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GLEANINGS

A JOURNAL
DEVOTED
TO BEES
AND HONEY
AND HOME
INTERESTS.

BEE CULTURE

ILLUSTRATED
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No. 22.

STRAY STRAWS

FROM DR. C. C. MILLER.

SEALED COVERS seem to have their fate sealed.

MAKE A NOTE of that plan of uniting colonies on different stands given by Doolittle on page 806. It's capital.

ONE-CENT POSTAGE is having some discussion. I'd rather go back to the old three-cent rate, and have free rural delivery.

PRESIDENT WHITCOMB and Secretary Stilson, of Nebraska State Association, are making a push to have an experimental apiary at the State University.

THE BICYCLE is proving quite a benefit to me. It is stirring up public opinion as to the necessity of having good roads. Bad roads are expensive things.

THE RELATIONS between the two editors sitting on one chair at the Chicago convention may never be "strained," but I thought the chair seemed a little strained.

YOUR BEES are ahead of mine, friend Root. Mine wouldn't be so well off in winter quarters yet (in the cellar), for these first days of November are almost like summer.

IF A. I. ROOT should see the springs about my old home among the mountains of Western Pennsylvania, some of them coming right out of the side of the rocks, you couldn't get him away from them.

LOOK HERE, friend Root, what are you going to be up to next? hauling last week's heat 400 ft. and using it over Sunday! Next you'll be sealing up condensed heat in tin cans, and shipping it to the North Pole.

AFTER READING a late number of *Api* I supposed myself dead and buried. An editorial in last GLEANINGS shows I was only shot at and missed—shows what my imagination will do when I'm in a dangerous place.

HONEY is slowly working its way into the market quotations as an article of commerce. Yet many papers even now quote beeswax and not honey, seeming to think that beeswax is still a more extensive commodity than honey.

FRIEND ROOT, you ask if wheels all steel can't be made as light as wood. Of course, they can, just like the wheels of bicycles and little boys' express wagons. I think sulky-wheels are now made that way. Why not wheels for heavy wagons?

THOSE TEN THOUSANDTHS of an inch, on p. 830, remind me of a little discussion in Chicago,

where some objection was made to going into too fine measurements. Got to have them, brethren, if our experiment stations are good for anything.

WASHDAY has much of its terrors taken away if the work can be done without rubbing. Nearly all the rubbing can be saved by the use of kerosene. Farther on you'll learn how. Some succeed, some fail. Perhaps those who fail don't implicitly follow directions.

THAT PLAN of having two nuclei in a hive is good—saves heat. But why "draw out the division-board and let the nuclei unite" in the fall? They seem to winter just the same with the division-board left in. I've tried it lots of times. Then you have another queen in the spring.

IGNORANCE as to bees gives way very slowly. Even so intelligent and reliable a paper as the *Rural New-Yorker* seems to think there should be no laws against spraying fruit-trees in bloom, but that the owners should be compelled "to keep his bees at home by providing bee-pastures there!"

I KNOW the answer to that tin-cup conundrum on p. 825, friend Root. The tin cup at the town pump in Marengo is never stolen. The bottom is punched full of small holes. The cup is of good size, and you get all the drink you want before it leaks out. But it isn't worth stealing.

GUENTHER, the well-known German authority, says, in *Centralblatt*, that queens fertilized in his locality before the middle of May were not prolific or long-lived, while those fertilized so late that they did not lay till the next spring were eminently satisfactory. He thinks the usefulness of drones is not impaired by age.

JAS. R. BELLAMY, in *A. B. J.*, says he has had colonies with 8 frames of brood full from April to August, yet not strong in bees, while others with the same amount of brood would have three times the bees and honey. He thinks the difference was caused by the longer lives of the bees in the second case. If he is correct it would pay to breed for longevity.

I DON'T KNOW exactly what to make of that editorial on page 828 about the large "area for gaining a subsistence without resorting to apiculture." Does that mean that a man will resort to apiculture only when crowded out of all other means for gaining a subsistence, or does it mean that, as population increases and civilization advances, a greater number will resort to the more refined and elevating pursuit of apiculture?

EUCALYPTUS HONEY is a bone of contention between Australia and the mother-country. Londoners say it is valuable on account of its

medicinal qualities, but can never gain a market in England for table use on account of its strong flavor. Australians defend their eucalyptus as of best quality, and say that Englishers want pure sweet without flavor. Education of taste may have much to do with it.

NO LICENSE has prevailed in Marengo for 30 years. One of the largest stove-factories has been moved here, turning out two carloads of stoves a day; and with the influx of factory hands the "wets" thought their time had come, and managed to have an election on the one question alone, "Yes" or "No" for license. A remarkably full vote showed 3 to 2 for no license. No license was a main reason for locating the factory here.

