The busy bee. Vol 8, No 7 July, 1897

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

Vol. 8. No. 7.
JULY, 1897.

THE BUSY BEE.

Successor to
The Nebraska Bee Keeper.

A Monthly Journal devoted to Farm Bee Keeping, and other Minor Interests of Progressive Agriculture.

By Industry We Thrive.

Emerson Taylor Abbott,
Editor and Proprietor.

Published the 15th
of each Month at

St. Joseph, Mo.

Price, 50c Per Year.

THE BUSY BEE

Published Monthly.

Vol. 8, No. 7. ST. JOSEPH, MO. JULY, 1897

Though the World Blame Thee.

Though the world blame thee, thou art not to blame;
Though the world praise thee, hark not at all.
In thine own heart is the reward or shame,
In thine own heart the victory or the fall.
What others think of thee stay not to ask;
Rather than please the many, serve the few,
Knowing that life's most glorious regal task
Is never quite too hard for thee to do.
—Arthur L. Salmon, in Christian Register.

COMB FOUNDATION.

By C. P. Dadant.

If my readers have ever examined a honey comb, they have noticed that the comb is composed of six-sided cells. Each of these cells has a three-sided base, and the cells o one side of the comb are so arranged that one side, or facet, of each of three cells form the base of another cell on the opposite side; so that the bees are said to have solved one of the most intricate mathematical problems: the making of compartments of the greatest possible capacity and strength in a given space, with the least material and labor.

Comb foundation is simply the base of those cells artificially made for the use of the bee.

To Mr. Johannes Mehring, a German, is due the invention of the comb foundation, some 50 years ago. But the invention was not put into practical use until lately, about 25 years ago. The first machines were presses, and the foundation made was very rough. Then the roller mill was manufactured by A. I. Root, and the manufacture has kept on improving ever since that time. At this day, hundreds of thousands of pounds are sold, and there is hardly a section of comb honey sold that has not been built on foundation starters. The beeswax, after it has been rendered from the combs, is assorted, rendered up by steam, or over water, and purified, then cooled and melted again and sheeted into a continuous sheet under high pressure, made into a roll, which is afterwards run through the mill to give it the imprint, and it is automatically cut into sheets of the proper size.

A number of different grades are made, the heavier and darker sheets being used in the brood apartment of the hive, in which the queen deposits her eggs and the young bees are reared; while the lighter colored beeswax is made into very light sheets, which are used for comb honey. The best grades for this purpose are made with a very thin septum, or center wall; the sheets covering as much as 11 or 12 square feet to the pound. To see it, so pretty and perfect, one would think that the bees would accept it as it is and simply add their wax scale to it; but they always remodel it to suit themselves, and often change its appearance very much, often thinning it still more, and rounding the corners to their taste, so that one can always recognize a piece of foundation upon which the bees have worked from that given them fresh by the apiarist.

The fact that the use of comb foundation is a great saving for the worker bee has been proven most conclusively by its enormous sale. During good honey harvests, and at one time, between 1884 and 1890, it looked very much as if America would not produce enough beeswax to fill the demand.

But bad seasons came and beeswax accumulated again; for the beekeeper is like his bees, and gets encouraged or discouraged as the bees succeed or fail. The careful bee man, however, always comes out on top. In bad seasons he feeds his bees, and when the clover blooms he is ready for the harvest, and a bountiful one it often is. Bee-culture, if properly managed, is one of the most profitable of farm pursuits.

Hamilton, Ill.

FOLK, BIRDS AND BEES.

Horticulture cannot be carried on successfully without bee culture and bird culture. It is true that some years we shall get fair crops of many things without the aid of our inarticulate friends; but this is not the general rule. Each homestead should be planned to make it a resort for such helpful birds as goldfinches, robins, catbirds, bluebirds, indigo birds, wrens, swallows, grossbeaks, orioles and many more. I find that these have become so domesticated in my shrubbery that they co-operate to keep out English sparrows, blackbirds and crows. There was a fight yesterday with a crow which was attacking an oriole's nest, and the aggressor had to meet a dozen birds of all sorts. Robins, grossbeaks, kingbirds, orioles, and catbirds fought together. My evergreen hedges alone would, in a single line, stretch out half a mile. But catbirds like dense shrubs for homes, such as mock orange. There are five nests of these birds on my lawns this year. Their singing power is marvelous, fully equal to that of the sothern mocking bird.

The help extended me by birds in killing worms and bugs is inestimable. But I value my bee-hives quite as much. There are some varieties of fruit that will not self-fertilize. The bees greatly aid nature in such cases. The Bradshaw plum and the Anjou pear are samples of fruit that need the help of the honey-makers. On nine acres I find that, with large gardens of berries, from forty to fifty hives are not too many. But, besides the large amount of honey that can be gathered from raspberries and orchard fruits. I am careful to freely plant the basswoods. My hives stand in a basswood grove. These trees are as beautiful as they are useful. For birds I grow hedges of Tartarian honey-suckle, and freely plant mountain ash trees. It is astonishing how much food one large tree of the mountain ash will furnish. Frequently this serves the birds in winter as well as in summer. Robins prefer the Tartarian honey-suckle, and generally turn to it in preference to cultivated berries. I have placed the subject on the basis of profit, but the aesthetic argument is quite as strong. The profit from my bees is from one-twentieth to one-tenth of all my cash receipts.—E. P. Powell in New York Tribune.

BEES PREPARING NEW HOMES.

By Ambrose Riley.

