is not only suitable for spring stimulation but is invaluable in a poor season to prevent starvation, for queen rearing, for building up nuclei and working for increase or drawing out foundation, as well as for promoting brood rearing after removing what is in some localities the only honey crop of the season. By using soft candy of best granulated sugar it may be made to piece out scanty stores in the fall.

When in the production of comb honey, dummies are needed to fill space in brood chamber of new swarms they may be made from these unused feeders by nailing on the movable sides so as to exclude the bees.

A practical experiment in the use of artificial heat to promote brood rearing, has been successfully conducted, the details of which will be given at a later date, when additional results shall have been gained.

O. R. Coe of Windham, N. Y., is intending to send a carload of bees to the Alfalfa regions, hoping thereby to put them in a locality where bees will not have to contend with the spring troubles of our eastern climate. The idea is a good one, but must be expensive.

If Mr. Coe is successful with this experiment, no doubt many other large beekeepers will do the same thing another season.

I believe we never received so many orders for queens so late in the season as were sent us this year. Some over two hundred orders were received after Sept. 25. We regretted very much that we could not fill all that came in. The long, wet spell of weather, from Sept. 8 to Sept. 19, was the cause of spoiling a good many queens.

Just before the dull weather set in, we had introduced a large number of virgin queens and nearly all should have been fertilized the next week. When clear weather came the queens were too old to become fertile.

Five-banded bees.

It looks to me as if the gun we discharged at those five-banded bee fellows, not only wounded, but killed one of them. A Mr. Hearn wrote the editor of the *Review* as follows:

Will you please allow me space to reply to Mr. Henry Alley in the "American Apiculturist" for Sept. 1. On page 138 he says, "We can show handsomer yellow Carniolan worker bees than any of those western fellows can of the five-banded Italians, and what is more, the color of our Carniolan bees is not produced by in-breeding as is the case with the five-banded Italians."

I think that it is but fair that our side of the case should be heard. There has been a great deal of stuff in the bee journals in the last twelve months by parties who are pretending to be opposed to the four and five-banded golden Italian bees. Even some of our prominent editors said such bees did not exist, but after we sent a sample of the four and five banded workers to them, they gave it up like men, so we are certain that some of our bee friends "talk too fast."

We can't imagine how Mr. Alley could know how handsome bees we have, or that we practise in-breeding. I know that in-breeding is not practised with me more than is necessary to keep in view four distinct characteristics, viz.: honey gathering, prolificness, gentleness, and color. How I have succeeded in these respects, hundreds of testimonials are on file to show.

Editor Hutchinson added the following footnote to the above:

"At the Exposition we showed the

Hearn strain of Italians, and secured first premium on them. At the Mich. State Fair, these bees together with those shown by Mr. Timpe, were left out in the cold entirely, the judge claiming that they had *too many yellow bands*. He said that one characteristic of the Italian bee is *three* yellow bands—to have more than this would bar them out just as soon as to have *less*. We shall not express our opinion here, but should be glad to hear from others, particularly from Prof Cook. Can an Italian bee have more than three yellow bands? If so, ought it to count *against* it when competing at fairs?"

Mr. Hearn says he cannot imagine how we know as to his manner of breeding queens. I will tell him. We know that there is but one way to produce those five-banded bees and that is by in-breeding. Our experience and observations in queen-rearing the past thirty years has taught us all we know as to how very yellow bees are produced. Does not Mr. Hearn acknowledge the fact of the manner he produces the color when he says he practises in-breeding to produce four points, and *color* is one of those fine points?

Mr. Hearn proposes that we both send Prof. Cook a queen and a pound of bees and let him decide which do the best. Just as though that would settle anything! How foolish to propose such a way of settling an important question like this. I am willing for my thousands of customers to decide the matter.

The judges at the Mich. State Fair did just right in leaving out five-banded bees; that is, if they were entered as pure Italians. Who ever saw a five-banded worker bee from an imported queen. Mr. Hearn in breeding out the true color of the Italians, also breeds out the honey-gathering qualities as well. I do not believe Mr. Hearn can show a testimonial from any one he has sold his five-banded bees to that says his bees are good honey-gatherers. Trot 'em out, Brother H.

I will tell you what I know about your five-banded bees, brother Hearn. A prominent beekeeper who purchased queens of you said that your bees are as handsome as any in the world, but so far as gathering honey, he had just as lief have so many flies.

While we are discussing handsome queens and bees, let me call your attention to the testimonials below from Mr. Thralls on this page.

Why, brother Hearn, at the Rhode Island State Fair, there were some ten or twelve large and small colonies of Italian bees. The colony that did the best that year and which were the handsomest bees, had a queen which was reared in the Bay State Apiary. Don't put up the $100 friend H. I know you would lose it. How bad I should feel when reaching out my hand, to scoop it in.

Apiculturist Mail-Box.

Would not take $10 for his queen.

B'acksville, W. Va.

MR. ALLEY: I enclose an order for four queens if you have them on hand. They are for parties who insist upon my getting them from you. Do you want to know why they want them from your apiary? I will tell you. I had a colony of bees on exhibition at a fair that were reared from a queen you sent me June 20, 1890. They are the most beautiful bees our people ever saw. The queen I would not sell for $10. I showed her to a man who has kept bees for thirty years. "Why," said he, "she is superb, I never saw such a queen bee in all my life." I tell you, friend Alley, this is the expression of every one who saw that queen.

SAMUEL THRALLS.

The admiration of all, it seems. We will not brag of the number of testimonials we have of this kind. Just watch the API and they will appear sooner or later.

They know how to improve their time.

Stratford, Ont., Canada.

DEAR SIR:- I was very much pleased with the queen you sent me last June. Her workers are very beautiful and what is better still they know how to improve their time.

G. W. PANTON.

Who were the dealers?

Melvale, Maryland.

HENRY ALLEY: Herewith find $1.50 for your valuable paper and a daughter of your $100.00 queen. Please send me a good queen as I have bought queens of three other dealers and in each case the queens were worthless.

O. PARKER BAKER.

The Self-hivers a grand success.

Matteawan, N. Y.

MR. ALLEY:—Your magazine you sent me was handed to one of our best beekeepers. He was much pleased with it. He sent and got some of your Self-hivers. They are a grand success.

H. W. AVIS.

Query Department.

Queen-rearing.

"The queen business is rather new to me. I have never attempted to fathom its mysteries, preferring to trust to others to rear them for me until I get posted on other things.

Would not bother you at this season if I could make out when to expect queens to hatch from the egg. You say on page 221, queens will emerge in sixteen days from eggs; again, on page 250 (observatory hive), you say in four days cells will be sealed, eight days more they hatch, making twelve days. Now what can I depend on after removing a queen from a full colony?"