HOW TO WASH CLOTHES. Fill a boiler two-thirds full of soft water. Shave into it 1 lb. soap. When it comes to a *boil*, add 4 table-spoons kerosene. Mix thoroughly. Save out about one-third for the second boiler of clothes. Put dirty clothes in cold water and wring out without rubbing. Put clothes into the boiler and boil 15 or 20 minutes. Take out, and put into tub of cold soft water previously blued. Much soiled parts may need a little rubbing. Wring out and rinse thoroughly.

DOOLITTLE ANSWERS QUESTIONS.

HOW TO STRAIGHTEN BROOD-COMBS; UPWARD VENTILATION; WAX AND PROPOLIS.

I am requested to reply through GLEANINGS to the following questions, which I will do with the editor's permission.

1. "What is the best course to pursue with brood-combs that are buckled or bent, so that some of the cells are not deep enough for breeding? Is there any way of bringing them straight? The foundation became bent before the bees built up the comb."

There was a neglect on the part of some one in having the foundation bent when it was given to the bees, or in giving it at such times that the bees did not commence work on it at once, before it had a chance to warp or twist about in the hive. It is best to give brood foundation to bees only at such times as they are wanting more combs; for unless they do so want, they will not be touched by the bees, unless, perchance, to mutilate them, because they have nothing to do except mischief. But, having combs as described, there are two ways of fixing them fit for use by the bees. The first is, by melting them up and working over into foundation again—a plan recommended by some of our most advanced bee-keepers, but a wasteful plan, as I consider it, unless the combs are too crooked; and, secondly, straightening them in the spring of the year when pretty much free from brood or honey. Take them from the hive to a warm room—one whose temperature is up to 90 or 100°, and, when thus warm and pliable, lay on a flat surface and press them in conformity to that surface, cutting out a little strip of comb if necessary, where the worst bulged, so that the combs will come straight without spoiling too many cells by pressing them out of shape. Years ago I straightened hundreds of combs in this way, before foundation was known, so that the combs in all of my hives were as straight as a board.

2. "Is there any way to get bees to build comb when they are disinclined to do so? I fed some colonies until all the vacant comb was filled, but they would not build out the foundation. This has reference to the brood-combs exclusively."

I do not see why you failed here, unless your

foundation was adulterated; for, in all my experience in feeding, the bees would work foundation as soon as they began to secrete wax to lengthen out the cells or cap over the feed; but had the bees been persistent in using the combs in the hive rather than work out the foundation, you could have made them work it by taking their combs away from them and giving nothing but foundation. In this case they would have to work the foundation in order to find a place to store the feed, after they had their honey-sacs well filled.

3. "What is your remedy where bees ball a queen? Why do bees ball a queen of their own raising, after all queen-cells have been destroyed, and they can have no hope of any other queen?"

The last part of this is a mystery that I never could really solve. It is easy to say that, in opening hives, the bees fear that their queen is to be injured, so ball her for safe keeping; but I have known scores of instances where a virgin queen has been balled in coming home after meeting the drone, and at other times, till they were killed, or nearly spoiled for future use, being led to the discovery that the queen was being balled by the general appearance of the colony at the entrance, such as an unusual commotion denoting queenlessness, or doubled-up bees having the appearance of being stung. Who can tell us why such balling occurs? The remedy is the same as in introducing queens—that of caging them till the bees behave themselves and are peaceably inclined toward them. Smoke the bees till they release the queen, then cage her and leave her till the bees pay no more attention to the cage than they do to any other part of the hive. When you find this to be the case it is always safe to let any queen out.

4. "Do you believe that bees know better than we what is best for them? If it is best for them to have upward ventilation, do you not suppose they would provide therefor instead of sealing every thing up tight?"

I have my doubts whether bees know what they want along this line, but accept the surroundings as they find them. It is their nature to seal up all cracks and holes not large enough for their exit or return, and this they will do, no matter whether in a tree or hive; but after seeing them prosperous in trees that had only a hole large or small at the bottom of their combs, and all the way from there to a crack large enough to put your hand in the whole length their combs occupied in the tree, I have concluded that they accepted things as they found them, as said above, without asking whether such were best for them or not.

5. "To what extent can bees be induced to work over wax? Do you not suppose wax could be incorporated with thick sugar syrup in some way so that the bees would work it the second time?"

There has been considerable experimenting along the line of having old wax worked over by the bees, such as shaving it up in syrup, etc., but I believe it has been acknowledged, by all who have tried it, to be a waste of time and wax, when compared with having the wax made into foundation.

6. "What is the difference, chemically, between beeswax and propolis? Is propolis a special product of the bee, as wax is? Do bees consume any thing to produce propolis?"