It is strange, but nevertheless it is true, that bees sometimes prepare new homes before making their departure from the old hive. I have known of three instances within the last two years. The way that I came to take notice of this procedure was as follows: One evening as I was taking a bee hunt through the thickly wooded forest. I heard—as the evening was very still—bees working in some tree, but could not distinguish the direction the sound came from. After looking in every direction but the right one, I took notice of a limb, a little west, and above me, and to my great delight (as it always is to find a bee tree), I saw bees passing through a knot hole in the limb. I watched them work for several minutes, after which I took a look at the butt of the tree, to see if there were no marks, and, as luck would have it, there were none, and at once proceeded to put one on of my own manufaeture. I had marked the tree and gone but a few rods when I heard a swarm of bees high up in the air. Thinking that perhaps thee bees

I had found in the tree had become dissatisfied, and were determined to seek another home, I retraced my steps when, to my great astonishment, I beheld a sight which I had never seen before. The swarm was just descending to the knot hole. They seemed to know right where they were going. The sight was so interesting that I staid for several minutes and would have staid longer had not the mosquitoes been trying to devour my liquid flesh. I pursued by journey a little further west, when I came up to a large burr oak, and looking up into the branches of the tree, I saw bees working as hard as in the other tree. Complimenting myself on my good luck, I looked round the tree for marks, and found, to my great disappointment, that the tree was marked. I next proceeded to the house of my uncle, as he was the owner of the land on which I had previously found the tree. While on my way I met an old neighbor of mine who told me that my cousin had found the last tree in the same manner in which I found the first. My father, after hearing of me finding the tree, related a like experience of finding one in a small elm tree. I retraced my steps homeward, much wiser than ever before for that evening's hunt.

TO HELP STOP THE ADULTERATION OF HONEY.

It looks now as if it were impossible for the two bee-keepers' unions to unite, as their leaders evidently disagree. This is much to be regretted, for "in union is strength." We must, however, do the best under the circumstances, and try to make both of these associations useful to the general bee-keeper.

It appears that the new association is likely to undertake the prevention of adulteration of honey, which the old union has considered out of its scope. If this is done, and done properly, both of these associations may live and be useful.

In an editorial in Gleanings for May, Editor Root recommends that the new union take steps to procure pure food laws, beginning with the state of Illinois, and recommends that Mr. Stone and myself be sent to the state legislature to buttonhole the members so as to obtain the passage of such a law. Mr. Root has evidently more faith in my capacity as a lobbyist than I have myself, for I would make a sorry politician.

But let me ask, Is it really necessary to have more laws than we now have to prevent the sale of glucose under the label of honey? Can a man sell you salt for sugar, or dust for pepper, garlic for onions, or silver for gold, with impunity? If, so, we are not a civilized race, and all the vaunts of the so-called progressive men are empty bubbles.

I am not a lawyer, and perhaps my reasoning goes astray, but, in my opinion, we need less laws than action. If, with the present existing laws, we were to cause an examination and analysis to be made of the honey sold by suspicious firms, and, upon evidence of adulteration, if we were to give them a notice that they must discontinue to proffer such goods under the name of honey; if we were to sue them for selling glucose under the label of a better article; if we were to give notice to the buyers, especially the small dealers through the country, that the adulterated goods of these firms would be followed, and the sale of them prevented by suits—I believe that we could, perhaps not do away altogether, but decrease the sale of these goods to such an extent that no damage would any longer be done to our industry.

I have seen adulterated honey upon the counters of some of our grocers here at home. After I told them that it was not pure they discontinued buying it. Yet there was evidently some profit in it for them, for they could sell it at a price that would destroy the competition of pure honey. But these men were honest, and did not wish to knowingly sell a spurious article. Two or three wholesale firms, in Keokuk, Iowa, kept this adulterated stuff. If

I had been able to go to them with a statement of analysis of the honey, or rather of the glucose in question, backed by a bee-keepers' union well organized and ready for a fight in the interest of its stockholders. It is my opinion that I would have had no trouble in getting these folks to drop the handling of those goods.

There are scoundrels in this world, but there are plenty of men who will not support a fraud if they know it to be a fraud. The majority is honest. If it were not so, the laws would be made in the itnerest of the dishonest. What we need more than anything else is publicity and information that will enlighten the public. Do not tell me that people like to be humbugged. They do not, but in many cases they are unable to judge for themselves.

Such is the case with honey. Too many people think that to be good, honey must be liquid and pass judgment more upon the looks than upon the taste of what they buy. That is why fraud is so easy in the honey line. The consumer helps the swindler. But the to discern the true article. It takes some time, it is true, but if we strike at the root, by informing the middleman, in an equivocal manner, we will soon succeed.

What if we pass a pure food law, supposing that our legislators cared for it enough to accede to our requests! We would still have to see that the law was enforced. Let us go at it now and see that the present laws are enforced. I believe we have enough to serve our purpose.

Of what use is a law that is not enforced? To what purpose is the liquor law, in most cities in Iowa? But whenever our people are so educated that they wish it, the evil will soon be stopped. So it is with adulteration. Let the bee-keepers once decide that it must be stopped, and it soon will be.—C. P. Dadant, in American Bee Journal.

As one of the directors of the United States Bee-Keepers' Union, I want to give the above by Director Dadant my hearty and unqualified indorsement.

We are too much given in this day and age to entertaining the idea that new laws, and more of them, is what we need to correct the ills of humanity. Many of our states are lawcursed now. What we need is the rigid enforcement of every law which is now upon upon their statute books, and then, if the law proves to be bad, or inefficient, it can be repealed and a better one made, or the people left to be "a law unto themselves." Better this than so many laws which are of no practical uitility, and which, by not being enforced, breed a disrespect for all law. If the laws of the state of Missouri were enforced, it would soon stop the mixing of glucose with extracted honey, and the selling of the mixture as "pure clover honey," or some other misleading or false name.

FERTILIZATION OF FLOWERS.

I have understood that it is necessary for the bees and insects to fertilize the blossoms of the fruit trees, so as to make them bear fruit, and for that reason a cold, wet spell in spring during the time when the trees were in blossom, was followed by a failure of the fruit crop. Please say if this is correct, and if any trees are an exception to the rule.—E. T. H.

