



## The busy bee. Vol 8, No 8 August, 1897

St. Joseph, Missouri: Rev. Emerson Taylor Abbott, August, 1897

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Vol. 8.

No. 8.

AUGUST, 1897.



# THE BUSY BEE.

Successor to  
The Nebraska Bee Keeper.

Emerson Taylor Abbott,  
Editor and Proprietor.



Published the 15th  
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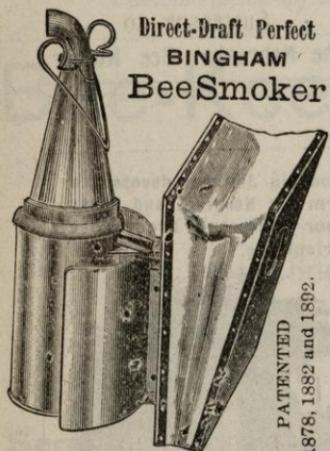
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I have used Bingham Smokers ever since they came out. Working from three to seven hundred colonies twelve months in the year. I ought to know what is required in a smoker. The Doctor 3½ inch just received fills the bill. Respectfully,

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# THE BUSY BEE

Published Monthly.

Vol. 8, No. 8.

ST. JOSEPH, MO.

AUGUST, 1897

## IMMORTALITY.

Joyous I float upon that shoreless sea  
Men call eternity.  
The countless, placid stars inspire in me  
A deep divinity.

Beneath me I can feel the onward roll  
Of aeons numberless.  
About me broods the tender Over-soul,  
Protecting, slumberless.

Before me and behind all darkling lie  
The mists inscrutable  
Of death and birth. Beyond them both  
I fly.

A soul immutable.

O Life, I joy to feel thy mighty thrill,  
Thy keen virility.  
O Death, I wait fulfilment of thy will  
With rare tranquillity.

For endless time and boundless space are  
mine.  
And neither portal  
Of birth nor death can bar the soul di-  
vine  
From life immortal.  
—Frederick L. Wheeler, in Christian  
Register.



## HOW TO USE COMB FOUNDATION.

BY C. P. DADANT.

In my previous articles, I have explained what comb foundation is and its uses. I have shown that it is of advantage to the bee-keeper in three ways, by utilizing the beeswax, which is thus returned to the bees that produced it, saving them a great deal of labor, time and honey; by securing straight combs in the frames or honey sections, and making the hive more manageable and the honey more salable; and lastly, by securing in the hive a greater quantity of worker comb and doing away, to some extent, with the production of drones.

The use of comb foundation is, of course, confined to the movable frame

hive. It would be of no use to the box hive bee-keeper and could not be fastened to the walls of a box hive. But I take it that, at the present day, the box hive bee-keepers are the exception, and it is not for them that I write.

Comb foundation may be given in full sheets to natural swarms, but, in that case, great care should be exercised in fastening it in the frames, as the weight of the bees who will hang on it at their first entrance to the hive, will be capable of breaking it down. For this reason it is well to fasten a few fine wires—galvanized No. 30 is used, either horizontally or vertically—in the center of the frames. The foundation is then fastened on the under side of the top bar by the use of a foundation roller, or, in the absence of this, it may be fastened with but little trouble with a dull knife, as follows: Lay a frame down upon a table, then prepare a thin board half as thick as the side bars of the frame, that will fit loosely inside of the frame, so that in placing the foundation upon it, it will be lying exactly in the center of the frame. Let it project a little over the bevel edge of the under side of the top bar. Then take a small slat, or lath, and lay it over the foundation, so the edge only is uncovered, and press it down on the edge of the top bar with the knife with a quick sliding motion. There is nothing difficult about it, and it is much easier done than explained. If the frame has been wired, a small spur imbedder is indispensable to press the wire into the foundation. A very good method of preparing foundation for the honey season is to insert a frame or two filled with it in the center of a hive containing a strong colony of bees, say during the fruit bloom, removing from this hive any frame of comb that may not contain any brood, and us-

ing the latter in hiving swarms. In this way some very fine combs may be built without any danger of breakage, and the swarms may be hived on the full combs thus removed, or at least partly on such combs and partly on frames containing foundation.

It is wonderful to see how readily the bees accept this foundation and how briskly they go to work upon it, when there is any inducement from the field blooms.

To replace drone combs in colonies that are fully built it is not advisable to use foundation, unless it be to replace a full sheet. Pieces of drone comb, that are found in patches through the hive, ought to be replaced with fully built worker comb, as small patches of foundation would be difficult to fasten.

Foundation in sections is usually put in with the Parker machine, a very simple device. The greatest care should always be employed to place the foundation straight in the center of the frame or section, and it should be pressed on, so as to make a body with the wood, that it may not peel off.

Nothing but the lightest grades of foundation, that is, foundation with a thin septum, or center wall, should be used in sections; for the heavy grades, such as is used in brood combs, would show a thick rib or fish-bone in the comb honey. If the foundation used measures not less than 10 square feet to the pound, it is almost impossible for anyone, except an expert, to distinguish it from the naturally built comb.

I believe that the use of comb foundation by bee-keepers is as good a criterion of the progressive spirit of the age as anything that can be found. The farmer who reads, if he has bees, is sure to have all the latest improvements, and among them are movable frame hives and comb foundation. If he has any beeswax, instead of selling it, he has it made into foundation, and thus saves all that is lost by the rendering up of the beeswax. But the farmer who has no education, who reads nothing, and who keeps bees as his grandfather did, in the old gum, with "luck" for his mot-

to, renders up his beeswax and sells it to the nearest peddler for tobacco or moonshine, and this beeswax is ultimately again sold to the progressive bee-keeper in the form of comb foundation.



### REMOVING COMB HONEY FROM THE HIVE.

*BY A. B. MELLIN.*

A. B. Mellin in *The Pacific Bee Journal*.

After the bees have made a really fine article of comb honey, it is often materially injured by the inexperienced bee-keeper in removing it from the hive and packing it in the shipping cases. The first move in taking off honey is generally to smoke the bees. Smoke is all right, but please bear in mind that a little smoke will drive the bees, while too much only confuses them. I generally blow a little smoke on the alighting board—just enough to divert the guards at the entrance of the hive—then remove the cover, and as I raise the painted cloth which covers the sections I blow smoke across the top of the sections (against the wind if there is any). This allows just enough cold smoke to drift into the sections to send the bees scampering below. Now, turn the super quickly on its edge, so that the wind will blow through the super from the top, as it is set on the hive and, with a Coggshall's bee brush, quickly brush the bees from the bottom of the super into the next one below, or into the hive. In this way nearly all of the bees will be gotten out of the super at the start. Now, pile the supers up six or eight high, if you have that many to take off at one time, and place a double cone bee escape on top of the pile; then just watch those six or eight different families of bees hustle each other out of those sections and make a bee line for their own hive.