Beeswax is a fatty substance peculiar to the bee, and produced by the consumption of honey, on a plan similar to animals, such as the hog and cow consuming grains of various kinds to produce lard and tallow, the same being of a fatty nature, but differing from beeswax to a considerable extent. Who can tell us more on

this subject? Regarding propolis, bees do not produce it at all, but simply gather it from the resinous exudations of certain plants or trees, and from old hives, etc., where it has been previously placed by other bees. The tree known as the balm-of-gilead, and the horse-chestnut, give the most of the propolis gathered here, the buds being well covered with this resin during the greater part of the summer season.

Borodino, N. Y.

G. M. DOOLITTLE.

TWO QUEENS TO ONE COLONY.

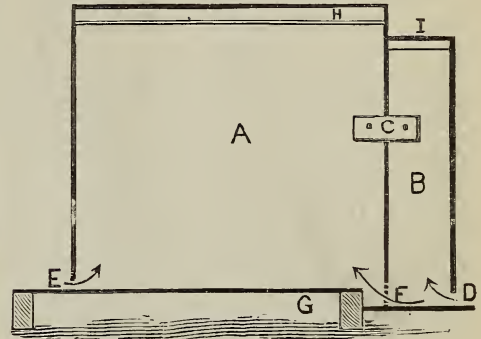
HOW TO MAKE A SUCCESS OF IT; AN INGENUOUS WAY OF REARING QUEENS.

In GLEANINGS for Sept. 15, we have an article from Mr. B. Taylor, Forestville, Minn., in which he informs us that he is working on a system of manipulation to prevent swarming. He then proceeds to condemn the Langdon device, and tell us of his "more excellent way." He tells us that he keeps two queens in the same hive, separated by wire gauze, the bees accepting both queens, etc. Now comes the claim that this is his discovery, and that he will keep himself protected legally in its use, etc. Now, the brother is simply misinformed. There are other bee-keepers who have made the same discovery, and have been making use of it for some time—myself for one. I keep two queens in every colony, from early spring until I go into winter quarters—not, however, for the same purpose that Mr. T. does, but for various other purposes; and in place of wire gauze I use zinc with front and rear entrances. I will send you a sketch of my device, with explanations, etc.

Now, Mr. Root, we can't afford to allow one man to grab more than belongs to him without entering our protest, even if, as he tells us, he is inspired by a higher motive. The fact that two or more queens can be kept in the same hive, separated from each other, and that the bees will accept them all, has been known for some time; and for one man to claim it as his discovery, and send legal notice on us to "keep off the grass," is just a little too thin. I will just say that I am not working on a non-swearer—don't want one, as I have never been troubled with too much swarming; but I hope that Mr. Taylor may succeed with his machine so that others who need them may have them; neither do I object to his patent on his hive or device—that is all right enough, but to his intended monopoly of using two or more queens in one colony, which would work a hardship on others that he has no right to inflict.

My device for queen-rearing, etc., consists of a comb-basket attached to the rear of the hive, holding two or more frames crosswise of the main hive, and same size as in the main hive, with rear entrance to basket, and fastened by a cleat on each side screwed to both hive and basket. You will see by the sketch that the main hive is drawn back over the bottom-board an inch, so the bees can go down over the bottom-board to the bottom-board of the comb-basket, then through a strip of perforated zinc into the comb-basket, and out at the rear entrance. This keeps the queens apart while the workers pass back and forth, using both entrances at will. The sides and bottom of the comb-basket are made to project under the back of the hive, to fill up all the space, the comb-basket having two sides, with back end and permanent bottom-board and entrance. This gives you an idea of its construction. It does away with making nuclei in queen-rearing, as every hive is a nucleus, and every nucleus has a full colony to back it, the colony

going on with the work in the super. At the same time, it does away with introducing queens in requeening, as they are already introduced. The young queen is reared, and fertilized from the comb-basket, and remains there until sold or used. It rushes brood-rearing by



H, I, cover; C, cleat; D, F, doors, showing end of zinc strip; E, entrance; dots show end of zinc strip. A, side view of main hive with comb-basket.

MITCHELL'S QUEEN-REARING COMB-BASKET.

trading combs of brood for empty ones as needed. You have at all times an extra queen for each hive, so if one fails all you have to do is to take your young queen out of the basket, comb and all, and set it in the main hive, and while you can change queens back and forth at will. If you take the queen from the basket the bees will very readily raise another, provided they have the larvæ in the basket to make one of. The zinc strip should run entirely through from side to side of basket, and should be $1\frac{1}{2}$ inches wide, so the basket sits that much lower than the main hive. I use Root's $\frac{55}{1000}$ zinc, as I think it is just right. While it lets the workers through all right, not more than one queen in a hundred gets through.

This gives you an idea of the principle of the device, so any one wanting to try it can vary it to suit. My hives are square, so I use it on the back. It could be used on the side with entrance on back end. I should like others to try it, and report. There is no patent or "higher motive" about it. A. C. MITCHELL.