It is a fact that the insects are necessary for the fertilization of the blossoms of our fruit orchards; when the weather is very cold bees do not come out of their hives—hence the loss of fruit. There are many trees which do not depend upon insect fertilization, and, indeed, the flora is divided into two groups called entomophilous and anemophilous, according as they are insect or wind fertilized. The writings of Sprenger and Lubbock deal exhaustively with this subject, which is far too wide a one for reply here. Wind fertilized trees are such as conifers, willow, maple, etc., and generally have obscure flowers with abundance of pollen.—American Gardening.

PLANT THE WASTE PLACES.

The time for destroying trees because they encumber the ground has passed. Our fathers destroyed; we must plant. Where?

Every waste spot on the farm should be planted with trees valuable for timber, fruit or fuel, or for all three. Whatever land is too rough or too barren to cultivate should be planted to trees. The black walnut, hickory, chestnut, white oak, and ash are valuable hardwood trees for waste rocky lands. On some soils the honey locust thrives and is most excellent for fencing purposes, rapidly producing a most durable timber. Wild trees got from the borders of woodlands may be transplanted, or seeds may be covered up with a few inches of soil, and then if protected from cattle for a few years will make a good growth. For sandy soils the pines and spruces are best. They are readily grown from the seed.

There should be at least an acre of timber on every farm. For fencing, for fuel, for building-timber, the wood lot is invaluable. Probably its annual product would be worth as much as from any other acre on the farm.

Trees should be set along the public roads and along permanent lanes and stone walls. There is no reason at all why the roads should not produce for the farmer a crop of some kind. The trees adapted for roadside culture may either be hardwood timber or fruit trees. The chestnut and maple look well planted beside roads, as do also the cherry and apple. On a farm with a mile of roads running on one side of it 143 apple or cherry trees could be planted, or as many as could be set on three and one-half acres, or if double rows were set, one on each side of the road, the number would be 286, or the number required for seven acres! In the same way trees could be set along lanes and permanent fences, with this advantage, that the fruit being freely exposed to air and sunlight, would be of better color and flavor. The appearance of the farm would also be improved by planting.

Windbreaks are not planted nearly so much as they should be. Whenever buildings have been located in exposed situations they may be completely protected from heavy winds by windbreaks of evergreen trees. The common arbor vitae is excellent for this purpose. It may be planted in a double row ten feet apart, the individual trees being about three feet apart in the row. The break may be set at any convenient distance from the buildings, a space of 100 or 200 feet being convenient. In a few years' time such a break will be a complete protection. Windbreaks are also of great value to exposed fields. Every observant person has seen fields of winter grain ruined by cold, freezing winds which have had a full sweep over the fields. These winds can be broken and the crops saved by substantial evergreen breaks.

Trees are of great value planted along streams which tend to carry away their banks. The best protection in these cases is a border of black willow and water birch. One variety is probably as good for the purpose as the other. These trees are readily propagated from slips or cuttings, which should be thrust into the ground in the spring. They root at once, and in a very short time are able to resist the action of freshet waters. In time they become large enough to yield considerable firewood, as well as bean poles.

Trees should be set about buildings, wherever there is any land unoccupied, though care should always be taken not to crowd them together so as to produce dampness of the soil or air. The cherry and pear are both suitable for planting near buildings.

If there are any vacancies in the young orchard fill them up. If the orchard is old and worn out do not lose any time in setting out a new one.—Dr. George G. Groff.

Every beekeeper is interested in having the above suggestions carried out, and they should see to it that trees which produce abundant nectar are included in the number. They should make a special effort to have large quantities of linden, or basswood, set out, as it yields a bountiful supply of nectar, makes a fine shade tree, and the timber is valuable.

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.

Price, 50 cents per year, payable in advance.

OFFICE—108 South Third Street.

Entered at the post office at St. Joseph, Missouri, as Second-class Matter, June 7, 1897.

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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.

Have You Sent in Your Subscriptions?

The St. Joseph Weekly Herald and The Busy Bee one year for $1.00. Send in your subscription before you forget it.

Keep your comb honey in a dry, warm place. Do not put it in the ice chest, nor in the cellar. There is not a cellar in the United States that is so dry that it will not injure the flavor of comb honey if kept in it. Better by far put it in the garret, as it is sure to be dry and warm there for some time.

Examine your bees and see if they have plenty of room to store surplus honey. Do not conclude that the season is over and that the bees need no further attention. This is an unusual season in this part of the country at least, and bees will store honey much later than usual. They will work on the white clover for some time yet. Then there is the fall flowers, such as Spanish-needle, smart weed, etc. If they have only one super part full, fill another with sections and starters, better make the starters large at this season of the year, if you do not use full sheets, lift up the super which is partly filled and place the empty one under it. If the bees have two supers part full, give them a third, or even a fourth one. They will fill all of them about as quickly as they will one. Half the people who have bees get but little honey from them because they do not know how to manipulate them, or else, if they do, they simply neglect they simply neglect them. It pays them. It pays to "make hay while the sun shines," and you must care for bees at the proper time, or else they will prove to be of but little value to you.

Do not conclude that you "know all about bees" or that you are "too old to learn." Gladstone is over 80, and he

rides a wheel, and there is a lot for many of us to learn yet about modern bee-keeping. The day of old barrels, box hives, "king bees," and brimstone has gone. This is an age of advancement, of new ideas, new methods and new results, and none of us can afford to ignore the light and knowledge of the last years of the nineteenth century. No, no; you do not know all about bees;" neither are you "too old to learn." One of my customers writes, "I am 84 years old. I have had sixty swarms from fifty-four colonies, and I have hived them all myself." Too old to learn, are you? Not much! True, some of these old fellows yet talk about "king bees," etc., but they can learn that there is no such a thing as a king, or queen either, if by queen we mean a ruler—only an ordinary mother-bee, which has a wonderful capacity for laying eggs, hundreds of active workers, and a few hundred male bees or drones, which, like many males, are not much given to work.

Hiving Swarms.