While the Porter bee escape works very well on the hive, I prefer the above plan, as it saves one handling of the supers full of honey. Then, again, the honey is all piled in good shape to run into the honey house at sundown. The

cone escapes never get clogged with dead bees or propolis.

I have sometimes noticed a bee-keeper taking off comb honey—and he was old enough to know better—approach the hive and give the bees a drastic smoking at the entrance, thereby driving a large portion of the bees into the top super. Then he would yank off the hive cover with a snap—a cloth on top of the sections was only a nuisance to him; then in went another deluge of smoke, among the white capping of the section honey. Next, off came the super of honey, just boiling full of bees. He then tried the "shake out" process, generally accompanied with a sort of war dance, with exclamations that sounded like "bad Injun" talk. The super would then be set up edgewise on the ground, while the nozzle of the smoker was applied to the openings on one side, while the bee brush got in its work on the other side, and the apiarist (?) pumped smoke through nice, white honey, until it looked, tasted and smelled as if it had been the very last thing rescued from a burning barn.

There are some good points in the above, but most of the readers of The Busy Bee will find the Porter escape just the thing they need to get the bees out of the supers.—Editor.



#### KEEPING DOWN GRASS AND WEEDS.

One of the most common things to be seen in many apiaries at this time of the year, where the hives set within a few inches of the ground, as all hives should, is grass and weeds growing up in front of the entrance, with the bees heavily loaded with honey or pollen, struggling to reach the hive, first with the wings, then on foot, then taking wing again, or crowding through a tangled mass of stuff that they may reach home with their precious loads, the result often being many loads of pollen left behind when at their very door. This not only causes them much extra work, wearing their precious lives out much sooner, but it is a waste of time

to them, often amounting to nearly a pound of honey each day, as I have proven to my satisfaction with hives and scales, putting an obstruction before the hive one day and taking it away the next. To be modest, call the average loss only one-half pound, and we have 50 pounds as the loss in an apiary of 100 colonies. This, at 10 cents, equals a loss of \$5 a day for every day that grass and weeds remain during the honey flow, to say nothing about the shortening of the lives of the bees, their inconvenience, etc. Reader, think it over, and ask yourself if you can afford it. If not, go right out at once and remedy this matter.

Many ways have been given in the past for keeping grass and weeds down in the apiary, such as keeping sheep or horses there, so they can eat it down; using a lawn mower, etc., all of which require constant cutting off of whatever grows; but I prefer something more permanent than this, and where possible, something which will stay year after year. The first, and probably the best of anything, where it can be had, is sand or fine gravel, but on to such a depth that grass and weeds will not grow up through it. This matter is helped very much if the sward on top of the ground is taken off before the sand is put on.

Next to the above, comes coal ashes, which can be readily saved for this purpose where the family or any near neighbor burns coal for fuel. As there is little fertilizing matter in them, they are rarely used for anything except to be dumped in the road or drawn to some out-of-the-way place and dumped, so there need be no expense to the bee-keeper except the hauling. The ashes are used in the same way as the sand, and if a quarter in bulk of sand is used with them, the whole will harden down quite solid in time from the storms beating on them.

Next to these comes a piece of pine or hemlock board, or any lumber which will last well on the ground. To keep this board from curling up under the sunshine on one side and dampness on

the other, it should be cleated on each end as the hive-covers are, and if properly done, it will not curl enough to be unsightly.

"Whatever is used the alighting-board should rest on the material, so there is no vacant space for heavily laden bees, which fall short of the entrance, to drop under, where they will often chill and die on cool days in early spring by the score and hundred. A bee will crawl up an inclined alighting-board to the hive when it is so chilled that it cannot fly, and each bee in early spring is worth a hundred or more after the honey harvest is past.

If you do not wish to fix your hives thus till fall or early spring, keep the grass down from now on during the summer with a knife, sickle or scythe; anyway, so that the bees do not keep struggling with the grass nuisance any longer.—Doolittle in *Progressive Bee-keeper*.



#### KNOWING HOW TO DO THINGS.

Bro. Root, the senior editor of *Gleanings*, touches a point in his "Home Talks" in the July 15th number, to which I wish to call special attention, for it is an idea which cannot be repeated too often. He suggests that the reason why so many people fail in their undertakings is that they go about their work half-hearted or else do not do the work as it should be done. Here are a few of the illustrations which he uses. He says: "I once sent out two old farmers into the field to use a Meeker disk harrow. They drew it around the lot almost half an hour upside down, without ever looking at the directions securely tacked on the machine, telling how to use it." Again, "A week ago the man who runs the Planet cultivator told me he could do ever so much better work, and save his strength at the same time, if the handles of the cultivator could be raised." "Why, Mr. B., this cultivator is made just on purpose so you can raise or lower the handles to any point you wish." "Well, I sup-

posed that it was made in that way, but it is not." I took hold of the wrench, got down on my knees in the dirt, and I did see. What do you suppose I saw. Why, I saw that, when the cultivator was set up four or five years ago, the man who put it together put a certain casting on upside down; and in all that time, the men who had used that cultivator had been annoyed and hindered in their work summer after summer. Not one of them had, until this present time, informed me that the cultivator as it was could not be made to do its best work. Why didn't some of them talk to me as I came around, and tell me about it?

"A few days ago our young chickens were going, one every night. After a brood of eleven had gone clear down to three, I began making a stir in the neighborhood. About a week before, Mrs. Root had befriended a 'tramp' cat. After the cat had been fed and made at home—that is, when she became sufficiently acquainted—she brought forth from their hiding place four bright kittens, one after another. I soon decided that the tramp cat was responsible for the loss of the chicks; but the whole family said I was mistaken, as she was so kind and gentle, etc. Finally the teamster said one of the men who was mowing the lawn told him he saw the tramp cat with one of the chickens in her mouth. This was probably one of the first of the eleven. I passed the man ever so many times a day, and he could not scrape up energy enough to tell me he saw the cat that was taking my chickens one by one. I questioned him about it, and remonstrated because he did not tell me at once, instead of telling somebody else; but he had nothing to say. After the cat was killed (not before), he volunteered the information to Mrs. Root that it was not the cat that had the four kittens, at all. It was a yellow cat that he saw with a chicken in its mouth. According to this I had killed an innocent cat, and left her four 'orphling' kittens to get along the best they could.