Enfield, Ill., Oct. 13.

[Friend M., you are just a "leettle" bit hard on Mr. Taylor. If you could but be acquainted with him you would know that he is not selfish or grasping, whatever his published statements might indicate. We do not understand that he claims the idea of two queens in a hive except in combination with the non-swarming idea. Whether he is original in this remains to be proven.]

Regarding your queen-rearing basket we believe you have a good and practicable device for certain seasons of the year. It is not original with you probably, because both Dr. Tinker and G. M. Doolittle have been working along these lines. Both of their plans are described in detail in their books, published some three years ago. Rearing a queen in connection with a full colony already having a laying queen, if we may judge from reports, has not proven to be an entire success. They were too liable to be killed by the same bees that were too loyal to their old queen-mother. When honey is coming freely, bees will tolerate conditions not allowed during a dearth, and hence sometimes plans will work when at others they will not. We should like to hear, not only from

friend Mitchell, but Doolittle and Tinker on this question.

Hello! here is another article on the subject, from J. A. Golden.]

KEEPING TWO QUEENS IN ONE HIVE.

HOW THEY MAY ENSURE A LARGE CROP OF HONEY.

Friend Root:—I see by GLEANINGS of Sept. 15 that B. Taylor is claiming for himself a new discovery—namely, a process in which two queens are kept permanently in one hive, and their progeny work promiscuously in all the apartments of the same. Now, please allow me to call to your mind a period some three or four years ago when I wrote an article for your journal, on my experiment relating to the same process and manipulation, but which, for some reason, was not published. I supposed it was some old project tested before I went into the bee business, and was found to be impracticable; notwithstanding, had the honey-flow continued I should have proved, to my own satisfaction at least, that it is the greatest honey-producing theory of any that I know. I think I stated in that article, that every thing was working harmoniously—bees were crowding the surplus arrangement, and had fairly commenced the storing of surplus, when suddenly the honey-flow stopped, and drones were driven from the hives, surplus crates taken from the hives, and I thought I would try the experiment the following season; but as circumstances and reverses to some extent prevented, the experiment was conducted in the house-apiary. The following winter I had made several ten-frame dovetailed hives with two entrances, for outdoor use the following season; but as my bees were suffering from paralysis, I still abandoned the experiment until this fall, when I have been and am now doubling up my stocks in proper order to put in operation next season, should I be permitted to live, and if my bees get through the winter safely. I am pretty certain that I stated my plan of operation in my article, but will state it again here, as follows:

I build up a strong colony. A wire-cloth division-board is placed in the center, and a queen is introduced to the queenless side, after which a queen-excluding zinc division-board takes the place of the wire cloth. Queen-excluding zinc is placed over the brood-combs, and a surplus arrangement is put on, the same as for single colonies; and by using the house-apiary with troughs in place of hives, one can manipulate and use as many queens as he wishes in the combined arrangement, all workers having access to all apartments, with no fears of molestation. My experiment was very convincing to my mind, so far as tested, that the plan would be profitable so far as surplus honey was concerned; but I have some doubts as to the non-swarming idea, for I think that, when bees take a notion to swarm, they are *going to have their way* about it; and all we can do to prevent only causes the bees to become dumpish, sullen, and habitual loafers. As for me, I *want* my bees to swarm, and I will continue to manipulate them in the same home with profit, which I expect to make known to all bee-keepers next year, free of any patent.

Now, if friend Taylor commenced his experiment prior to my article to GLEANINGS four years ago this past season, then he has the right, as being first to discover the aforesaid practical manipulating, so far as I know; if not, then I claim the title he lays claim to, and freely donate the right to all bee-keepers to use, if desirable, without any legal restrictions what-

ever; and in conclusion I voice friend Taylor's views as to the house-apiary, for it is a source of pleasure as well as a safe repository, in all branches of apiculture. J. A. GOLDEN.

Reinersville, O., Oct. 16; —

[This is a very practical question, and we should be glad to receive contributions from a large number who have had experience along these lines.]

CALIFORNIA.

ANSWERS TO MR. PRYAL; SOUTHERN VERSUS NORTHERN PART OF THE STATE.

I notice on page 781 that your correspondent from North Temescal, Mr. Pryal, gives us some valuable information about California; but, like every writer and talker who lives near San Francisco, he allows his vision to extend but a little beyond the northern portion of the State, and gives that part below the Tehachapi Mountains a short shrift. The persistent ignoring of the capabilities and resources of our portion of the State by our northern friends leads some of our people to talk quite strongly of State division, and with a desire to see Southern California stand upon its own unrivalled merits. The Rambler is, however, not a State divisionist, but would rather cultivate harmonious feelings, and try to educate our erring brethren of the North into the fact that we have quite a fine country down this way.