Almost every day I hear some one say "I have had three or more swarms from some of my colonies, and all of them have swarmed at least twice." This is a mistake, and one that can be avoided to some extent, at least. A good rule to adopt is always to set the hive in which the swarm is placed exactly where the hive stood from which the swarm issued, moving the the old hive to some other part of the yard. I can imagine I hear some wise bee-keeper saying, "Well what of it? There is nothing new about that. Why take the space of a paper to tell that, when it can be learned out of any bee book?" Granted, but there is a big lot of people who do not know about this simple method of manipulation yet, and there are many of them who do not have access to a bee book, but they do read The Busy Bee. I want to say to all such that you will have fewer swarms, better ones, and get more honey, if you will practice what I have suggested above. One good swarm is better than two or three weak ones, and one good one is what you will have if you always hive your swarms on the old stand. If you practice this method of hiving swarms, see that they have plenty of room as fast as they need it. Do not get the idea that it takes a colony of bees all summer to gather a few pounds of honey. A good strong colony can fill the brood chamber and one or two twenty-four pound supers in ten days, during a good honey flow. Plenty of bees waste a deal of time doing nothing simply because they have no place to store surplus honey. "Why," said one man, "my bees are doing splendid. I looked into the hive the other day and they had everything full, and had gone up into the lid and filled it." He seemed to think that they had gathered an enormous lot of honey, little thinking that they would have done four times as much, perhaps, if they had been given room, according to their strength, at the proper time. Half of the people do not know how much capacity for work there is in a good strong colony of bees, and the result is they leave them half the time during the honey flow with nothing to do, simply for want of room to store the nectar.

Farm Bee Keeping.

"As people become more intelligent, we are going to have a class of bee-keepers who will keep a few colonies

for their own use and pleasure, just as there are multitudes who cultivate a garden so as to raise their own small fruits and vegetables."—Rev. W. F. Clark, in The Review.

This is our idea, exactly, and I presume what Mr. Clark means by "more intelligent" is better posted as to the proper method of handling bees and providing for their wants. It will be the purpose of The Busy Bee to do its part toward helping to make the people "more intelligent." As I said once before, the Editor will not hesitate to discuss the elements of the industry simply because such things might be learned out of bee books. He is well aware of the fact that many of his readers do not have access to such books, and, perhaps, if they did, they might not be able to gather the information they desire from them, owing to the fact that so many books assume that the reader has some previous knowledge of bee-keeping. It will not be the Editor's aim to make The Busy Bee take the place of books, but to put his readers in possession of information which will render the books more intelligible when they do have access to them. Every day's experience confirms me in the belief that bee-keeping is a legitimate branch of agriculture and that it can only be made a success in many, if not all, localities by treating it as one of the minor industries of the farm. Bee-keeping in connection with other rural pursuits is a success, but bee-keeping as the only means of securing a living, taking one year with another, is apt to prove a failure. I am inclined to the opinion that the time will come when a few colonies of bees will be found on almost every farm in the country, as well as in many village yards and gardens. The farms of the future are destined to be much smaller than those of the present, and farming perforce of circumstances will be much more diversified. As this comes to pass, more and more attention will be given to the minor industries of the farm, such as bee-keeping, poultry raising and the growing of small fruit.

An extensive California bee ranch may prove a success, and the Olden fruit farm with its thousands of acres of fruit, may be found profitable, but there is not room for many such, even in a country as big as ours. The farmer who has a small farm thoroughly cultivated, a few bees, a thrifty flock of full-bred poultry, an orchard well stocked with the choicest varieties of the various fruits and berries, a healthy flock of sheep, and a herd of well-kept thoroughbred cattle, is in a better position to enjoy life, and be independent, than any other member of society, provided he is out of debt and keeps out. One does not need to possess a large amount of property to be happy. He only needs enough to supply his needs. If he has learned, as every one should early in life, to live within his means, he will not feel that he needs anything for which he cannot pay. The life of the city man who depends on credit for his monthly living, who has to take, at the end of the month all he earns to pay the debts contracted during the month, is not one to be envied, to say the least. One would better live on a farm want less and have more. There is music in the hum of the bee, honey and contentment for you and me, if we only know how to get them out of it.

Pass it Along.

Watch and pray, but keep the dust mulch perfect. Have faith in God, but cultivate your small grain. Never forget that an All-Wise Providence reigns, but at the same time do not neglect deep plowing, sub-surface packing, and frequent shallow surface cultivation. Heaven helps those that help themselves.—Campbell's Soil Culture.

More Kind Words.

"The Busy Bee' is the new name of the old Nebraska Bee Keeper. This paper has a new owner, too, in the person of our old-time friend, Emerson T. Abbott. As might be expected, the new paper is full of life, vim, and energy. The aim of the paper will be to advance apiculture on the farm and in small villages, yet it will not be confined exclusively to this work, but will have articles on the garden, flowers, the home, etc., Mrs. Abbott having charge of the home department. Success to The Busy Bee.—Editorial in The Bee-Keepers' Review.

The Busy Bee is the name of the Nebraska Bee-Keeper now. The first issue of the paper under its new name is before us, and from its appearance and make-up we guess it will be a great help to the craft. Emerson T. Abbott at its head is proof of its worth and usefulness.—Editorial in Southland Queen.

The Busy Bee is a real gem of good things.—H C. Middleton, Amity, Mo.

"We are very much pleased with The Busy Bee."—J. N. Talkington, Leonardsville, Kan.

My Dear Mr. Abbott:

I received your paper and have looked it over carefully, and I am well pleased with its matter and typographical appearance. Very truly yours,

J. R. RIPPEY,
Secretary Board of Agriculture, Mo.

AGRICULTURAL EDUCATION.

Should be Taught in the Common Schools.

By Emerson T. Abbott, St. Joseph, Mo.

[Continued from Last Month.]