"Now, a few chickens and a cat are trifles, I know; and perhaps I should

not mention them at all were it not that I am expecting some choice Minorcas to hatch some time this week, and I do not propose that one of them shall be taken off every night, by considerable. As I said, chickens and kittens are but trifling matters; but we have more or less the same state of affairs all over our establishment. In one of our elevators belting to the amount of almost a hundred dollars has been destroyed because we could not get the men who use the heavy freight elevator to pull the lever clear up sharp either to one side or the other. When the lever was left pulled part way the belt was burned, so a new one had to be put in its place. It would be exceedingly convenient with our freight elevators to let each man who is moving freight handle the elevator, but we had to give it up. Two men have now the elevator in charge, and a sign announces that they must be called whenever it is to be used. The whole great business world realizes how hard it is to find men who will learn all about the business they are connected with, and make it their study to save their employers from loss. With almost a world full of people wanting something to do, men who will think, act, and talk so as to save loss are always hard to find."

A case in point from my own experience: I got overheated from superintending the unloading of a car of goods simply because it was impossible to hire men of more rugged constitution whom I could trust to check the goods out and place them in the depots and store room where they should be and as they should be. I was in bed about two weeks, and the weeds began to get high in the garden. I said to my wife that she would better have the young man who works for us, and who has been with us quite a time, pull up the large weeds. He is a good fellow and grew up on a farm. What was my dismay when I got able to get out to look at the garden to find that he had not only pulled up the weeds, but my "husk tomatoes," with which I had taken a great deal of pains. Worse yet, he piled the weeds on my

row of celery, as though he thought that was weeds, too. I presume it is not necessary to say that I went into the house a great deal out of patience, and when my wife came home from the store I said to her: "Is there anybody you can hire that you can depend on every time to do the right thing? If there is, I would like to find him."

I spoke to the young man about it, and all he said was, "I thought they were weeds," and that was all there was of it. He did not try to explain why I would take so much pains to hoe weeds, or even say he was sorry. You would not hire such a man? Well, where would you go to find a better one?

"I thought they were weeds" has lost many a dollar for those who employ labor, and is the explanation of why so many are out of work. What the world needs is men and women who know how to do things, and are willing to do them. Bro. Root well says, "There are illustrations all about us, showing what energy, perseverance and vehemence will accomplish. There are also illustrations all about us of the result of letting things drag, and go as they happen. Shall we get along through life contriving to get rid of the precious hours God has given us, with the least possible exertion or trouble, until we slip into our graves? Or shall we stand up like Christian of old, with our armor on, and rebuke sin and sloth and half-heartedness at every turn?"



The man who gets up early in the morning may be all right, but the one who is widest awake after he gets up is apt to get ahead of him.—Campbell's Soil Culture.



#### Tin Pails.

Prices on tin pails vary according to the make, but I can get them for you as cheap as you can get them any place. Write for prices.

## AGRICULTURAL EDUCATION.

## Should be Taught in the Common Schools.

By Emerson T. Abbott, St. Joseph, Mo

[Continued from Last Month.]

I have already suggested that it is taught in some, if not all the public schools of Germany, and I believe it is also taught in France. It is taught in a number of the public schools of the province of Ontario, in Canada. Professor Shaw, to whom I referred above, late of Ontario, but now of Minnesota, writes me, in speaking of a text-book of which he is one of the authors: "The 'First Principles of Agriculture' is taught to a considerable extent in the rural schools of Ontario, but in these it has not been made compulsory to teach agriculture. The majority, therefore, of the teachers are opposed to its introduction, since the course of study is already crowded." I apprehend that we would find the same opposition here. The subject has been agitated some by Secretary Rippey, of Missouri, and it was discussed at about forty institutes in the state last fall and winter. I have met with a favorable reception in almost every case where it has been presented at an institute in Missouri. This study was introduced into the schools of Ontario in 1891; so you will see that Missouri and Kansas will have to blaze the way largely for themselves, if anything is done in this direction; but this is no reason why we should not take up the good work and set an example for others to follow.

The subject has been brought forward for discussion for a number of years by Professor Voorhees, of New Jersey, and Dr. Galen Wilson, of New York, and it has been discussed in other states, but none of them have as yet succeeded, as far as I can learn, in getting agriculture taught in any of the public schools of these states.

## Some of the Drawbacks.

1. Lack of interest on the part of directors and parents.—I look upon this as the first difficulty which we should attempt to overcome, and I hope the discussion of the subject at the institutes and other rural meetings may go far toward awakening an interest in the subject, and that directors and parents will no longer remain indifferent to it, as it seems to me of vital importance to the future prosperity of agriculture. So far as my own experience goes, the lack of interest on the part of the parents is due entirely to the fact that they have never had their at-

tention called to it. One man, in Missouri, who was very enthusiastic over the subject after having heard my speech, said to me: "Mr. Abbott, I have heard speeches for forty years, and this is the first time I ever heard a man say anything about the importance of agricultural education in the public schools." He could not be accused of indifference, for he had never thought anything about it. I apprehend this is true of very many.

2. Lack of competent teachers.—Here is another difficulty which I think can be overcome by a proper discussion of the subject. Just as soon as it is understood that those who teach in the public schools will be expected to know something about the elementary principles of agriculture, the pushing, enterprising teachers will at once put themselves in a way to obtain the necessary information. I have faith in the intelligence and integrity of the teachers of the country, and I think they do a high grade of work considering the pay they get for it. Just as soon as they understand that they will be expected to take up this new work and are made to feel that they will be properly paid, and their work will be appreciated, I do not think there will be much trouble about competent teachers. Of course it will take a little time for them to adjust themselves to the new condition of things, but this adjustment will have to take place after the demand is made, and not before. I might say just here that we need not expect very much extra work from our teachers until they are a little better paid. I see that your governor says that the average pay per month for men for teaching, in the state of Kansas, is \$43.82; women, \$35.58. Counting nine months for a school year, the average yearly pay for men is \$394.38; for women, \$320.22. The query arises, Why more pay for men than women, if they do the same work? And why should teachers, who as a general thing are the equal in intelligence to the county officers, work for this mere pittance when the latter are paid from four to six times as much for their services? Echo answers, "Why?" The average pay of a teacher in Kansas, and she pays more than many other states, would not hire a second-rate constable.