In writing about orange-growing we are aware that there are localities in the northern portion of the State where they can be grown; but the area planted is like garden-patches beside our miles and miles of orchards; and where, in the northern counties, two or three or more towns join to load a car, Riverside alone has this year shipped over 2000 carloads, while other towns have shipped their hundreds of carloads. When you realize the acreage of trees required to produce the above amount of oranges you can realize something of the value of the orange-blossom for honey. During its bloom the bees work upon it with as much vigor as they do upon the basswood in the East. The orchards being under irrigation, there is something of a yield every year; and when the irrigational and atmospheric conditions are just right, the yield is indeed bounteous; and, instead of building up the colonies for a future work, the orange honey is nearly all surplus, for they have been made strong in brood from alfalaree and other honey-producing plants. Several bee-keepers around Riverside, recognizing the value of the orange-blossom for honey, locate their apiaries in or near the orchard districts; and, after securing a bountiful flow therefrom, move their bees a few miles to the foot-hills, and get the benefits from a great acreage of sage. In this move the bees are interrupted only a few hours, and it seems to make no difference to the bees how abrupt the change may be; they continue just as vigorous work if they can find the sage-flowers laden with nectar.

It is very true, that eastern people are imposed upon in the quality of honey that is sold to them. The dealer is just as liable to sell the orange honey under the name of sage, and sage for orange honey, as any way. While orange honey is a trifle darker than pure sage, it is very easy to sell them both under the same name. I think it is the same with the various grades of honey, both east and west. The dealer is always ready to sell what is called for, even if he has to substitute another kind. It is possible that, when the thousands of acres of

young orange-trees that have been planted within the past three years, and are now being planted, get into bearing, there may be such a great preponderance of orange honey from this portion of the State that it will all be sold for orange honey. Our friend P. doubted at first that the beans of Ventura produced a surplus of honey; but he finally had to believe it; and it will turn out the same, we predict, with the orange.

I wish also to say a word in defense of the editor of GLEANINGS, where he states that barley hay is the California staple; and I would state that he is just as near right as our friend of the North; for barley hay is certainly the staple all through Southern California; and during my two years' residence here I have not seen a bale of oats upon the market. Barley is sown here upon the dry lands, just before or at the commencement of the rainy season. If the rains are abundant, the barley crop will be good. Alfalfa, as the irrigation area is extended, is becoming more and more a competitor of barley; but as it is cut just before bloom it is of little value to the bee-keeper.

I have several other bones to pick with our friend in relation to our cherry and apple localities, which can not be excelled. Even our Spanish bayonets are not of the scrubby kind he is familiar with in the foggy atmosphere that surrounds the bay where he lives. We bee-keepers invite our friend to a more extended trip in our country, where he will be certain to find many new things to interest. When, a few years ago, the Rambler held the lucrative office of school trustee in his eastern home, an Irish lad wished to secure the position of teacher for his sweetheart, and said, in conclusion to his ardent solicitation, "Sure, Mr. Rambler, along with the list of the applicants ye'st must give her a *shoo*" (show). It is so with the people south of the Tehachapi. We want our northern friends to give us a "*shoo*," and we are bound to have it.

RAMBLER.

This is often split off. Put on a cleat flush with the upper surface, and there is no danger of splitting.

But I suppose there is no law against putting cleats on the Dovetail, and that can be done whether it has hand-holes or not.

The distinctive feature that gives to the Dovetail hive its name—that is, the dovetail joint—is the joint desirable, I think, above all others. In strength for holding the parts together without warping, and for convenience and surety in rapidly putting together with exactness, it excels.

If I am not mistaken, friend Root, you have made the length of the Dovetail hive such that the space between the end-bars of the frames and the ends of the hives is $\frac{1}{16}$, or $\frac{1}{16}$ less than that which has been in common use. A sixteenth of an inch is not a matter of very great consequence, perhaps; but so far as it makes any difference, is that difference for the better or worse? So far as it makes any difference, it makes it just so much harder to lift out a frame without striking it against the end of the hive, and thus makes manipulation slower.

In my old hives, with a $\frac{1}{8}$ space, with a variation in the end of the hive, or in the end-bar of a frame, or in both, it sometimes happens the space becomes so much less than $\frac{1}{8}$ that the bees fill it with glue, and then there is trouble. The $\frac{1}{16}$ space makes less probability of combs built in the space, but that doesn't often occur with $\frac{1}{8}$, and perhaps never if the space is exact. But even with exact spacing, if the bees were somewhat crowded for room it is possible they might do some building in the $\frac{1}{8}$ space. There is also very little chance for the hive-ends to warp with the dovetail joint, and frames may be so strongly made that they can not get out of square, in which case there would be no danger of bee-glue in the space. So it is not well to conclude too hastily that $\frac{1}{8}$ would be better.