Eggs, if let alone in the hive, will hatch between the third and fourth day after being deposited in the cells. Now, when eggs are removed from the hive, the maturing process is more or less retarded, so we allow some twelve hours for that, and call it four days. When the eggs are placed in a queenless colony the bees will not, in all cases, immediately commence to feed the larva for a queen, and here is still a little more loss of time. For this reason we give the following time from the day the egg is laid to the hatched queen: One hundred hours, or four and one-fourth days before the cell is started; two hundred hours, or about four days more, the cells will be sealed; and in just eight days from the moment the cells are sealed the queens will emerge; that is, provided the cells were reared in a strong colony and kept at a proper temperature all the time.

Now the best way for you to know when to look for the first queen or queens, is to know when the cells are sealed, and reckon just eight days from that time. You need not expect nor look, for a queen sooner, if the cells were started from eggs.

Our Premium List.

In addition to premiums offered subscribers on another page we make the following:

To any one who will send us three new subscribers beside their own, we will mail free one queen every way equal to the one described on page 170, by Mr. Samuel Thralls. The queen will be sent between June 15 and July 15.

Any one who will send one new subscriber with their own (two in all) will receive one of our drone-and-queen-controllers free, by mail.

To any subscriber who will send two new subscribers with their own we will mail a copy of THIRTY YEARS AMONG THE BEES free.

If you desire to get one of our Bay State hives complete, send us twelve subscribers. The hive will be delivered to the express here.

For five subscribers we will mail free one Bingham and Hetherington's 2½ inch smoker; or for one new subscriber with your own, we will mail one of our fumigators such as we use for introducing queens.

The Beekeeper's Directory.

A new book is on our desk. It is entitled "The National Beekeepers' Directory," and contains a classified list of 2,000 beekeepers of the United States and Canada (including about 200 supply dealers), with essays and hints regarding the successful management of the apiary. It is "compiled by Henry Alley, Wenham, Mass." It contains 140 pages, one-half of which are devoted to names and addresses of beekeepers, and the other half to the practical hints mentioned above, including Mr. Alley's "method for rearing queens in full colonies, while a fertile queen has possession of the combs." Price by mail, $1.00 bound in cloth.—*American Bee Journal.*

PRICES OF SUPPLIES

—AT THE—

BAY STATE APIARY,

WENHAM, MASS.

Bee-Hives.

We offer only the Bay State hive for sale.
One hive in the flat,..... ..$ 3.00
Six hives " " " 15.00
Twelve " " " " 27.00
All parts of the Hive are included in the above, frames, sections and all but paint and nails.

Sections.

One-piece sections	per 1,000	$4.50
" " "	500	2.50
" " " "	100	.60

Langstroth Frames.

Material for (hanging) frames for Standard L. Hive per 100.....$3.00
The frames we use are so constructed that the bees will not build comb between or over them at the top, nor fasten the section case and frames together, as is the case when the common top bar is used.

Nailing Block for Frames.

No one can do good work at nailing frames without a proper board to nail them on. We can send one, by express, that will do the work nicely price,.... ..... .50

Comb Foundation.

We can supply the best brands at manufacturers' prices, and ship direct to our customers from the nearest factory. We also keep a quantity in stock to fill small orders.
1 to 10 lbs., for brood frames.....55 cts. per lb.
1 " " " " sections.....60 " " "
We keep in stock but one dimension of brood-foundation 17½ x 7 inches. This is large enough for any L. frame and is just right for the Bay State frame.

Perforated Zinc.

This we can supply in any quantities, shipped with other goods, per foot.....12 cts.
If sent by mail, add 10 cents per foot for postage.

Honey Extractors.

THE E. T. LEWIS & CO. EXTRACTOR.
No. 22. 28 inches in diameter, 25 inches high, 2-frame for any size up to 12½ x 19; room for 25 lbs., honey below reel, and the best extractor ever made for. $10 00
We sell this size only as it is the most convenient to use of any found in use. This extractor is adapted to any frame in use.

Honey Knives.

Root's knife, by express,..... .70
" " by mail,..... .75

Bee Veils.

The veil has a rubber band which draws the top together; it is then placed over any hat and drawn until the elastic is over the hat band. Common net, by mail,..... .35

Smokers.

Bingham & Hetherington's only.
By mail. $1.75; by express,.....$1.50

Queens and Full Colonies.

Queens.

Prices.

Untested queens, each,.....$1.00
Selected " " 1.25
Tested " " 1.50
Extra breeding queens, the best we have, each,..... 3.00

Our untested queens are sent out before any of their brood hatches. 95 per cent will prove to be purely mated. Safe arrival and purity guaranteed in all cases.
Carniolan queens and bees at the above prices. Our strain of this new race of bees cannot be excelled.

Full Colonies.

We consider eight frames well filled with brood and covered with bees a full colony. Prices of such in B. S. hive, including one set of sections, $12.00. Purchasers to pay express charges. Safe arrival guaranteed.

Fourth Edition of the

Beekeepers' Handy Book, or Thirty Years among the bees. 75 pages, with illustrations, by mail.....50

Queen-rearing Apparatus.

Beekeepers who rear queens, whether by the Alley method or by any other, should have the apparatus here described. The SWARM-BOX and QUEEN-NURSERY are articles that no person who rears queens ought to dispense with.
By using the swarm-box a large colony of bees can be confined a long time or transported safely hundreds of miles. It is a very useful article about the apiary at all times during the season.
Sent only by express, price, $1.25.
When a colony swarms and it is desirable to preserve the queen-cells, and no nuclei are at hand, the Queen-nursery in such cases will be found invaluable; the cells can be placed in them and they need no further care for a week or more. Virgin or fertile queens can be kept in the nursery for several weeks. We have sold a large number of queen-nurseries in years past.
The following articles are also used in rearing queens, a full description of which can be found in our work upon queen-rearing.

	Express.	Mail.
Queen-nursery (of 21 cages).....	$1.25	$1.60
Swarm-box.....	1.25	
Fertilizing-hive (complete)	.50	
Fumigator for using tobacco..... ...	.25	.30
Cone-feeder.....	.15	.20

To make the lot complete, we put in each package one drone-and-queen-trap, one copy of THIRTY YEARS AMONG THE BEES, and send all by express for..... $4 50
All these articles can be packed in the swarm-box and sent safely by express or freight.

Brooms for Brushing Bees from Combs.

We find a small "corn-broom" best for this purpose as it does not injure or irritate the bees, and will do the work better and quicker than anything else used for the purpose.
1 broom, by mail .... .25
1 " by express..... .20

HOW TO REMIT MONEY.

Remit by registered letters, cashier's check or express orders. If sent by money orders or postal notes, have them made payable at the Salem, Mass., P. O. Make all remittances payable to the order of the AMERICAN APICULTURIST.