3. Lack of proper text-books.—I do not know as this should be mentioned any more as one of the drawbacks, as there are now published a number of books which I think might be used to make a beginning. There is the "Elements of Agriculture," by Professors Shaw and Mills, which is published in Canada and sells in this country for fifty cents, which would not be so badly

suites for a text-book in the public schools. Perhaps it would be open to the objection that it was written from the standpoint of a foreigner, and for that reason not so fully adapted to American agriculture. This cannot be said of the book of the same name by Professor Voorhees of New Jersey, as it was written by an American for Americans, and seems suited for the purpose for which it was intended. The introductory price of this book is seventy-two cents. There is another book entitled "Principles of Agriculture," by Winslow, which sells for 60c, that could be used to good advantage to form the basis of lessons in the elements of agriculture in the public schools. There may be others of equal value with which I am not familiar.

It seems to me that all these drawbacks can be overcome, if we create a proper enthusiasm. It has been said that the education of the men who are to do the work of the new epoch must not only train and teach them, but must fill them with that interest and enthusiasm which engenders love. Now, if we can create in the hearts of the people a new love for the pursuit of agriculture, and change the drift of young men and women from the city to the country, we will have gone a long way toward overcoming all of these obstacles.

Voorhees says: "The whole matter of the arrangement of details, both in be very easily managed without any additional expense if the line of work was once taken up in earnest. In my opinion, it hinges entirely upon the question as to whether the farmers, as the most directly interested parties, and who have it entirely in their own hands, so far as the country districts are concerned, will that agriculture shall be thus taught; whether they desire that the coming generations of farmers shall be ignorant of the constituents of soil that they daily tread under their feet, or whether they shall know what makes it soil, and what agencies to put in motion to make it yield an abundant harvest; whether they shall be ignorant of the very beginnings of their calling, or whether they shall know of the processes involved in the transformation going on about them when organized atoms in the atmosphere and soil are converted into organized structures, the plants, and when these again are disorganized and re-organized into animals—in other words, when the secrets of nature, involved in the formation of the soil, the plant, and the animal, so far as known, shall be an open book before them."

#### Objections Offered.

One of the main objections offered

against the introduction of agricultural studies into the public schools is that we have no right to legislate in the interest of a class, to teach any trade to children who do not want to learn it. If all education were confined to the mere learning of facts, then there would be some point to this objection. But, if I should grant that this point was well taken, there would still be an abundant room for argument. We educate for two purposes, or, in other words, education is made up of two prominent elements, leaving out the moral element, without which all education will prove a failure. One aim of what we call an education is to gather facts for future use; the other is the development of the mental powers. The arm grows strong by constant use, properly regulated. The mind does the same thing, and this element of education is just as important as the accumulation of facts. In fact, more so, for a weak mind cannot retain and use very many facts to advantage.

It seems to me that there is about as much intellectual drill in learning the facts about the growth of plants as there is in learning how many troops there were in Hannibal's army, or Grant's either, or how many battles he fought, or how many were killed in each battle. There is just as much intellectual drill in learning how to graft and prune a tree or vine, or how to conserve the moisture of the soil, as there is in learning many of the facts of political geography. Then these things relate to the future occupation of the pupil, which is not true of a vast deal of the information obtained in the schoolroom which has no practical bearing on the every-day affairs of life, and, as Herbert Spencer says, "An immensity of information that has a direct bearing on the industrial activities is entirely passed over." Now, if there is just as much intellectual drill to be obtained in the study of these practical matters, why not teach them to all the children of the public schools?

Mr. George Morrison, who is said to have built no less than six bridges across the Mississippi and Missouri rivers, in speaking of what he calls the "new era" in education, says: "The old education is based upon a knowledge of what has been done. The new education cares but little for what has been done, providing no one ever wants to do it again. The men who are to make the records of the future must know how to investigate and how to work themselves, rather than know what work other people have done." The application of this rule, it seems

(Concluded on Page 15.)

**THE BUSY BEE.**

A Monthly Journal Devoted to Farm Bee Keeping and Other Minor Interests of Progressive Agriculture.

REV. EMERSON TAYLOR ABBOTT,  
Editor and Publisher.

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**REMITTANCES**—Should be made by express or postoffice money order when it is possible. If these cannot be obtained, put the money in a letter and register it. Never send money in a letter without registering it. When forced to send stamps, we prefer to have one-cent stamps, and they should be folded carefully with paper between them so they will not stick together.

**COMMUNICATIONS.**

The Editor solicits communications on the subjects treated in this paper. All such will receive careful attention and be given a place in the columns of the paper, if the Editor deems them of sufficient interest to the general public to warrant their insertion. Write on one side of the paper only, as plainly as you can. If you have something of real interest to communicate, do not refrain from writing simply because you think you may not be able to clothe your thoughts in proper language. Tell what you know the best you can, and the Editor will look after the rest.

**Editorial.****Bee-Keeping for Everybody.**

Mr. Hasty says in the Review: 'The Busy Bee, successor to The Nebraska Bee-keeper, is none the less a new paper from picking up the shoes of a defunct one. It is in fact the most decidedly new paper that has appeared for a

long time. If it carries out its announced programme it will have not only a field of its own, but enemies of its own, and lots of them. Any old paper that should undertake to cover adequately the same ground would encounter an ugly tornado of protest from its professional patrons—they some years ago agreed that "contraction" was the only proper manipulation in bee culture. But lo, here comes a baby under the banner of expansion, inflation, bee-keeping for all creation, and proposes to devote itself almost exclusively to the enlistment and upbuilding of beginners. I for one am glad of it. The close communionism of our craft has an ill look. This is a free country. Let the hard shells have their papers; and let there be at least one able paper on the line which used to be popular in this country, and is still popular in Europe—bee-keeping as a delightful way to get acquainted with nature, and earn something, too, and make the table a little less bare."

Just so! But why should The Busy Bee have any enemies for advocating what it believes to be true? Are not the farm bee-keeper and the beginner entitled to some help if they are willing to pay for it? The specialists only number a few hundred, while those who keep, or should keep, bees on the farm are legion. If this is ever to become a land "flowing with milk and honey," especially the honey, the fact must be recognized that beekeeping is a branch of agriculture, and it must receive every encouragement possible with that idea in view.

Enemies or no enemies, The Busy Bee is set for the defense of farm bee-keeping, and will be edited exclusively with that idea in view. Yes, sir, "bee-keeping for all creation," if all creation want to keep bees! The farmer has a right to some of the sweet things of life, and it will be the aim of The Busy Bee to teach him the best it can how to secure and enjoy them. This is emphatically the beginners' and farmers' paper, and to such it looks for its main support.