In making the hive for frames at fixed distances, how far shall the frame be from the side of the hive? If the combs are built true, and if the upper parts are filled with sealed honey, there will probably be left between two such sealed combs a space of about $\frac{1}{4}$ inch. Now, if one of these combs be pushed tight up against the side of the hive, it will make a space of $\frac{1}{2}$ inch between the combs and the side of the hive. To make the space $\frac{1}{4}$ it will be necessary to move the comb out $\frac{1}{8}$ of an inch, so we must nail in each corner of the hive little strips $\frac{1}{8}$ in thickness.

So far as my experience has gone with the Dovetail hive and fixed distances, I think the worst thing is the trouble of getting out the dummy. If wedged in with a stick, that stick is glued in tight, and it takes no little tugging and prying to get it out, if, indeed, it is not broken in the operation. Is there any need of wedging in? The main object of fixed frames is to have exact spacing; and if the frames are all pushed up snug to place, isn't that enough without wedging? And is it necessary for the dummy to fit in so tight? In my old hives with loose hanging frames, the dummy hangs loose like the frames, and I don't see any great objection to the same thing with fixed frames. We are not planning to have the hives turned upside down; and in hauling or handling there is no danger that the frames can move enough to do any damage, even if the dummy has a little play.

Let us see how the space will figure out in an eight-frame Dovetail. We start with an inside width of $12\frac{1}{4}$ inches. After nailing in each corner the $\frac{1}{8}$ -inch strips, there is left $11\frac{1}{2}$. The 8 frames will take 11 inches, leaving $\frac{1}{2}$. In that $\frac{1}{2}$ space we are to hang a dummy, say $\frac{3}{8}$ thick. In order to make sure the dummy shall

ADVANTAGES OF SELF-SPACING FRAMES.

DR. MILLER ASKS, WHAT HIVE AND FRAME SHALL A BEE-KEEPER ADOPT IF CIRCUMSTANCES ARE SUCH THAT HE IS IN POSITION TO START ANEW?

When one has settled on a frame, he has gone a long way toward deciding the hive he shall use. As I prefer the frame that is used in the Dovetail, with only such variations as shall make no difference in the size of the hive, perhaps I can do no better than to adopt the Dovetail. But it will do no harm to talk the matter over before deciding.

On looking at a Dovetail hive, my first thought was, "I shall never be satisfied with a hive having only hand-holes for handling, with no cleats." And that's my last thought on that point, after quite a little experience. A hand-hole doesn't give you so good a hold as a cleat made of $\frac{1}{2}$ stuff. The cleat gives a choice as to what spot you will take hold, and it is often more convenient or easy to take hold at some other point than right at the center of the width of the hive, where the hand-holes are. Then, too, I don't always handle a hive alone, but often want to lift it with some one else. Two persons can very readily pick up a hive with cleats, but it's a very awkward affair if there are only hand-holes. You may reply, "It's much better for one to handle a hive alone." You may not always say that. Besides, you can handle it alone better with cleats.

The weakest part of a hive is the thin piece left by rabbeting the upper part of the ends.

not crowd too close against the comb, we must, either by an end-bar on the dummy, or by some other means, have a projection of $\frac{1}{8}$ inch, and, indeed, we want this $\frac{1}{8}$ projection on both sides of the dummy, for the little strips in each corner of the hive will keep the dummy only $\frac{1}{8}$ inch away from the side of the hive, allowing bees to be crushed. If the end-bars of the dummy project $\frac{1}{8}$ on each side, that will make sure always of a space at least $\frac{1}{4}$ inch between the dummy and the side of the hive, and also between the dummy and the first comb. That makes the end-bar of the dummy take up $\frac{3}{8}$ of the $\frac{7}{8}$ space we had, leaving $\frac{1}{4}$ inch play.

Now push the dummy close up against the frames, and this $\frac{1}{4}$ -inch play, together with the $\frac{3}{8}$ -inch strip in the hive-corner and the $\frac{1}{8}$ projection of the end-bar, will make a $\frac{1}{2}$ -inch space between the dummy and the side of the hive. The question may arise, whether there is any danger of bees building in that half-inch space. I think hardly; but in actual practice there will probably be less than half an inch space; for as soon as the bees have a little chance at gluing, the 8 frames will not be got into 11 inches, and my only fear is, that the $\frac{1}{4}$ -inch play will hardly be enough. Possibly it might be better to make the dummy of $\frac{1}{4}$ stuff, and thus get $\frac{1}{8}$ more play.

Of course, planned as I have indicated there is nothing to hinder any one from wedging up the dummy if he wishes. A wedge could be put in for hauling, or in any case where the hive was to be rolled over and over, and left out for ordinary usage.

Now, what's wrong in such a hive? Should the space between end-bar and hive be $\frac{1}{8}$ or $\frac{3}{8}$? Should the dummy be $\frac{1}{4}$ or $\frac{3}{8}$ stuff?