Address,

HENRY ALLEY,

Wenham, Essex Co., Mass.

THE * AMERICAN * APICULTURIST.

A JOURNAL FOR THE NOVICE AND EXPERT IN BEEKEEPING.

PUBLISHED MONTHLY. SUBSCRIPTION PRICE, 75 CTS. PER ANNUM.

HENRY ALLEY, - - - EDITOR.

VOL. VIII. WENHAM, MASS., DECEMBER 1, 1890. NO. 12.

Entered at Post-office as second-class matter.

The Editor's Department.

Read this and then subscribe for the American Apiculturist.

Desiring to increase the subscription list of the AMERICAN APICULTURIST, we make the following unusual liberal offer: We will mail the above paper from Nov. 1, 1890, to Jan. 1, 1892, and to each subscriber will be mailed one copy of our new book, on *queen-rearing*, "*Thirty Years Among the Bees*," also a copy of the Beekeepers' Directory, all for the small sum of $1.25. Here are 350 pages of solid, practical facts concerning bee culture, at a cost per page at less than ⅓ of a cent.

The two books contain all the information on beekeeping any one need possess from purchasing the first colony of bees to producing honey by tons and rearing queens by the thousands. Every part of bee culture is treated in a practical and thorough manner by one who has had thirty years' experience in beekeeping.

The APICULTURIST has been issued monthly the past eight years and is considered by competent and experienced beekeepers as one of the most practical publications devoted to bee-culture.

With this issue closes Vol. VIII of the AMERICAN APICULTURIST. To our numerous subscribers and friends we return thanks for the aid rendered us in increasing our list. We hope the API has been so conducted that we shall still merit a continuance of your friendship and hope to receive a renewal of the subscription of every reader, and also, that each subscriber will send us one or more new names to be added to our list.

Please read the liberal offers for renewals and new subscriptions.

Bees as advertisers.

While passing a drug store in the city of Salem, Mass., our attention was called to a small hive of bees in the window. On inquiring of the clerk, I was informed that A Honey Cough Remedy Company located in Brooklyn, N. Y., had sent out about 12,000 such hives to advertise their remedy.

I examined the bees and found them in fine condition; not a dead bee in the hive. In my opinion, this arrangement will greatly aid the beekeeper in the sale of honey and perhaps do much towards stimulating the bee business.

Correspondence.

Purity of Italian Bees.

GEO. F. ROBBINS.

Ever since reading the last API, I have been wanting to reply to your statement of opinion as to the markings of Italians. I do not know whether your yellow Carniolans are Carniolans or not. So far as they alone are concerned, I only know what Frank Benton, Dr. Morrison and others say, that Carniolans should show no yellow. I can not prove that you are mistaken so far as they are concerned; but, in the light of what you say about Italian bees, I am inclined to agree with the above authorities. I certainly do not believe that Italians will degenerate into blacks. Do you mean to say that if left to themselves, Italians would go back to blacks in disposition and habits as well as in color? You know there is a marked difference in the nature of the two breeds. Then why could not blacks by selection be bred up into Italians or a bee with all the characteristics of Italians? If you mean in markings alone such a change would take place, then I would say that my experience goes to show that one of the strong traits of Italian blood is to propagate and perpetuate its own color. I have known the time when, judging by traits and pedigree so far as I could know them, I had but one or two colonies of pure Italians. Nearly all my bees would show what is, I believe, universally regarded as the distinctive markings of Italian bees, *i. e.*, three golden yellow bands. I never saw a hybrid stock that I was sure was a hybrid, *i. e.*, half black and half Italian, that did not show plainly and uniformly those three yellow bands, while the progeny of a queen reared from one of these stocks and mated with a black drone will show every shade from an Italian yellow to a pure black with the yellow preponderant. I know it is generally taught that the three gold bands are invariable markings of Italians. But I believe it is also agreed among bee experts that the inalienable traits of Italians are gentleness, a disposition to adhere to the combs, and a general quiet demeanor, while hybrids are reputed among the most cold-blooded and persistent stingers in the world. Blacks, on the other hand, will run, hang in festoons to the combs, drop off, and scamper around generally. By those traits, largely, but not altogether, do I judge of the stock of my bees. I say not altogether for it was a chapter or two from my experience that first led me to my conclusions as given above. A year after I commenced beekeeping, with all black bees, I bought two colonies of Italians. From one of these I proceeded to rear drones and from the other queens. The progeny of every one of these queens, with one possible exception, showed uniformly those three gold bands. In my verdancy I supposed when the progeny of the first ones appeared that those queens were purely mated, but when they all looked alike, with seventeen colonies of black bees and two of Italian in my own yard and not another Italian in the country, so far as I have ever known, how could it be? And how they did love to *gouge* me! My! It makes me shiver yet to think of it. I could give further experience in the same line, but I have given enough I think. I am convinced that, so far from Italians losing their distinctive colorings unless careful selection is practised, Italians will transmit their colors more or less down through the generations of mixture with black blood.

I am nearly convinced of another thing which I cannot prove so satisfactorily to myself. I believe queens are usually fertilized some distance from the hive, or else drones from a distance meet them nearer home. In fact, drones and queens alike are disposed to seek mates at a distance from

home. I heard an old bee-man say a few months ago that he believed that drones would congregate at certain places and queens would meet them there, from the fact that he had at a certain place several times heard the roaring, drone like hum. I have read other evidences to the same effect. Of course it is understood that, if it is so, this is nature's method of preventing in-and-in breeding. I certainly would not want to warrant a queen if there should be black bees within four miles of my apiary, even though a majority of my queens should mate with drones born in the same apiary. You, no doubt, are certain that your Carniolan queens were mated with drones from your own apiary. Though I know not all the circumstances yet I doubt it. The simple fact that you are certain need not convince me. You ought to know better than I, and you may be right, but I cannot but doubt that you can properly be sure there were no foreign drones in your vicinity when the queens, from which your yellow Carniolans came, were fertilized.

Mechanicsburg, Ill.

[See reply under Notes and Comments.]

Italian bees. Are they the most beautiful?

DR. G. L. TINKER.

The Italian bee when crossed with other races may be bred into a great variety of colored and marked bees. Wide extremes in the color of the yellow and black bands and in the color of the hairs of the body are easily produced. The yellow bands may vary from a deep orange red to a light lemon yellow. The black may vary from a light brown to a deep glossy black and the color of the hairs from rusty red to yellow and a pure white.

But no such wide range in these colors and markings can be made by select breeding of the pure Italian bee. A cross with the Cyprian will give the deep orange red, the all red abdomen of the drones, queens and workers with red hairs all over and complete obliteration of the black bands seen on the Italian bee. These bees also build their combs and cap them like the Cyprians, also they present the well known water-soaked appearance.