**Simply a Good Rake.**

It is often asked what is a good business to follow along with bee-keeping? I generally answer this question by saying in a word, "farming," but I am aware that some who keep bees are so situated that they cannot engage in farming, but most of them can at least have a small garden. The editor's farm at present is only 62 1-2 by 140 feet, but he gets a deal of satisfaction out of it, and hopes to be able to have more dirt than this which he can call his own at a very early period.

I started out to write about a rake, and I will return to my subject. There are only a few people who, I apprehend, know the real value of a first class rake in a garden. There was a time when I thought a hoe was the indispensable tool in the cultivation of a garden, but I have changed my mind. If I had to be confined to the use of two tools in the cultivation of my garden, I should select a good garden fork and a fine, sharp steel rake.

By the way, a garden should never be plowed, if we want to secure the best results. It should be forked, as this leaves the ground in the proper condition for the conservation of the moisture, which is everything in the production of a crop of vegetables. Having forked up the ground thoroughly about nine or ten inches deep, it should then be thoroughly raked, and then raked again. As soon as the crop is planted, rake it again. If it rains, get into your garden and rake it thoroughly just as soon as the ground is dry enough not to bake on top. If it is very dry, keep the rake going every day. If you have to use the hoe to cut out a few weeds, follow every hoeing with a thorough raking.

Rake the potatoes from the time they are planted until the vines have so covered the ground that you cannot rake any more; rake the beans; rake the peas; rake the onions, rake everything until you have a dry dust mulch about an inch thick all over the top of your garden. Wet or dry, hot or cold, there is nothing like a good, sharp rake in

the garden. If you have never tested it, you have no idea how much merit there is in a simple rake. If you do not believe me, buy a good one and try it—simply a rake.

**Publishing Dead Beats.**

The publisher of The American Bee-Keeper says he has about made up his mind to publish a list of the people who deal with them and will not pay their debts. I can see no reason why he should not; for, if a man will not pay a debt which he has contracted, or pay any attention to the man whom he owes when asked as to when he can meet his obligations, he deserves to be published. I am not so sure but what a paper owes it to the community to let people know who the "dead beats" are. But, brethren, I can suggest a better method; adopt the cash system and let your motto be, "Money or no goods." As to the paper, when a man's time is out stop it, and only send it to people who are willing to pay for it in advance. The Busy Bee could not publish a very large list of "dead beats," for if there are very many of them in this part of the country, we do not know it, as circumstances compelled us when we began business about fourteen years ago in this city to sell for cash only, and you can generally count the people who owe us anything on the fingers of one hand. From this time on you will not need any fingers at all to count them, as we have fully made up our minds not to fill any order to a consumer which is not accompanied by the cash. I wish all the rest of the dealers in the United States would adopt the same method of doing business. Debt is the curse of this country, and ruins hundreds of families every year, and the sooner it is wiped out of our method of doing business the better it will be for the poor man. The rich can stand it all right, but it is death to the poor man to owe or to have anyone owe him. Let us pay as we go, or not go.

**To Our Exchanges.**

I desire to call the attention of our exchanges to the fact that we are entitled to credit for articles which are reproduced from our columns. A few days ago we received copies of a Denver paper, edited by a man who prides himself on his effort to "boil things down," and I have thought on his superior wisdom in knowing just how to run an agricultural paper, and the first thing that I saw was an article which he had "boiled down" from the columns of The Busy Bee, and not a hint of a credit. Now, if the agricultural papers want live, up-to-date bee matter, they will find it in The Busy Bee, and all she asks is that they give her due credit, and send the information out among their readers, and let it do all the good it can for farm bee-keeping.

I want to say further that all matter that appears in this paper to which no name is attached is original matter, and has been written by one of the editors. We do not pick up "floating material" and use it without giving anyone credit. So, if you find anything of value in our paper, you will know who is entitled to the credit.



Send in your subscription now. Remember, this paper is published in the interest of the beginner and the farm bee-keeper, and to such we look for our subscribers. You can aid us materially by sending in your name and 50 cents today.



You need a bee escape and board to get your bees out of the supers. They will cost you only 35 cents, and will save you a deal of trouble and worry. If you undertake to smoke the bees out of the supers, they will cut the cappings and spoil your fine white comb honey.

**60-Pound Square Tin Cans.**

One box of 2 cans, 75 cents; 1 can, boxed singly, 45 cents. Write for prices on larger quantities.

## Home Department.

Conducted by Emma Ingoldsby Abbott.

This page is open to all lady readers of the Busy Bee. Any woman who has found anything helpful in her work is invited to give others the benefit of it through these columns.

**THE SMILING WOMAN.**

It is easy enough to be pleasant  
When life flows by like a song;  
But the woman worth while is the woman  
who'll smile  
When everything goes dead wrong.

For the test of the heart is trouble,  
And it always comes with years;  
And the smile that is worth the praise of  
earth  
Is the smile that smiles through tears.

—Ella Wheeler Wilcox.

**Rendering Beeswax.**

Many who have only a few bees and do not own a wax extractor miss one of the sources of profit in bee-keeping by not saving the odd bits of comb and the old combs that are no longer of any use to the bees. Have a receptacle into which all such may be thrown until the end of the season, or until there is sufficient to make a good sized cake of wax.

Some day when you have a fire in your cook stove, and will not have use for the oven, tie these pieces of comb up in an old cotton cloth. Place in the oven a tin or granite iron pan with about an inch of water in it; lay two slender sticks across the pan, and on them the cloth containing the combs, in such a way that it will not dip down, into the pan, nor drip outside onto the bottom of the oven; shut the door and go about your work.

Take a look at it occasionally to see that all is going well. The temperature of the oven should be moderate. If the water boils, it is too hot. Regu-

late the fire or dampers, or leave the door open a little way. The heat should not be great enough to scorch the sticks or cloth.

When the wax seems to be all dripped into the pan, remove the sticks and cloth. If possible, let the fire die out, shut the oven and leave the pan of wax to cool in the oven. This will insure a slow and even cooling of the wax, and will allow the dirt that may have filtered through the cloth to settle into the water in the bottom of the pan. But if the fire is used for other purposes, remove the pan carefully and steadily, cover with a tin pot cover, a board, or anything that will lie closely over it, but will not touch the wax; then place over all an old blanket or quilt, folded several times, and tucked closely around the pan, to prevent the heat from escaping too fast.

On this, more than any one thing, depends the quality and appearance of your wax. If it cools too rapidly, the particles of dirt, propolis, and honey will be caught in the mass, giving it a sticky feel and a mottled appearance. If the surface hardens too quickly, it will crack open as the inside cools.