Marengo, Ill.

C. C. MILLER.

[Before we proceed to the several points suggested by Dr. Miller, we want to go on record as saying, with our good friend, that we are willing to be converted from the error of our ways—that is, we do not wish ever to get into a rut where we can not get out—or, more specifically, into accepted lines of bee-appliances when there may be something better.

We will admit, with the doctor, that there are some decided advantages in the old-style Hoffman frames having top-bars widened at the ends so as to fill up the space and cover up entirely the rabbet; but we could not adopt that style of top-bar without changing the length of the standard Langstroth top-bar: and for a supply-dealer this would be an insurmountable obstacle. Mr. Hoffman uses a rabbet only about $\frac{3}{8}$ wide and $\frac{1}{4}$ deep, the tops of the frames coming exactly flush with the top of the hive. To make the rabbet only $\frac{1}{4}$ inch wide would shorten the Langstroth top-bar to 18 $\frac{3}{8}$ inches, and this is out of the question, especially when we take into consideration another fact—that, in order to get the full benefit of this rabbet, the bee-spaces must be changed from the top of the hive to the under side, so the frames will, in every case, come flush with the top edges of the hive. Enamel cloth, according to Mr. Hoffman, would then be laid squarely on top of the frames. This would cover up entirely the widened ends of the top-bars, preventing accumulations of propolis from the top side, all of which is very nice; but bee-keepers nowadays do not want enameled cloths; neither do they want bee-spaces discarded from the top of the hive. This being the case, we were under the necessity of making a compromise, using the tin rabbet and straight top-bars.

But you say, doctor, "Why not have kept on with the same original Hoffman frames we started out with?" Because the rabbet in the

hive had to be $\frac{1}{2}$ inch wide—so wide, indeed, that we found it killed a good many bees when these widened ends came down into place. Then we found, also, that the average bee-keeper will not nail end-bars so they will come exactly flush and even with the corresponding widened part of the top-bar; therefore to preserve the bee-spaces as they were, and preserve the length of the top-bar, and to simplify its construction as well as reduce the expense, we adopted what seemed to us then, and what seems to us now, to be a better arrangement. So far we have had a good many letters, approving of the change in the Hoffman frames where the two have been tried side by side, and our experience points in the same way.

Now in regard to that V edge. We are well aware that, theoretically, this is objectionable, and perhaps it is so from a *practical* point of view in some localities;* but we are of the opinion, doctor, that, if you were to try the square edges and the V edges for a couple of years, side by side, you would decide with Mr. Hoffman, Mr. J. H. Nellis, and the other bee-keepers who were pioneers in the use of this frame; and, besides, you may remember that we first started with the square edges, and were very glad to change to the V edge. We should be pleased to have more reports from those who have tried the old style and new-style Hoffman frames together. We should like to know *particularly* whether the V edge proves objectionable.

There is no need of wedging the dummy unless Hoffman end-bars having *square* edges are used. This is one of the reasons why we prefer the V edges. The dummy for 1894 will have a slight bee-space on each side, and a top-bar that will enable the manipulator to draw it out easily.

Your objections to loose hanging frames, and points in favor of the self-spacing frames, are all well taken. We have tried for two or three years back to preach that sort of doctrine; and the result is, that bee-keepers in the West are beginning to agree with the bee-keepers in the East, who have generally held to the self-spacing frames for many years. But, taking it all in all, we do not expect that the bee-keeping fraternity will adopt them exclusively. If propolis were ten times worse than it is in Medina (and we have never been in a locality where it seems to be any worse, so far as we could discover from hive-appliances), we would use loose hanging frames. At the same time, we recognize that there are many other competent bee-keepers who think differently, and, very possibly, can produce their crops of honey as cheaply per pound as do those of us who hold to the other view. Of late we have said little or nothing in favor of thick bars for self-spacing frames, and had thought that we would say nothing, but let them speak for themselves. We should have said nothing at this time except that Dr. Miller calls for this footnote, and here it is.]

THOSE BEE-ESCAPES.

CIRCUMSTANCES WHEN THEY ARE AND ARE NOT INDISPENSABLE.

I see by your footnote to the article of E. France, page 777, that you ask for more opinions on the escape, from those producing either or both extracted and comb honey; and as I have tried both, and the escape for both, I will contribute some proof both ways, for and against the escape.

Now, I must say that Mr. France is right about not wanting the escape, and can get

along without it. I have proved to others a great many times that the escape was useless, and just as many times I have proved it to be an indispensable article of the apiary. There are two chief conditions wherein it is contradictory both ways. If I am working for comb honey, using separator-section supers, and a good flow of honey, I would not take any bee-escape as a gift, and be paid to use it, because they are a nuisance, from the fact that the apiarist usually picks out sections here and there, but does not take the whole super clean; and the smoker does, as Mr. France says, send the bees out of the way, and a brush will finish the few left. But if the non-separator-section super is used like the Heddon, the escape does very well, and in that case the bees can be nearly or quite all driven out as quickly as the escape can be used, the super overhauled, re-filled, and returned to the hive without any trouble. It has proved just the same with me when using the second and third stories for extracting, or for the wide frames for sections.