The same general character of bee can be developed from a cross with the Syrian, the color being a light lemon yellow instead of a deep red.

The Albinos or white-haired bees are the result of certain crosses of the imported Italians having well marked traces of the blood of the black or German bee. The first imported Italian queen I got some ten years since produced white-banded workers and very dark white-haired drones, and it was from the drones of this queen and her daughters that my strain of Albino bees was originated; the drones being crossed upon the daughters of a fine Syrian queen. Some of the daughters of this imported queen were almost black and a black strain of bees could undoubtedly have been bred from her. As my first crosses were made late in the season when no other drones were in existence I could hardly be mistaken in the results. From these crosses I got many white-haired yellow-banded bees, and many that would pass for the average hybrid from the same queen. Continuing the cross by selecting the white-haired yellow-banded queens it was not many years till the typical white-banded Italian marked bee was produced, the direct descent of the mother stock being Syrian. These bees have been several times crossed with noted strains of Italians until after eight years of breeding I have my present stock of Syrio-Albinos.

That white-haired bees have been originated from the imported Italian bees by other breeders is certain and it is just as certain that from the same imported queens a black strain of bees

could have been produced. The Italian bee has a trace of black blood in it that can be bred to a black strain as easily as the yellow blood in the Carniolans can be bred to a pure yellow strain.

The Italian bee, though not a pure race, has certain well known markings. It has three yellow bands and three glassy black bands on the abdomen, and the color of the hairs on the body varies from yellow to white. At the present time the most noted breeders in this country are breeding the white-banded Italian bee and consider them not only the most beautiful but the best workers. Such are the celebrated stock of Mr. Alley, Mr. Cary and others who are breeding the finest Italian bees. In appearance they are so nearly like my Syrio-Albinos that I would defy anyone to come into my apiary and tell one from the other.

I have called my new strain the Syrio-Albino, to distinguish it, but have steadily bred to the standard type of the Italians, so that I may make new crosses at any time and introduce new blood without getting a lot of mongrel bees as the result.

Recently I have made several crosses with Mr. Cary's Italians producing as fine and regularly marked bees as were ever bred. And I expect to be able another year to make the same splendid crosses with Mr. Alley's invaluable strain, as the queen he sent me (a daughter of his famous one hundred dollar queen) is of the white-haired variety of Italians and produces beautifully marked white bred bees.

Why it is that we have queen breeders who are breeding a so-called Italian bee with markings and coloring different from the recognized standard of the Italians, some breeding all red bees, some four and five yellow banded and some with solid yellow abdomens is a mystery to me, for every cross with the standard Italians will produce as irregularly marked bees as any hybrids. Then these highly colored bees are confessedly produced by in-and-in breeding, are mostly undersized and scarcely any of them are capable of producing a choice article of comb honey, their really valuable qualities being sacrificed in attaining the one object of color.

As to the matter of beautiful bees I fully agree with Mr. Vandruff who gives his views in a very able communication to the *American Bee Journal* (see page 662). He says "I think this breeding for extremes of any color by our queen breeders is a great mistake. The more they run to the extremes of very yellow or very white or black the less good qualities they possess. I am well satisfied it results in deterioration in size as well as in many other good qualities and is a failure in getting a beautiful bee.

New Phila., Ohio.

Introducing queens.

JOSHUA BULL.

On the 16th of last August I received from the Bay State Apiary two of the brightest yellow Italian queens that I ever saw. They were large and fine; and if color counts for anything they are superlatively beautiful.

To introduce one of them, I removed the old queen from a colony, and placed the cage containing the new queen above the frames and allowed the bees to liberate her by eating out the candy, according to directions sent with the cage, and in about one week she commenced laying. This is a very simple way of introduction, and no doubt would prove successful in most cases. But when a colony is in just the right condition for it, there is a still more simple and expeditious way, which is attended with less uncertainty, and saves time in getting the queen to laying, as I will endeavor to show through the method by which I introduced the other one of those two queens mentioned above. It

was as follows: I went to a colony which has a virgin queen, and took away the virgin, and immediately let the laying queen loose upon the combs right among the bees; they received her kindly and at once commenced to caress her, and she appeared just as contented and happy as though that had been her native home. She commenced laying in a very few hours, and in just twenty-one days from the time she was put into the hive her young bees began to hatch quite freely.

I would not recommend this method of introduction only in cases where the queen to be removed is a virgin queen, and when such is the case this is the most simple and easy way imaginable, and I believe it to be well nigh infallible. I have practised it for several years with perfect success in every instance.

The appearance of a laying queen in their midst, in place of a virgin, is in such perfect harmony with the natural course of events that it does not seem to arouse any suspicion among the bees. Although the odor of a fertilized queen may be different from that of a virgin, nevertheless that change of odor is just what their instinct teaches them to expect as the next development of their virgin queen, and therefore insures the favorable reception of the strange queen; being greeted as the sovereign of the colony she at once feels at home and contented, and will usually proceed forthwith to the fulfilment of her queenly duties.

There may not be anything in this that will be new to the readers of the API, but I do not remember of ever having seen this mode of introduction recommended, except in an article written by myself several years ago, which was published in the *Canadian Bee Journal*, vol. 2, pages 908–909. I prefer this method when circumstances will admit of it; partly because of its simplicity and certainty of success, but principally because I believe that queens introduced in this way are invariably more cordially received, and consequently they prosper better. On the other hand, it sometimes happens that queens introduced by other methods, and under different conditions, although their presence is tolerated, yet they are looked upon with suspicion and treated with cold indifference if not actually tortured by the bees; and if anything goes wrong, or the hive is disturbed, they appear to hold the queen accountable for all of their trouble, and she lives in jeopardy of her life all the time, and therefore lays but sparingly if at all. I have known instances where the bees would ball their queen every time the brood nest was disturbed for a month or more after being introduced.

I believe that if the facts were fully known, that many of the complaints that we hear of about queens being injured by confinement in the mails, would be found chargeable to the above named cause and nothing else.

Seymour, Wis.

Small hives and their management.

Z. S. HAWK.

Isn't the editor of the APICULTURIST getting to be a little bit radical in his views regarding the proper size of hives? Here he is, now, advocating an 8-frame hive with a capacity of about 7 L frames. According to all theory that is about 3 L frames too small, and our editor, this veteran of thirty years in the apiary, ought to find himself going into the harvest with nucleus colonies and meeting dire disaster for want of the proper number of bees. But no such ill luck attends him and after due trial of such hives he has the courage to proclaim his faith. That's right, friend Alley, and I am with you in your belief in hives that do not take in all out-doors. And right here I will tell you a little of my experience the past season.