Do not uncover until the pan is no warmer than your hand. When the cake is thoroughly cooled, it will loosen from the pan easily, but if you attempt to get it out before, even though the wax seems hardened, you will not only have your trouble for your pains, but you will realize as never before, what it means to "stick as tight as beeswax." Scrape off with a caseknife whatever settling are on the bottom of the cake, and you should have a clean, clear, smooth cake that will bring the highest price in the market.

If, for any reason, the wax is not satisfactory, the cake can be broken up, tied in a clean cloth, and put through the same process again.

If it is desired to make small cakes, pour from the pan, while hot, into cups or metal molds and cover closely.

Here are a few don'ts to hang on the walls of your memory when rendering wax:

Don't allow the wax to come in contact with iron, as it will blacken the wax.

Don't grease the molds. It is not necessary, and injures the appearance of the wax.

Don't move the molds before the wax cools. The wax that slops on the sides will harden there and give the cakes a ragged look on the edges.

Don't let the wax boil. This tends to make it brittle and crumbly.

Don't spill any melted wax on the floor. If you do, you will be sorry.

Don't spend precious time trying to scrape and scour off any wax that may stick to the pan, but take it out doors, away from the fire, and apply a little gasoline. It acts as a certain brand of pills are said to act on a weak stomach—like magic.

Don't rush off to town and sell it to the first bidder. Begin now to watch the market reports. The price of wax fluctuates with the change of seasons, and you can soon learn what time of the year it is highest. Then sell.

These directions are for those who have only a few pounds of wax to be rendered. A large quantity would, of course, have to be handled differently, but for small lots I prefer this method to any I have ever tried.



If a woman rises at 5 o'clock she should sleep during the afternoon. A woman shouldn't be ashamed to say she is tired. Horses get tired and need rest. The wise woman who has some respect for her health rests often and long. It is the woman who keeps going all the time that is foolish. Let things go occasionally and rest. A rested woman is not apt to be irritable. A weary, draggled woman makes one feel like a villain. She is capable of giving the whole family the blues as well as a blowing up. Her activity is not always appreciated in this world. She makes things too hot.—Beatrice, in Campbell's Soil Culture.

## Letters from the Field

Chillicothe, Mo., July 17, 1897.

Editor of The Busy Bee:

Allow me to thank you for the May and June numbers of The Busy Bee, which you kindly sent me. I prize them very much, for the savor of progressive industry.

The season here so far for bees has been good. We had an abundance of white clover, and it was rich in nectar and the bees stored honey very fast. My first swarm came off May 18. My last one July 5, having two swarms in July. We have a good prospect now for forage from Spanish needle, buckbush, smartweed, goldenrod, and other flowers, but Spanish needle stands at the head here as a honey yielding plant. Smartweed, buckbush, vervain, aster and buckwheat each yield honey quite freely, yet they cannot be depended upon to give a fall surplus, as can the much prized Spanish needle. The bees are yet working on white clover. I think The Busy Bee is up-to-date and is full of life and vigor. The present indications are it will live and continue to spread an educational influence for some time to come. I guess it's kind editor is no drone. In the June Bee the editor gave directions for introducing queens, which is new to me, and I don't see why it is not practical. If it is, it is better than the old ways, for the reason that it will save the loss of time incurred between the time of removing the old queen and introducing the new one, which time can be readily utilized by the new one in laying eggs, the object sought after, I believe.

I am glad The Busy Bee intends to teach agricultural education, for there is much need of it. Agriculture could and will be carried on in a much more practical and scientific way than it now is, and in a few years hence I think we

will see as much produce grown on one acre as is now grown (in a general way of farming,) on three or four acres, and with as little or less labor. The ability of the soil to produce under proper conditions is but little understood as yet, and if our schools in rural districts would adopt agricultural education, and teach it with as much energy as they do geography, the children would learn less about rivers, lakes, etc., of distant lands, which will never do the majority of them any good. The lessons taught in agriculture could be put in practice any time. Very truly,

FRED S. THORINGTON.



Baxter Springs, Kan., July 14, 1897.

Mr. Emerson T. Abbott:

Dear Sir—We received the return of our letter to which you have added a p. s. This is a free country, and you have a right to do with your goods as it best pleases you. The cash on receipt of goods will buy them anywhere, and as you have no commercial rating and give no reference, your circular shows that you have no bank account, or else you are very ignorant, as you say you are compelled to pay exchange for collection. They won't charge you for collection if you do business with the bank. I have not paid a cent of exchange for twenty years, and the banks of your town have cashed checks of mine for thousands of dollars without charge. You will please cancel the order. I would not buy goods and take the risk of advancing the money. Yours for success,

O. N. BALDWIN.

Tootle, Lemon & Co., Bankers.

St. Joseph, Mo., July 10, 1897.

Emmerson T. Abbott, Esq., City:

Dear Sir—I would call your attention to the following rule of the St. Joseph Clearing House Association, governing charges on country checks. Said rule is as follows:

"On all items, except as hereinafter specified, credited or cashed for city customers, whether individual, firm, bank or banker, trust company or other corporation, charge shall be made of 10c

per \$100 or fractional part thereof, and no single item for less than 10c. Checks or bank drafts on St. Louis, Chicago, New York, Boston, Philadelphia, Washington, Buffalo, Baltimore, Cincinnati, Louisville, Cleveland, Kansas City, Omaha, Leavenworth, Atchison and Council Bluffs may be taken at par. Upon all items drawn upon points in New Mexico, Arizona, Nevada, California, Oregon, Washington, Idaho, Montana, North and South Dakota, Utah, Colorado, except Denver, Texas and all southern points except New Orleans and Memphis, charge shall be made of 25c per \$100 or fractional part thereof. Items from Denver, New Orleans, and Memphis shall be charged upon at the rate of 15c per \$100."

Very respectfully,  
GRAHAM G. LACY, Cashier.

I publish the above letters to show the folly of jumping at conclusions, and also to call attention to the fact the payment of exchange is either a heavy tax upon any firm which does business by mail, or else the customer pays the exchange when he does not know it by having it added to the price of the goods. It will be seen from the letter of the bank where I have done business for a long time that, if Mr. B.'s private checks have been cashed in this city for the amount he names that some one has paid considerable of money for exchange. Now, is it fair to expect business men to pay to collect your paper? This may do in some businesses, but it will not do in ours, the profits are too small. So when you send an order for any bee supplies be sure and send something which will bring its face in the city where the man lives to whom you send.