Such men as Herbert Spencer and John Stewart Blackie have seen the importance of giving our system of education a practical turn. Blackie says: "Let those studies be regarded as primary that teach young persons to know what they are seeing, and to see what they otherwise would fail to see." Spencer says: "How to live! That is the essential question for us. Not how to live in the mere material sense only, but in the widest sense. The general problem which comprehends every special problem is, the right ruling of all conduct in all directions under all circumstances. In what way to treat the body; in what way to treat the mind; in what way to manage our affairs; in what way to bring up a family; in what way to behave as a citizen; in what way to utilize all these sources of happiness which nature supplies—how to use all our faculties to the greatest advantage to ourselves and others; how to live completely. And this, being the great thing needful for us to learn is, by consequence, the greatest thing which education has to teach. To prepare for complete living is the function which education has to discharge; and the only rational mode of judging of any educational course is, to judge in what degree it discharges that function."

The schools of manual training in the large cities are meeting the wants of those who may engage in the trades and professions, and the kindergarten method is helping to brighten up the sometimes monotonous routine of school life in many a village school and even sometimes finds its way into the schools in the rural districts. However, the fact should not be lost sight of that a large per cent. of the pupils in common schools come from the farms, and the welfare of the country demands that the question of what influence our present system of education is having on them should be discussed. When we look into the matter we find that the farmers' sons and daughters are being educated away from the farm, instead of receiving such help as will encourage and enable them to remain in the occupation of their parents and make for themselves a home and a place in society. What we want is a little more of the kindergarten idea in all of our schools in rural

districts. The name, kindergarten, suggests a child and a garden; and the original idea of this method was that the children should be in the open air as much as possible, and they were each to cultivate a little garden. This would be an ideal farmers' school; but I am sorry to say the ideal is not realized in actual practice very often. The idea of farm life does not find a place in the method of teaching followeed in many of our country schools.

A lat writer on this subject says: "Our common-school education is not adapted to create a race of farmers capable of adjusting themselves to the times." Again: "What we want of our country schools is to make the farming of today intelligent, interesting, and profitable." But, strange to say, there is not a hint of anything taught in the public schools of this state that would indicate that any of the pupils were to look to the cultivation of the soil for their livelihood. The boys are early impressed with the fact that they may be President some day; but the trouble with this is we elect only one President every four years, and we need thousands of farmers all the time. The girls early have an aspiration kindled in them to become teachers, great musicians, or something of this kind, or that they may at least become the wives of great men; but there is not a hint of the fact that it may fall to their lot to be cooks, the wives of farmers and the mothers of their children.

I was greatly interested in a letter which a man who evidently had more than ordinary intelligence addressed to Edward Everett Hale not long ago. Here it is, as given in an eastern paper: "Would it not be possible for some intelligent cultivator of the land to make a little handbook of popular instruction, which would tell a strong man of thirty-five, who has good health, has muscle and pluck, how he may start in the world, which is nearly a virgin world; how he may break up the soil to God's sun and rain; how he may put corn and wheat into the ground, and how he may make a living for himself and family? * * * Mr. Atkinson tells us that when capital and science and enterprise combine, one man can in one day produce wheat enough to keep him alive for a year. It would seem as if there must be some way in which, in a country so barren of population that an eagle flying over it hardly sees the cultivated spots, a good fellow willing to work 365 days in the year might be able to produce bread enough to keep him in the world." The defects of our educational system could not be more strikingly illustrated.

Is it not a little strange, when you come to think of it, that this has gone on so long, especially in rural districts, without a single protest? The taxes are paid by farmers, the schools are under the control of directors, all of whom are farmers, and in many cases the teachers are farmers or the sons or daughters of farmers; yet there is absolutely nothing in the curriculum of our country schools that would indicate that any of the pupils came from the farm or ever expected to have anything to do with farm work. I am inclined to think that the farmers of the country are about as much to blame for this condition of things as any other class of people. They, by their silence, if not by practice and tradition, have endorsed the sentiment which we often hear expressed, that "any fool can farm." Well, any fool can stay on a farm, but the day for "fool farmers" has gone by. In this day of enlightenment and progress, the fact is coming to be recognized that it requires the highest grade of intelligence to successfully cultivate the soil. The farmer has to do with the living, vital forces that play, like a shuttle in a weaver's loom, through the earth and air about him, and he must understand the laws by which these forces are governed, or defeat and failure are sure to stare him in the face. Farmers in the past have been content to let the children learn from their example what little they knew about farming, and the result has been that they grew up and moved along in the same old ruts as their parents, if they did not become disgusted with rural life and leave the farm entirely, and try their luck in the excitement, danger and uncertainty of city life.

In many cases, as Professor Voorhees has well said, "The farmer's capital stock of knowledge consists chiefly of tradition and experience, and the experience of a lifetime brings to him but an imperfect knowledge of nature's laws, which a bright boy, if properly instructed, might easily acquire in a public school before the age of fifteen." Along the same line Herbert Spencer says: "The vital knowledge—that by which we have grown as a nation to what we are, and which now underlies our whole existence—is a knowledge that has got itself taught in nooks and corners, while the ordained agencies for teaching have been mumbling little else but dead formulas." There is a great deal of truth in this statement; perhaps more than we are just ready to admit. This method of getting knowledge may have answered in the past, but it is plainly apparent to any thoughtful person that a successful farmer of the future must possess a higher grade of in-

non-progressive tillers of the soil of today.