I had in my yard a number of colonies on eight frames each, the frames being 7 inches deep by $16\frac{3}{8}$ inches long. This gave to each of these colonies just 800 square inches of comb. They were not fed an ounce or re-enforced with frames of brood or honey, and they never saw more than 800 inches of comb at any time in their lives. Now for results: One colony, blacks, stored 72 pounds of basswood in sections in two weeks; another stored and capped 48 pounds and filled another super of 24 sections about half full during the same time; another gave 48 pounds and others all the way down from those figures to nothing. The advocates of large hives will say that I would have had a much larger crop if I had used larger hives and raised more field bees. But I wouldn't have had any crop at all. In the same yard with the small hives stood a dozen hives of 1250 square inches comb capacity. These received the same care as the small hives, but they gave me practically nothing, and two 10-frame L hives gave me a bushel of bees, each, but not a pound of honey. The colonies in the small hives placed themselves in splendid condition for winter, but those in the large hives would have been short of stores had there not been a fair flow of nectar a short time before frost.

The colonies mentioned above as giving such good returns were not new swarms, but old colonies that had been wintered in the small brood-chambers. The season was so poor that new swarms barely filled their frames with comb and honey.

Now if I were compelled to use a brood-chamber of a fixed size the year around, I would want it to contain 1200 or 1400 square inches of comb, but nothing would tempt me to use such a hive in Iowa. When the spring is favorable it is no very difficult matter to have a double story of my hive nearly full of bees and brood at the beginning of the honey harvest. Then if a swarm issues, as is very apt to be the case, it is hived on starters of foundation in a single brood-chamber, a queen-excluder and the sections are placed in position, the new swarm placed on the old stand, all the bees shaken out of the mother colony that can be spared and the work is done. After such treatment the mother colony is not inclined to cast a second swarm and in a short time its bees may be crowded into a single story and given a case of sections. The spare combs may be given to a colony that is being run for extracted honey.

Audubon, Iowa.

Profiting by experience. Success in bee-keeping under adverse circumstances.

A. C. TYRRELL.

FRIEND ALLEY: This date (Oct. 16, 1890) finds us at the close of the honey season in Nebraska, but little more to be done in the apiary except to tuck the bees snugly under warm quilts for their long winter's nap.

If we have not been able to add to their stock of knowledge we are confirmed in our belief as to the proper methods to adopt to produce the best results in our own locality.

As was the case last year we have had to contend with drought and the serious drawbacks incident thereto; but profiting by experience and knowledge gleaned in former dry seasons, and by cultivating various honey plants, I am happy to report that in consequence thereof I have been so fortunate as to take up more than three times as much honey per working colony as any beekeeper in the state judging from reports made at a sort of experience meeting held at the state fair at Lincoln, Sept. 10. I will not again weary your readers with a long essay concerning the benefits to be derived by preparing pasturage

for bees, as I have heretofore given my views at length on that subject. I am satisfied upon that point, and that is sufficient for me, and others can profit by my experience or let it alone, as best suits their individual cases.

Frequently of late the "Wiley lie" has appeared in different papers, and the same has been copied in some journals by those who should be in better business, and every time I read such scurrilous items I wonder why (even if it were true) other evils of greater magnitude are not declaimed against.

I am reminded that I was in danger not long ago of losing my entire apiary, when the bees found a mess of stuff kept for sale by one of our leading grocers and called "sugar drip" (or some high sounding name) which he had thrown out at his back door. After filling up with it and before they were able to leave the spot thousands perished.

Did the leading papers throughout the country under large display lines caution the dear people against buying adulterated syrup? Not to my knowledge; neither did the grocer.

If it were a fact that comb is made of paraffine and filled with artificial honey, I'll wager any amount that the contents would not poison bees or prove so injurious to the human stomach as the vile stuff that killed my bees; and I very much doubt if one of the great leading newspapers would, in the interest of humanity, publish anything derogatory to the firm manufacturing the so-called "sugar drip," especially if it were a wealthy corporation.

The press with seeming eclat continue to injure the poor but honest beekeepers, honest from force of circumstances if for no other reason, as they cannot profitably adulterate or manufacture comb-honey by such scandalous reproductions and warmed up re-hash of the Wiley lie, but the adulteration of nearly every manufactured article of commerce goes on with scarcely a word of protest, and none are found to refute the charge.

Yea, verily, we are a peculiar people, past finding out.

In my next I will give my method of building up weak colonies in the fall, how I prevent increase, and why I do not seriously object to brace-combs, all of which is not entirely original, but good enough to bear repetition, I think.

Madison, Neb.

Can swarming be controlled?

E. L. PRATT.

It has been the aim of many inventors to contrive a plan whereby swarms can be controlled and drones kept from flying without interfering with the flight of the bees in the least and, at the same time, giving ample ventilation to the strongest colony.

By the use of a trap, in combination with a queen-excluding honey board, this end will be accomplished to the satisfaction of all.

It has been proven time and time again that excluders do not interfere with the free passage of the bees but successfully hinder the queen from entering any parts of the hive where applied.

A common zinc excluder is attached to the bottom of the hive and raised from off the bottom board in the ordinary manner to make an entrance under the same.

Another entrance is made above by removing one-half the binding about the zinc at the end.

Upon this is set the hive in the ordinary way and an Alley trap or swarmer is applied to the upper entrance. The lower entrance is left open its full length.

The major portion of the working force will make its exit through the upper entrance and trap, while their returning sisters, heavily laden with

honey and pollen are passing under the trap and through the excluder into the hive.

One will see at a glance that the ventilation by such an arrangement is complete. There is no faltering at the entrance on account of the out rushing of the bees that have just deposited their loads.

By this arrangement the bees are forced to make their entrance separate from their exit and considerable time is saved to them thereby. Ventilation is perfect with or without the trap or swarmer and there is no interfering caused by fanners, hangers-on, etc., as with the single long entrance. The grand rush is successfully handled in a common-sense way while perfect ventilation is doubly aided.

The only argument in opposition to the Alley Trap or Swarmer has been that the bees are hindered in passing the metal.

By the above arrangement this objection is entirely overcome. Any person using a hive with loose bottom-board can demonstrate this fact to his entire satisfaction. As a swarm controller the traps have never been questioned. Give them a trial and be convinced.

Beverly, Mass.

Notes and comments.

HENRY ALLEY.

In this issue, Mr. Bull gives his experience in introducing a fertile queen at the time a virgin queen was removed. I can say that the plan will work successfully in every case, as it has been practised in the Bay State Apiary more than twenty-five years. If friend B. will look over the bee-papers published a good many years ago, I am quite sure he will find the same thing in some of our articles. He will also find that I said that a virgin queen can be removed and a fertile queen be introduced at once with perfect safety; but a virgin queen could not be introduced at the time a fertile queen was removed; the colony must remain queenless three days before such a thing is attempted.