As to the reference to my personal responsibility, I have only this to say: Consult the bank where I do business, or Bradstreet's agency of this city. A clean record of thirteen years in business in a city should constitute a guarantee that a man would get what he ordered or the money promptly. Our terms are, cash with the order, and I am not looking after any other kind of business just now.

EMERSON TAYLOR ABBOTT.

Mandeville, Jamaica, W. I.  
Editor of Busy Bee:

Kindly send us a copy of your paper. I see a notice of it in all the bee papers. You are well known to us through the bee papers. Fraternally

JAMAICA BEE SUPPLY CO.  
July 30, 1897.



## AGRICULTURAL EDUCATION.

(Concluded from Ninth Page.)

to me, would greatly simplify our educational system.

Bearing what I have said in mind, one can readily see that a little agricultural education would not come amiss to the preacher, the lawyer, the doctor, or even the business man; so it cannot be excluded from the public schools on the ground that it would benefit only a few. As an exercise in mind drill I am sure it would benefit all, and the laws governing scientific agriculture are of such general application that they will be found useful in any trade or profession. I want to guard against being misunderstood just here. I am not opposed to what is called a higher education and do not wish to speak lightly of any man's attainments. Get all the education in every department of knowledge you can, but do not lose sight of the fact that a large proportion of the children in rural district schools have their educational advantages confined to the public schools. Then, again, we should not forget the fact that there are today agricultural colleges in the land, and it is but fair that some of the early education of farmers' children should point toward the higher agricultural schools, and not entirely to the academy, the literary college or the university in its narrower sense.

Another objection which has been offered is that the schools are overcrowded now. I have already suggested a way by which this may be overcome, namely, by omitting some of the things which have no bearing on the practical affairs of life. It is not incumbent on the rising generation to learn all that we have learned! They can no doubt drop out some things and be none the worse off.

Teaching the elements of agriculture in the public schools would not only benefit the future owner of a farm, but would add to the value of all farm labor, and thereby increase the sum of human happiness.

### How to Make a Beginning.

If the patrons of any public school

who are engaged in rural pursuits would take an interest in their school, they could, by a very little effort, set the ball rolling in their own community in such a way as would not only benefit that one neighborhood, but all those around it. It would cost but little to furnish a school with a small agricultural library, which would prove a great benefit to both teachers and pupils. Get such books as I have mentioned above, and also: How Crops Feed and How Crops Grow, by Johnson; Moths and Butterflies, by Julia P. Ballard; Domestic Animals, by Prof. Shaler; Our Farming, by T. B. Terry; Practical Flora, by Prof. R. O. Willis; Langstroth on the Honey-bee, by Dadants; The Soil, by Prof. King; Law's Veterinary Adviser; Barnard's Talks About Soils; Harlan's Farming with Green Manures; Smith's Economic Entomology; Aikman on Milk; Advanced Agriculture, by Webb.

This list might be greatly extended by consulting with the dean or president of the agricultural college, and others who are acquainted with the best books on rural subjects. The money to purchase such a library could be easily raised by the school itself, by giving a few entertainments and charging a small fee of admission, letting it be known what the money was to be used for.

There is one book to be published soon to which I desire to call your attention. It is a reading book of the fourth grade which is being prepared by Prof. Hays, of the Minnesota experiment station. He writes me that one-third of the book is his own copy, and it treats of practical agricultural subjects; one-third has been written by teachers of agricultural and domestic science; and the other third is made up of poems relating to farm life. I look forward to the publishing of this book with great interest, for it seems to me to be a very important step in the right direction.

Why not learn to read and at the same time learn some of the important facts of life? Can a child learn to read any better droning over the lines of

"The boy stood on the burning deck" or "Rienzi's Address to the Romans" than he could by reading about the interesting facts which have a bearing on rural life? I hope this reading-book will find its way into all of the country schools as soon as it is published.

Lastly, a wide-awake teacher might start this work by spending a few moments each morning in a practical talk to the children about the soil, how made, rich and poor; plants, how they are propagated, how they draw nourishment from the air and soil, etc.; hints

on feeding, rotation of crops, poultry raising, bee culture, etc. The children could be encouraged to plant and care for a few trees in the yard; and why not grow a few vegetables and flowers during the spring and summer months, and learn about them? Children readily take to all such things, and the benefit which it may be to them in after-life is hard to estimate. By all means let us have the elements of agriculture taught in our public schools.

In conclusion, I might suggest to the lawmakers of the country who are thirsting for glory that here is an open field, and a splendid opportunity for them to have every farmer's son and daughter in the land rise up and call them blessed. I trust a hint to the wise will be sufficient.



## Poultry Notes.

### Chicken Chatter.

If kerosene is applied in the morning the roosts will be all right by night.

If beginning in the poultry business be sure you get healthy stock or eggs from healthy stock.

Ten or twelve hens well cared for will furnish more eggs than double the number of the same breed uncared for.

Like every other business, poultry keeping must begin in a modest way and increase as circumstances warrant.

Though a pound of bone will give as good results as four pounds of corn, we are not to infer that nothing but bone should be allowed. Give grain and green food, but make the green bone a part of the ration also.

Confinement is not injurious to poultry provided the hens are kept at work. If at liberty and well fed fowls will not roam and search for food. There is no reason why fowls should not be kept in good laying condition inclosed with fences if their wants are satisfied.

It will pay the poultryman to properly care for the eggs and not permit them to remain longer than a day in the nest. They should be gathered daily

and stored in a dry place where the temperature is about fifty degrees; and if intended for hatching should be gently turned once a day.

The wealth there is in the poultry business is wonderful. Every farmer should be anxious to have his share of this surplus. Business methods will help to do it, but the usual neglectful manner of caring for the flock will always bring but meagre results. Try the business system with the farm flocks for one season.

When the weather is warm use plenty of whitewash around the interior of the henhouses, roosts and nests. A good plan is to whiten up everything about the poultry quarters every month during the spring and summer. A white building is far more attractive than a dingy one. The fowls like it, and this alone is a good reason for keeping it so.

Laying hens should be given plenty of meat. Fowls that have their liberty do not require as much meat as hens that are confined, as they pick up many insects, bugs, etc. However, it will be found that two or three feeds a week of fresh, juicy, lean meat will give tone to all poultry, causing them to appear brighter and more healthy, and the eggs will be more abundant.—The Feather.