The government appropriations for investigation of subjects relating to agriculture for the year ending June 30, 1897, amount to $3,255,532. Much of this great sum of money is practically wasted because the early education of the farmers of the land has not been such as to enable them to derive the bnefit from it which they should. I know that some of the government bulletins are foolishly technical, but they would be much more intelligible to the farmer who reads them if he had mastered the elements of scientific agriculture when he was a pupil in the common school. A German friend tells me that in connection with many of the schools of Germany they have small patches of land in which are grown plants, trees, etc., and that the children are taught how to plant, prune and graft, etc. In other words, the kindergarten idea is carried out there. In speaking of this he said: "These early lessons stay with the children and become a kind of second nature to them. If these things are left until they grow old, they become set in their ways and it is hard for them to learn them." Everyone knows how this is. You can take a young and tender twig and train it to grow almost any way you wish it; but let it alone until it becomes a stately oak and you have but little control over it. If you had the strength of a giant, you might break it asunder, but you could not bend it to your will as you can the young and tender twig. This is the way it is with us older people who have become "set in our ways;" we are very hard to turn. The man who prayed, "Oh, Lord, start us right, for when we get started we are awful hard to turn!" was not so far out of the way. Some one is said to have asked Oliver Wendell Holmes when was the proper time to commence the education of a child, and he replied, "A hundred years before it is born." The time to commence educating the farmeers of th future is before they are born. What we need in this country is an inherited bias toward rural pursuits, and then the question will not be asked so often as to what can be done to keep the boys on the farm. We recognize the influence of inherited tendencis in our stock, and it might be well for the members of the human family to make more of it.

Every agricultural paper in the land should be interested in the subject of early agricultural education, for such an education of the farmers' sons and daughters would double the number of the readers of the papers treating of farm topics.

What Some Prominent Men Have Said on the Subject.

Ex-Governor Hoard said, in speaking on this subject: "What a magnificent thing it would have been for me, as a boy struggling for an education, on a mountain side in the state of New York, if some kindly hand had put itno my hands a little pamphlet by which I could have determined the primary meanings of agriculture which lay at the bottom of it. How nicely this would have repaid me, and set me on the road to comprehend, for instance, the meaning of nitrogen, phosphoric acid, and potash." Again: "We should begin to acquit ourselves with some dignity in this wonderful science of ours, and we must begin with the boys and girls in the country district schools."

Professor Voorhees, of the New Jersey experiment station, in a letter to me says: "In my judgmeent, this subject should be taught in every public school in the land. * * * It is the one thing to do before we can expect to have the proper development of the agricultural industry of the country."

Professor Shaw, of the Minnesota station, writes me: "Before any text-book in agriculture will accomplish all that it may, the subject of agriculture will have to be made a branch of the regular course of instruction in the rural district schools. It will also be necessary to require the teachers to pass an examination in this as in other branches."

Secretary Coburn has said: "In an agricultural country like ours, where to such an extent all property depends on agriculture, it seems to me especially appropriate that the youth of the country, whatever their future vocation may be, should be insructed in the elementary principles of agricultural science. The introduction of such studies into the common schools I regard as most desirable. Too many of our youth are being reared without any conception whateveer that all our prosprity depends on sbuccess in agriculture."

Director Jordan, of the New York station, says: "It appears to me that what is demanded for our country schools should not be designated as the teaching of the elementary principles of scientific agriculture, but, rather, instruction in the elementary principles of the sciences." Professor Jordan seems to think that it would be of the nature of class legislation to teach the elements of agriculture as such, but I cannot agree with him, and I think I will be able to show, further on, that the point is not well taken. Of course I should not be in favor of making even the elements of agriculture compulsory

on the part of pupils in the common school course, but I do think there should be some chance for children in these schools to learn something about agriculture when their parents so desire. I further insist that all parents who live on a farm make a mistake if they do not elect that their children should be taught the elements of agriculture.

What Has Been Done in Other States and Countries.

I am sorry to say that there is but one state in the union where agriculture is part of the curriculum of the common schools. This is Tennessee. It is required there by an act of the legislature, and this has been the law of the state for some time. However, Mr. Gilbraith, the superintendent of public instruction, writes me that it is not a popular study and never has been. Consequently no great importance is attached to it, though the pupil must pass on it before the award of the public-school diploma. He says the report of the superintendent for 1895 shows that only 4,877 studied the principles of agriculture, out of an enrollment of 478,125. I wrote to him to know why, in his opinion, the study of agriculture had not been popular, but I have not received any reply as yet. I can conceive of no reason why it should not be, unless it be from lack of competent teachers or suitable text-books. Surely the facts, if properly presented, are intensely interesting, even to the minds of the very young. If the people of Tennessee do not "attach any importance" to thee fact that 4,877 pupils in th public schools of that state have studied the elements of agriculture, it seems to me that they are blind to their own interests. It is true that this number seems small as compared with the total attendance, but it surely means something for the future of agriculture for 4,877 boys and girls to have gotten an intelligent conception of what advanced agriculture means. These pupils, it seems to me, cannot fail to act as missionaries for good to the future agricultural interests of that state. Would that we had as many missionaries for agricultural progress among the children of Kansas, or in the state of my own home, Misouri.

[To be Continued.

FREE SEED.

Free seeds from the government seed shop benefit but very few except congressmen and senators who are fishing for votes of the people. Who ever heard of the government introducing any new and valuable vegetable? That is always done by seedsmen.—W. B. Gratiot, in American Gardening.

Letters from the Field.

Grand Island, Neb., June 30, 1897.

Dear Sir: Everything looks favorable for a good honey flow. For the first time I have considerable white and alsyke clover in bloom, besides an abundance of sweet clover. My bees are in excellent condition to take advantage of it.

I am sorry to see the split in our ranks, and the wrangle going on. One union for all of us is most certainly the only proper thing, but it seems to be impossible for producers to unite and co-operate as they should. Yours truly,

WM. STOLLEY.

Fried Stolley: I do not think there is any occasion for any "wrangle" between the two unions. I know it would be better to have only one, but, if we are to have two, which now seems settled for a while at least, there is no occasion for any hard feelings. As a director in the new union I shall never give my consent to any move that would antagonize the old union in any way, and I do not think there is any one connected with the new union who does not wish the old union well, even though its members cannot see their way clear to join hands with us, and thus have but one good strong society. I trust the matter may find proper adjustment in time in a way that will advance the interests of all.—Editor.