As Mr. Bull says, a good many queens are lost in introducing. I mailed three queens to a customer in the state of Pennsylvania, last season. He lost two of them in trying to introduce them. He then wrote me that my queens were not suitable for that climate as the bees would not accept them, and he wanted no more. D. F. is about all the reply I can make to such a fellow as that.

Eight-frame hives.

I am glad that one prominent and well-informed beekeeper can endorse all we have said about eight-frame hives. Friend Hawk's article, which appears in this number of the API is a most interesting one and full of good points.

It really looks now as though the advocates for eight-frame hives will soon be in a majority; at any rate the manager of the Bay State Apiary finds himself on this point in good company.

I have several cords of ten-frame hives piled up in my yard and from which I have taken the bees. The owners do not seem to call for them; we guess they have no further use for such large hives.

I have had had several new cuts made of the Bay State closed-end frame hive, which will be shown in the January API. This hive is going to have a boom the coming season as prominent beekeepers have discovered the fact that it has real merit and is the coming hive.

Italian bees.

The readers of the API should not fail to read Dr. G. L. Tinker's article on page 175. Friend T. does not write as much for the bee publications as we wish he did; but when he does write, his articles are of great value and importance to beekeepers.

There is something that induces Dr. Tinker to write for the press, besides the five dollars he may get for the trouble. For this reason his communications on bee culture are of great value. Now this thought brings us to another subject that is agitating the minds of some of those who write for bee periodicals.

Paying for copy.

Well, didn't our remarks and comments given in a recent issue of the API wake up several sleepy fellows?

I said that most of those articles found in the bee-papers and for which the authors were paid five dollars each were not as good, or as valuable, as many that have appeared in the API, and for which we were charged little or nothing. I did not wish anyone to understand that all articles found in the bee journals were included in this charge. There are many valuable articles in nearly all the bee-papers, and then there are some that it seems to me the authors feel as though they must fill up with wind what they lack in ideas, and that they must say something in order to stretch the article to a certain length for the money promised for the work.

I have seen articles that filled three columns that were totally devoid of all information or valuable ideas. Had the editor who used them not been short of copy or had not promised the writer several dollars for the article, it would no doubt have been reduced to about a dozen lines or thrown into the waste basket.

Since I took charge of the API, there have been three of our friends who have said that they did not care to furnish more copy without being paid for it. Well, they are good writers, but I had to let them drop out as we couldn't afford to pay much for copy.

The time is not far distant, however, when we can afford to be more liberal with our friends who send us articles. The API has more than paid expenses the past two years, and the prospect is that it will pay much better another year.

Don't fail to read the January, 1891, issue and note the improvements in its make-up.

Do the Italians deteriorate? Markings of Carniolans, etc.

Our friend Robbins takes us to task for our remarks as given in a recent issue of the API concerning the liability of the Italians to deteriorate. After having a word or so about the color and markings of the Carniolans, I will try to convince friend R. that our position and opinions heretofore expressed in these columns, concerning the races and their markings are about correct.

Yes, I know that Frank Benton, Dr. Morrison, Brother E. L. Pratt and a good many others have said that the Carniolans should show no yellow bands. Yet, some of these well-known gentlemen are honest enough to tell their customers that they cannot rear Carniolan queens whose worker progeny will not show more or less yellow bands. I do not know that any of the above mentioned parties claim that they can, or ever have reared very many of what are considered *pure* Carniolan queens. It has been found impossible to rear pure or typical Carniolan bees here in this country. I know as well as friend Robbins and others that the Carniolan bees should show no yellow bands.

On this point, it seems to me, I have given friend R. some good ideas. Now, I will see what I can do about the Italians. I shall try to show that the Italians are not a fixed or distinct race of bees, and that they are hybrids even in their purest state.

I do not know how extensive friend Robbins' experience has been with the Italians; but I do know that he has a wrong idea concerning their purity and markings. I have found in my thirty years' experience in rearing Italian queens that beautiful bees and queens cannot be reared except by the

utmost care and selection. By selecting only the best in all cases can what we call purity be maintained in propagating the race of Italian bees. On the other hand, the most careful selection in breeding of the Carniolans will not prevent them from sliding back to yellow bees.

Why is this? Simply for the reason that the Carniolan bee is the original yellow race, while the Italians were crossed in and bred up from the Carniolans. It is conceded by all that the *pure* Italian bees are very gentle and docile. The same is said of pure Carniolans. Well, now isn't it reasonable to suppose that the Italians inherit this trait of gentleness from the Carniolan blood? It seems to me they do, though I may be mistaken.

Yes, friend R., I do mean to say the Italians will not only degenerate in color, but in all other traits as well. They will run back in a few years to almost pure black bees, and be just as ugly and worthless after awhile as black bees.

I can take the purest Italians and in a few generations work them back to almost pure black bees, and by in-breeding, too. All that need be done to accomplish this is to select the darkest queens and mate them to the darkest drones of the same stock.

Don't you think it can be done, friend R.?

Any old breeder of queens will not doubt this statement for a moment. Then, again, I can take this strain of black bees, bred down from pure Italians and in the course of half a dozen generations breed them back again to beautiful golden Italians.

To the question, "Why could not black bees by selection be bred up into Italians or a bee with all the characteristics of Italians?"

That thing is impossible unless there was some yellow blood in the black bees a good many generations back. If black bees have the slightest tinge of yellow blood, it is an easy matter to breed them up by selection to Italians. By continually selecting the yellowest queens and drones and mating them the strain would soon return to pure Italians again. Isn't this perfectly plain to you, friend R.?

I cannot agree with you, friend R., when you say that one of the strong traits of Italian blood is to perpetuate its own color. My experience has been exactly opposite. Don't you know, friend R., that the queens sent us from Italy are almost black? Such is the fact. We reared a number of young queens last August from imported mothers sent us by Bianconcini. Some of the queens were as black as any black queen we ever saw; yet, when mated to our handsome drones, these young queens produced beautiful bees. Had these queens been mated to dark Italian drones, the worker bees would be about the same in markings a common hybrids. You see it was selection that produced the beautiful yellow-banded workers.

The disposition of the Italians varies greatly. The color or breeding seems to have nothing to do with gentleness and docility of bees of any race. Circumstances and treatment have much to do with forming the disposition of any race of bees.

I had a colony of pure Italians that I thought the most gentle bees in the world. At the proper season they cast a swarm. While I could handle them without smoke or protection before swarming and get no stings, they required a good deal of smoke to quiet them after swarming. They are pure Italians. How do you account for that, friend R.?

I agree with you, friend R., in the statement that "the Italians will transmit their colors *more or less* down through the generations of mixture with black blood." If you will read our article again which you criticise you will notice we said that the yellow markings would not wholly run out; "there would be a few bees in each colony that would show a

narrow yellow-band." But "more or less" exactly covers the point we made.