### It Never Pays.

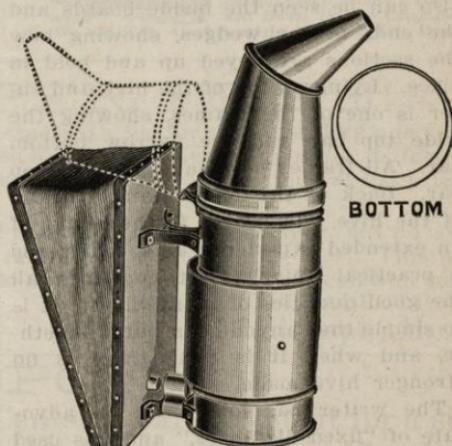
Never forget this in poultry culture: The pullet that commences to lay earlier in life is the one to lay the largest number of eggs through life, as cattle that have the milk-producing organs active make the best cows. Select the fast-growing, early-maturing specimens that present in full the type and size found in the breed, and use only these as breeders, and the egg-producing merits will be increased. We have reported the wonderful product in single specimens, which can be made true of a flock. But it is care and attention to the flock that finds and secures these merits in the progeny. Neglect and haphazard breeding never pays.—I. K. Felch.

### Honey Jars.



1 lb., per gross, flint glass, \$4.75; 2 lb., per gross, with corks, \$6.25; 1-2 lb., per gross, with corks, \$3.65; dime jars, with corks, per gross, \$2.75; 5 oz. jars, 30 cents per dozen; 1-2 lb. 40 cents per dozen; 1 lb. 50 cents per dozen.

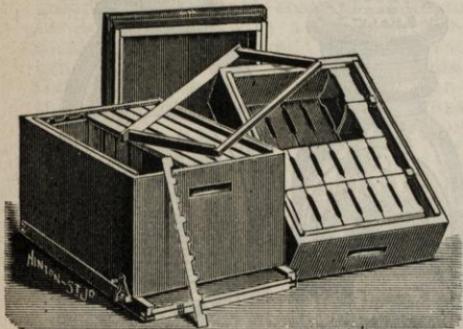
### Corneil Smoker.



A very good smoker for the money. Price, 80 cents each; by mail, 25 cents extra.

# The "St. Joe" Hive.

## LATEST.



## BEST.

The most practical and the very best hive out.

Has all the good qualities of the famous Dovetailed Hive, and is far superior to it.

The illustration will give a clear idea of all its parts. In front one of the metal spacers leans against the hive. Inside of the hive, at the back end, where the three frames are removed, is shown the metal spacer in place. Standing beside the body of the hive is a super with one of the sections removed, showing the pattern slats. Here also can be seen the inside boards and the ends of the wedges, showing how the sections are keyed up and held in place. Lying on top of the hive and super is one of the frames, showing the wide top bar and the narrow bottom bar. All frames now have a heavy top bar. Back of the super stands the lid of the hive. This hive is the result of an extended experience as a dealer and a practical apiarist. It combines all the good qualities of many hives. It is so simple that anyone can put it together, and when it is done there is no stronger hive made.

The writer has long been an advocate of "fixed distances," and has used a hive with a frame spacer in it for years. There is a great rage now for spacing frames by the so-called Hoffman method. I have not found this

practical in a hive for general use. Some may be able to handle these frames and not kill the bees, but the writer, after repeated trials, gave up the idea of such a frame years ago. For the ordinary farmer they would be about equivalent to none in a year's time, as they would be all stuck together with propolis.

The "St. Joe" accomplishes the end desired with none of these bad features. It is made of seven-eighths lumber, of good quality, and has no portico, as you will see, for the spiders to spin webs in. The bottom is formed of a thick frame, grooved, so that three-eighths lumber is fastened into the groove, which, being ship-lapped, makes as good a bottom as if seven-eighths thick. It is a loose bottom, with bee space, and is very light and strong.

The frames have a top-bar that is 18 3-4 inches long. It is heavy and is 11-8 inches wide, leaving 1-4 inch bee space between the frames. The bottom bar is one-half inch wide and 17 1-4 inches long. The end bar is seven-eighths of an inch wide, and 8 3-4 inches long. It can be nailed each way, making a very strong frame and a very good one.

This frame fits the Improved Langstroth Simplicity Hive. The frames rest in metal frame spacers, which hold every frame in its place. The spacers fit in saw kerfs which are cut in the wooden rabbets in the ends of the body of the hive. All you have to do is to drive them down to their places and they will remain there without nailing or further trouble. Bees cannot stick the frames fast, and the construction is such that they will not build burr combs. The frames are spaced with the metal spacer at the bottom of the hive, so they are always in place. The hive can be shipped across the continent without killing bees.

The supers are made with the slats in the bottom cut the same shape as the sections, thoroughly protecting them. The sections are held in place by an end and side board that fit inside the super. There is a bee space in all

of the slats of the super, so that the bees will finish the outside sections, and also one between the supers.

The hive should be seen to be appreciated.

**PRICES**—Sample hive, made up with sections and starters, no paint, \$1.50.

Five or more, no sections, starters or paint, \$1.25.

Add 25 cents for two coats of good paint.

For sections and starters add 25 cents

Ful sheets of foundation in the brood chamber, 90 cents per hive of 8 frames.

Five hives in the flat, cut ready to nail, no sections or starters, \$5.00.

Ten hives in the flat, \$9.50. Extra supers in the flat, 20 cents; made up, 25 cents.

Plain hooks and eyes to fasten on the bottom, 5 cents per hive. For ten hives, 25 cents. Sections for five hives, 50 cents.

All prices for hives include one super only.

I guarantee this hive to be first class in every respect.

#### Globe Bee-Veil.



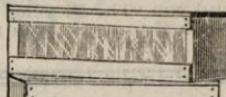
Five cross-bars are riveted in the center at the top. These bend down and button to studs on a neck-band. The bars are best of light spring steel. The neck band is hard spring brass. The

netting is white, with face-piece of black to see through.

It is easily put together, and folds compactly in a case 1x6x7 inches—the whole weighing but 5 ounces. It can be worn over an ordinary hat; fits any head; does not obstruct the vision, and can be worn in bed without discomfort. It is a boon to anyone whom flies bother, mosquitoes bite, or bees sting.

Price, \$1.00; extra nets, 50c; will club it with The Busy Bee for \$1.15. Cotton, tulle veils, plain, 50 cents; silk front, 60 cents.

#### Shipping Crates.

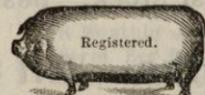


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These are crated in lots of 25, and to get the benefit of the 50 price, they must be ordered in full crates.

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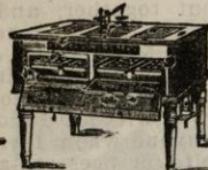
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