Dear Sir: Please send me sample free, or several, Busy Bee, monthly journal, devoted to farm bee-keeping and other minor interests of progressive agriculture. Seen in Gleanings, June 1. JOHN VERLINDEN,

Treasurer of the Apicultural Federation of Hainaut.

Wasmes-ler-Mons, Belgium.

S. W. Smiley, Whiteside, Mo., writes: "On account of cool weather we are having but few swarms. White clover is in full bloom and the ground is car-

peted with it, and bees are working on it in the last few days. I made a mistake in sowng my Japanese buckwheat too early. It is now in full bloom and the bees are mixing it with the white clover. My alfalfa and alske are not in bloom. I will report on it later.

"I like The Busy Bee very much. Will send you some subscribers later."

Box and Log Gums.

R. A. Whitfield in The Southland Queen.

Farmers, of all classes, ought to keep bees, for profit, if not for pleasure. They live in the open country around flora abundant, and where their little workers can freely gather the nectar. Many, throughout this county and adjoining counties, do keep them; but they keep them (black bees) in common box or log gums. Once or twice during the honey season they slice out, or rob, chunk honey for table use, and to sell or give a mite or so to the neighbors. Since I have undertaken bee-keeping for profit and pleasure, I have used frame hives altogether for the past three years; keeping, however, one small "box" gum for purposes of experiment, and I have learned to have some consideration for the comfort and well being of the little toiling pets, and, as I said once before, I am glad to have furnished them such comfortable "houses" to dwell in. I dislike, so much, to see honey cut out in such a way as to needlessly kill or injure so many of the industrious gatherers of the best and healthiest of sweets for use and comfort of the human family. It seems that human gratitude alone should prompt more pains taking in robbing, or a better way to take the sweets from the bees. There is no better way than the adoption and use of removable cases.

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.

Set Toil to a Tune.

Set your toil to a tune, aye, a happy tune,
And sing as you hoe, my laddie;
Set your toil to a tune as sweet as the June,
And sing as you sew, my lassie.
For toil is pleasure
When set to measure
Of mystical rhythms and runes,
And commonplace toil
On fabric or soil
Can be set to a thousand tunes.

Set tunes to the stitches, and sing as you sew,
Aye, sing while the lads, fair lassies,
Set tunes to the furrows and sing as they hoe,—
Songs lie asleep in the grasses!
For the heart that sings,
Hours fly on swift wings
Of mystical rune and rhythm,
And carry the tunes
Of a year of Junes,
And the heart of the toiler with 'em.
—Anna J. Grannis, in "Skipped Stitches'."

Working.

Labor is a necessity to our well being, physically, mentally and morally. Idleness is a curse and brings a train of evils in its wake. Not only does Satan find mischief for idle hands, but disease makes an easy prey of inactive and sluggish constitutions.

While this is true, it is also a fact that excessive labor is just as productive of harmful consequences. An overtaxing of the vital powers will surely result in a broken down constitution and premature old age. Unless the theory of the transmigration of souls be true, we have only once to go through this world, and it is a prodigious mistake to hurry through it and out of it without giving ourselves time to enjoy its beauties. There is a possibility of something in this life beside the ever-present problem of what we shall eat, and what we shall drink, and wherewithal we shall be clothed, but some people do not seem to realize the fact. Cooking, and scrubbing, and plying the needle are essential to our existence and comfort; but when we allow these things to absorb our whole being, we have become slaves to a petty tyran-

ny. Our lives are narrowed down to a single idea. We have no time to learn the thoughts of others on great themes, nor to observe and comprehend the wonderful processes of nature.

With women in the country this is especially true. Many do not know the names of the birds that flit about in the trees over their heads; nor anything of plant life, outside of the kitchen garden; nor of the innumerable varieties of animal life, except the domestic animals of the farm and the few insects that infest the house. Some probably share the opinion of the woman who said she supposed the moon must be as big as a washtub. Why is this? It is simply because they do not have time for anything above the endless duties of farm homes as now conducted. No wonder this never varying round of toil grows monotonous, and so many grow tired of living. It is not life they tire of, it is the continual strain and pull on their energies in one direction.

Here is a chance for the wide awake woman to begin a reformation. Intelligent women ought not to be debarred from any chance to know something of the world of which they are a part. They ought to have in the house all improved machinery and methods that will lighten their tasks. They ought to study their work and decide which things are necessary, and which are mere consumers of time and of no real benefit to any one. In many homes less pie and cake and sweetmeats would be better for the health of the family, and relieve the housekeeper considerably. Plainer clothes would consume less time in making and ironing. Things need not always be elaborate and fussy to be pretty. One woman can save time in one direction and another woman in another. The important thing is for her to carry out her own ideas, and not be influenced by what the neighbors may say or think. The woman who glories in the reputation for smartness; who gets her washing on the line earliest and has her house cleaning done before others begin the annual agony, is the woman who will early leave her children to the tender mercies of a step mother.

Plan the best she may there is still a large amount of necessary work for the woman on a farm, but life is many sided and it is possible for the hardest toilers to get out of the ruts of their daily tasks by keeping their senses alert and their minds receptive to whatever good things may come to them.

Four Ways of Cooking String Beans.

1. Cut into inches pieces boil two hours or longer if necessary to make them perfectly tender. Drain off the water and pour in milk. Season with pepper, sale and butter; let boil up and it is ready to dish.

2. A nice salad may be made with beans prepared as above, but instead of the milk sauce, make a dressing as follows: To one cup of vinegar add a tablespoonful of butter; set over the fire and when quite hot, but not boiling, stir in slowly a well beaten egg. Stir until it begins to thicken, taking care that it does not boil, and pour over the beans. Serve cold. Cold beans left over from dinner may be prepared in this way.

3. To pickle beans for immediate use, string, but do not cut them up. Boil in salted water until they are soft. Drain and place in a jar, and pour over them vinegar spiced to suit the taste. These will keep a week or more in the hottest weather, if kept in a cool place.