I do not think queens are fertilized far from the apiary. I am not a believer in the "four mile" theory to insure purity.

The old man who says drones congregate at certain places is right. They do; that is in and over the apiary in which the young queens are located.

Some twenty-five years ago I was strolling on the hills some two miles from my apiary and that distance from any bees. It was in the forenoon of a fine June day; just such a day as bees gather large amounts of honey. This roaring as of bees in the air was heard. I spent about an hour trying to find out what the roaring was, but all to no purpose. No bees could be seen in the air, and although we roamed about in a radius of half a mile the roaring continued. Then again it could not have been drone bees as drones do not fly in the forenoon. This same roaring can be heard on any pleasant June day.

Now about warranting the purity of bees and queens. We warrant all our queens and have always done so, even when there were fifty colonies of hybrid and black bees within half a mile of our apiary; little or no complaint was heard from my customers of impure queens any more than there is now, and there are no black bees within four miles of our yard.

All that is needed to insure purity is plenty of pure drones in the same yard with the young queens.

I regret we have not the space for more extended remarks on this point, and in conclusion we respectfully refer friend R. to Dr. Tinker's article on another page of this issue."

Uniting bees.

"If I had four small colonies," says a correspondent in the *American Bee Journal*, "that I wished to unite, I would move them together, and let them get well established in their new location before disturbing them. I would move them in the evening, after all the workers had returned from the fields, and put grass or straw in front of the hive entrance, so that they could not leave as usual; a board in front, to bump their heads against, will cause them to notice a change in their location."

I would do nothing of the kind. If I had colonies that I wished to unite, I would do this: When the brood had all hatched out the combs, I would take the bees into the bee-room, give them some tobacco smoke and then brush all from the combs into what we call our swarm-box. This is a box with wire cloth bottom and a movable cover which is also covered with screen wire.

Here I would let the bees remain queenless three days; then dump them down in front of the hive they are to occupy and let a queen run in with them. By this method the bees would not quarrel, and few if any would return to the old location.

Of course the bees will need feeding while confined in the box. As every one knows how to feed bees under such circumstances I will not mention it here.

Apiculturist Mail-Box.

Six fine queens.

Harriettsville, Ont., Can.

MR. ALLEY: I received the six queens all in good order. They are fine ones. Send $3 for three more.

EDWIN LEWIS.

A large queen.

Ukiah, Cal.

MR. ALLEY: The queen I got from you is the largest and most prolific one that we have. Her bees are fine.

C. C. THOMAS.

Highly recommended.

Santa Anna, Cal.

MR. ALLEY: Herewith find $1 25 for one Italian queen. A neighbor has been getting his queens from you and speaks very highly of them.

G. S. FOX.

Bee notes from Texas.

OTTO J. E. URBAN.

When I read the article, "Introducing Queens" in September issue of the API, I had a colony in my yard that killed two queens for me while introducing by the cage system. I thought if Mr. Alley can introduce his queens by using tobacco smoke, I can too. I had just received a fine queen from Mr. Alley that morning. I fired up my bee-smoker and mixed smoking tobacco with the wood; took my queen, gave the bees a few whiffs, opened the cage and "let her go Gallagher," I said. Her majesty marched in and I smoked more afterwards. Next morning I found her busy at laying eggs. I think I shall never introduce in cages again.

Bees are doing well in this country. Mr. Alley writes me under Sept. 16, "If it ever stops raining I will send the queens you ordered. This is the eighth day in succession that it has rained." While writing this for the API (3 o'clock P. M.) I see the air filled with young bees in my apiary, enjoying the warm sun, and the old foragers come in heavily loaded with honey and pollen, making their hives heavier every day. Such a thing as feeding for winter we know nothing about here except in extraordinarily poor seasons.

Another incident I want to tell you about. Have you ever seen a queen that kept ten Langstroth frames full of brood? I have one of that kind in my yard. I use the ten-frame Langstroth hive and she keeps the brood-chamber chock full of brood; the bees are of the prettiest kind, very gentle and industrious.

I shall make this queen raise me a lot of young queens next season. I think she is as good a one as I can get for a bee mother.

Thorndale, Texas.

A pointer for Mr. Hearn.

Mr. Hearn seems to think that I am the only person who complains of the color of five-banded queens. His attention is respectfully called to an article which may be found in a recent issue of the *American Bee Journal* and from which we take the following:

"My observation and experience the past ten years in purchasing and testing queens from all the principal queen-breeders have led me to the conclusion that but few are pursuing the right course to produce the best bees.

A few years ago the Albinos were all the rage and I have tried many different strains of them; but I find that the breeders of these bees seem to have nothing in view but the white bands of hair and have neglected to preserve the three yellow bands, so that many show but yellow on the third band, and not as they should on the first and second.

Latterly, it seems that the golden Italians are having a boom, and I have tried different strains of these bees, also; and I find the same fault with the breeders of these bees, as with the Albinos — they seem to be sacrificing all other colors for the golden yellow. I have had bees of this strain that had four or five yellow bands, with nothing on them but yellow, not even a streak of black on the edge of the bands, and the hair as yellow and so nearly the color of the bands that one could scarcely tell there was any hair on them — and some call them beautiful bees! Now, the idea of a plain yellow bee, or a plain white, or black, or any other one color making a beautiful bee, is not in accordance with my ideas of a beautiful bee. As some one has said, "I want a ringed, streaked, siriped, and all color bee," with a beautiful, flashy contrast of color.

My experience with different colors and strains of bees is, that the very yellow bees do not cap their honey white. I had one colony in particular

the past season that did the worst cappings I ever saw; it was not fit to put on the market at all, as the capping looked as if completely water-soaked. They build too many burr-combs, make too much use of propolis, are not quiet enough and some strains are too small.

As to Albinos, as a strain, by most breeders they are rather too small and have not yellow enough left on them; but they have more good qualities than the very yellow bees; they cap their combs whiter, but many of them are too much inclined to build burr combs.

My experiments show that neither an extreme of white, yellow or black in a strain of bees, gives the best results as to good qualities. I have found that bees possessing the most good points have all the colors above named, beautifully combined. The hair is light-colored, the first three bands orange to light orange color, with a fine line of rich, glossy black on their edge, and the last three bands a glossy black, with white rings of hair. Bees with such markings are always so far as I have observed very beautiful, and possess more good qualities than any other color on markings than I have experimented with.

Markings for best characteristics.

For the benefit of those wishing to experiment on this line of color, I will give the particular markings that I have found to give the best characteristics, as well as great beauty:

The three yellow bands should be orange color —not too dark, but rather light, yet not too light; these bands should not be all yellow, as in the case of many of the golden Italians, but should have a fine line of glossy black on their outer edge.