4. Green corn and string beans cooked together make a palatable dish. When the beans are nearly done, add an equal quantity of corn cut from the cob. After cooking a few minutes, dress with milk sauce as in No. 1.

The moaning plaint of the male sex because so many young women go into other lines of life than that of housekeeping, when superficially considered, seems justified. The unvarnished truth, however, is that very few men are worth marrying. Mentally contrast, if you will, the young men of your acquaintance with the brave girls who

earn their own livelihood, and convince yourself if you can that the former, immoral, profane, tobacco-burning lot, are worthy of the latter. When the "general run" of young men become clean-hearted, industrious gentlemen, the "female labor" problem will in great part solve itself in that fine old institution called love and matrimony. The American girl should refuse to wed save with her equal, and the average American girl is hard to equal, and can't be beat.—Selected.

Lime water poured in ants' nests will destroy them. This is a very simple remedy, cheap, easy to prepare and apply and perfectly safe.

Grow a few tobacco plants, not to smoke, but to crush the leaves and lay on top of pots containing roses; then you will never need to fight lice.—Woman's Farm Jurnal.

The secret of life is not to do what one likes, but to try to like that which one has to do; and one does come to like it—in time.—Dinah Mulock Craik.

Poultry Notes.

Root Crops and Poultry.

If roots and ensilage improve the health of animals, and cheapen the cost of food, they will do the same for fowls. It is too expensive to feed grain exclusively, when the winters are long and severe, and as the hens prefer a variety, they should have it. A quart of corn meal, added to half a peck of cooked turnips, will provide a better meal than can be procured from either the corn meal or the turnips, if fed alone. It is the mixed food—the combination of various elements—that enables the hen to provide the different substances that go to make up the combination called an egg. Lime, phosphate, nitrogen, magnesia, and even water, are elements that are absolutely essential, and many foods contain an excess of some kinds and a deficiency of others. When a mixed food is given, there is a partial balancing of the needed elements, and the several varieties assist in digesting each other, thereby avoiding waste of ind est. ed food. Finely chopped ensilage or clover, potatoes, turnips, carrots, or any succulent, bulky food, served with an admixture of a variety of grain, will provide the hens with a larger supply of egg elements and entail less cost for the food than when the hens are compelled to subsist entirely on grain.—Poultry Keeper.

Care of Sitters.

Sit three or more hens at the same time. You can take care of half a dozen almost as easily as you can one. Before placing the hen on the nest sprinkle her with insect powder and repeat the sprinkling every week during the period of incubation. Attend to the sitters at the same hour every day. At first they may not leave the nest willingly; if so, they should be lifted off gently. Never remove them forcibly from the nest. Aim to keep them gentle. In cold weather it is well to give them a warm meal of soft food occasionally, but corn and wheat with the chill taken off, should be their diet. The drinking water should be tepid. Have plenty of sharp grit and a dust bath within reach. Sitters are often troubled with diarrhoea. A little ginger mixed with the soft food or enough venetian red stirred into the drinking water to make it red will correct the trouble. After fifteen or twenty minutes the sitter should be induced to return to her nest with as little force as possible. In summer a half hour is none too long for the sitter to remain off the nest.

Do not disturb the eggs while the hen is off; by so doing you will annoy the hen. She is naturally very anxious about her nest of eggs, and her anxiety should not be increased by unnecessary meddling with the eggs. About the nineteenth day of incubation pour a pint of warm water around the

nest. About this time the heat of the hen's body has extracted all the moisture from the soil. If the weather is damp it will not be necessary to sprinkle the water around the nest. Moisture strengthens the chicks and assists them to get out of the shell. Picking off the shell to help the chick is a band practice. A weakly chick may need help, but before help is given be sure the chick is ready to be liberated, and then the work should be done a little at a time. If the shell is removed hurriedly and all at a time, the tender membranes of the skin are liable to be lacerated. If all the eggs do not hatch and you are uncertain whether they contain a live chick or not, try the water test. Float the eggs in a deep basin of warm water; if they sink they are rotten; if they float without movement the chick within is dead, but if they move and dance on top of the water, the chick is alive. Put these back under the hen and chicks will soon break through the shell. The old shells should be removed from under the hen. After the chicks are all hatched, leave them under the mother without food for twenty-four hours.—Western Plowman

INJURIES CAUSED BY INSECTS.

The gnawings, borings, and punctures of insects, though often injurious, are by no means the whole of the injury which they do. Pear blight: It has been discovered that the germs of this disease were carried in the mouth parts of bees, which had visited the blighted pear blossoms; that the bees passed from such flowers to healthy ones; and that subsequently the blight appeared on the latter. It was also shown that flowers covered with mosquito net remained free from blight, while the unprotected, insect-visited ones blighted freely. Apparently pear blight is disseminated only through the agency of insect visits. The organism exudes from the tree in the form of small sticky or gummy masses, and probably all the spring outbreaks of pear blight start from them as a result of insect visits, and not from the soil. Bacterial wilt of cucumbers, musk melons, pumpkins, and squashes: This is due to a sticky white micro-organism which fills the water ducts of the plants and causes a sudden collapse of the plant. It is readily communicated by the striped cucumber beetle and by squash bugs. The insects carry the virulent sticky germs on their beaks and deposit them in the next plant bitten. Bacterial brown rot of the potato, tomato and egg plant: The Department of Agriculture has recently published a bulletin on this subject. Insects feed on the diseased plants that are swarming with the parasite, and go to other plants which are bitten and subsequently become diseased. The disease may be known by the sudden wilt of the foliage, the stems becoming brown internally and shriveling. Dr. E. F. Smith of the Department of Agriculture beore the Massachusetts Horticultural society.

Here is a case where the faithful honey-bee might prove an injury, but the good she does in the fertilization of our fruit trees and garden plants more than overbalances any possible evil she might do along this line.