The fourth band on many of the bees shows slight traces of yellow on their sides, extending and gradually lessening until on the top there is none to be seen, and, this is as much yellow as any bee should have on the fourth band, in my opinion, to possess the most desirable qualities; the rest of this band is a deep glossy black, with a large ring of light-colored hair. The fifth and sixth bands are of this same glossy black, with the light ring of hair on the fifth.

I find that bees with these markings are large, very prolific, and possess all the desirable qualities of a perfect bee. In short, they have great wintering qualities, are very large, prolific, quiet and beautiful, enter the sections readily, are not excessive swarmers, not disposed to use an excess of propolis, build few burr-combs, and are as fine comb-builders as I ever saw, capping their honey very white.

I would like to hear from others, on this color question in bees. Do not understand me as saying that these particular colors combined are the cause for these superior qualities — I only mean to say that I have observed that bees with these markings seem to possess these qualities in a marked degree, and this strain that I have had under my observation for the past seven years, having always gone ahead of my own bees that have been made up from all the noted strains of this continent, of all extremes of color, only goes to prove to me that there must be something in a proper combination of these three colors.

I think this breeding for extremes of any color by our queen breeders is a great mistake. The more they run to extremes of very yellow or very white or black, the less good qualities they possess. I am well satisfied it results in deterioration in size as well as in many other good qualities and is a failure in getting a beautiful bee."

I could not give a better description of the Italian bees reared in the Bay State Apiary than Mr. Vandruff has done in describing his. I heartily endorse and agree with Mr. V. in all he says concerning the markings of what we call pure Italian bees.

All the desirable qualities of the Italians are sacrificed for color.

Thirty Years Among the Bees.

Below I give A. I. Root's opinion of this book:

"This is the title of a new book, written by Henry Alley, of Wenham, Mass. It contains 80 large pages, and is full of good things. In fact, we are ashamed to say that we did not even know that friend Alley had got his queen-rearing down to such perfection, for this is what the new book deals with principally.

Toward the latter end of the book there are a great many good things; for instance, how to find a fertile queen; how to warm a small bee-room economically; best fuel for smokers, and several other items that smack pretty strongly of long experience."

Brother Root is a little behind the times in some cases. There are, however, upwards of 50,000 beekeepers in the world that discovered the fact that queen-rearing was brought down to nearly perfection at the Bay State Apiary some twenty-five years ago.

A splendid offer.

We have just received from the factory five hundred drone-and-queen traps. If any one is disposed to purchase them at this time we shall sell half dozen in flat, one made, seven traps in all, and give the purchaser an individual right to manufacture the traps for his own use for the small sum of $3.00. If you wish one dozen traps (13) and individual right, we will ship them for $4.00. Those who purchase fifty traps for $10.00 will get an individual right to make 100,000 or an unlimited number of traps for their own use.

Now let me tell you something all of you, or many of you, do not know about; at least nine out of every ten persons do not. Do you know that you can sell any or all the traps you purchase of us in any place in the United States where the territory is not sold? You can come into our town and sell these traps if they were purchased of us in the first place.

Now if we sell you one dozen traps (13) you can sell every one of them for 50 cents each. This will be $6.50. You then have the right to make all you can use in your own apiary.

Those who have an individual right to make the traps, can obtain the material for them from their nearest dealer. A person who owns a right to use and manufacture a patented article has the right to get his goods manufactured just where he selects. So you see it will pay you to purchase an individual right in any case, as by so doing you can more than save the price of it in express charges on one dozen traps.

A Meeting of Beekeepers in New England.

A meeting of New England Beekeepers will be held at Ploughman Hall, 45 Milk St., Boston, Mass., Dec. 13. Mr. E. L. Pratt of Beverly, Mass., will read an essay upon Bee Culture. All beekeepers are invited to attend.

Another bee-paper.

The W. T. Falconer M'f'g Co., of Jamestown, N. Y., will commence the publication of a bee-paper about Jan. 1, 1891, called the "Am. Bee Keeper." Let them come. The more of them the better for all hands except those who publish them.

Gum elastic roofing.

This article is advertised in another column. It strikes me that it is one of the best things for caps of beehives; also for bee-houses. Try it.

They are beautiful.

Fayetteville, Tenn.

Mr. Alley:— Last queen received in good condition. The bees are beautiful—no idlers among them.

Jno. Spiers.

A one-hundred-dollar Italian queen bee.

Bear in mind that each subscriber to the APICULTURIST is entitled to one of the best queens reared from our one-hundred-dollar queen, by remitting seventy-five cents when the queen is wanted.

This queen now has one of the finest colonies of bees we ever saw.

She is strictly pure, good disposition, and working qualities that cannot be excelled by any bees in the world.

To new bee-papers.

THE BEEKEEPERS' ADVERTISER is a four-page quarterly that will be issued from the office of the APICULTURIST. The first number was sent out Nov. 15. This paper will not be sent to our subscribers as it is made up largely from matter taken from the APICULTURIST. We get the names each year of several thousand bee-keepers who do not read the API, and to such the Beekeepers' Advertiser will be mailed. All the yearly ads. which appear in the API will be inserted in the new paper without additional charge. This is one of the best advertising mediums extant for supply dealers.

By this means we shall reach thousands of beekeepers who do not read any bee-paper.

Supply dealers have found that it pays to advertise in the APICULTURIST as our well-filled columns amply testify. We have found that advertisements are read and generally answered by those who send for sample copies. We get calls by each mail for from twelve to fifty copies of the API. We mail them at once. Besides, our friends are continually sending us names of live beekeepers; to such, a specimen copy is at once mailed. This is why it pays to advertise. Hundreds of new beekeepers read the API each week.

Individual rights to manufacture the drone-and-queen trap.

So many beekeepers desire to make the drone-and-queen trap that we shall offer one trap by mail, and the right to make and manufacture them for one's own use, for the small sum of $1.50.

If any one desires to make the bee-escapes, the same as is used in the traps, and the same things as are used for bee-escapes for getting bees out of sections, we can furnish the tools for $3.00 They can be sent by mail for 25 cents extra.

The Beekeeper's Directory.

A new book is on our desk. It is entitled "The National Beekeepers' Directory," and contains a classified list of 2,000 beekeepers of the United States and Canada (including about 200 supply dealers), with essays and hints regarding the successful management of the apiary. It is "compiled by Henry Alley, Wenham, Mass." It contains 140 pages, one-half of which are devoted to names and addresses of beekeepers, and the other half to the practical hints mentioned above, including Mr. Alley's "method for rearing queens in full colonies, while a fertile queen has possession of the combs." Price by mail, $1.00 bound in cloth.—*American Bee Journal.*