We will now look at the other side, taking the meager, light, and dashy honey-flow where there is a rush for a few days, then a stop for two or three days, then another dash of a flow at the closing-up of a flow of honey, and there are hundreds of sections to come off, then the bee-escape is a boon, or, as some have said, a Godsend to the apiarist, and a thing that he can not do without unless he wants to have his nice sections spoiled by the bees puncturing them, as they nearly always do when there is a poor flow of honey, or at the end of the season; then the escape has proved with me to be indispensable. And then, repeated trials have convinced me that the double-cone Reese is the best, with cones at least 2 inches deep ($2\frac{1}{2}$ inches is better), with the space between the board the cones are on and the tops of the sections or frames below not less than three to four inches, so that the bees may have plenty of room to cluster.

At these necessary times referred to I would just as soon have six or eight escapes as to have a good helper to take off sections, or to clear extractor-cases; and for their benefit, when they are needed, any one can afford to house them when not needed. Another time when they are extremely valuable is, that there are in some places, and in some seasons, times when the bees are gathering to their utmost ability from daylight till 9 to 11 A. M.; and during the rest of the day, or till perhaps 5 P. M., there would be robbing at every move or at every hive that is opened. At such times, put on a dozen or more escapes, as the case may be, late in the afternoon. The next morning, or during the forenoon, take off the cases free of bees, or do such other work as is necessary while the bees are busy; and during the time from 11 A. M. till late in the afternoon you have the benefit of the escape, cleaned sections, or extracting-cases. Therefore the argumentative expert bee-keeper, taking season, location, honey-flow, and number of colonies, and whether there are other bees near, all into consideration, can, if he chooses, prove that the bee-escapes are worthless or unnecessary, or one of the indispensables in the apiary, and that it is next to impossible to do without them. I have seen the need of them, and I have thrown them aside; then perhaps in three days or a week I have been obliged to use them again.

But I would say, have some of them, and don't be satisfied with only one exit in a board. In my Reese's I have six or eight cones. I prefer eight in the place of six, because, the more escape-holes, the less pricking is done to the sections, and the freer they are cleaned of bees, whether section or extracting - supers.

But if extracting supers, and there are any larvæ (uncapped brood) in the case, don't expect any known escape to clean the case, although it may.

H. L. JEFFREY.

Woodbury, Ct., Oct. 21.

[You have corroborated and added facts in proof of our statement to the effect that there are times when the bee-escape can be used to advantage, and there are times when it can not. This is a practical question, and we should be glad of further testimony.]

AN EXPERIMENT WITH GRAPES.

HOW TO SAVE THEM AND HOW TO MAKE JELLY WITHOUT SUGAR.

I see, by the last GLEANINGS, that you have been using up your grapes in jellies and unfermented wine. This is good. The grape is good food in any way you can use it, if it is not allowed to ferment, when its food qualities disappear and its power to "deceive" and "bite" takes their place.

This year I had a good many grapes, and I resolved to try an experiment. I am not myself partial to fruit that is sweetened. I want the natural sweetness combined with the natural acid. To get them from the grape, the skins must be worked with the pulp; for the acid and coloring matter seem to be in the skin. We usually get both when we cook the grape. Could we get them by treating them as apples are treated at the press? And then, could the expressed juice be turned into jelly, as apple juice is turned into jelly by the steam-evaporator?

To settle these questions I sent some 400 lbs. of grapes to the cider-mill to be ground and pressed, and the juice evaporated into jelly—if it could be—using no particle of sugar in the process. The grapes were ground, then pressed, making some 33 gallons of juice, which was run over the evaporator immediately, and came out very fine jelly. The 33 gallons made $5\frac{1}{2}$ gallons of jelly, at a cost, all together, including grapes, hauling, pressing, and jellifying, of \$1.00 per gallon. This jelly I can eat every day, and three times a day, without satiety—a thing I can not do with any of the fruits put up in sugar. It answers as a table sauce, and, in an emergency, can be converted into wine—sweet as the ancient Jews used in their passover feasts, when all leavened or fermented things were by law put out of their houses.

This experiment I made in the interests of temperance, to show that our grapes need not be turned into grape juice, to be fermented and alcoholized, and labeled as "Champaign," "Port," or "Heidsieck," etc., and put on the market for the simple to "look upon" and be "bitten" by them.

The result proves this:

1. That the ripest and best grapes make the best jelly.

2. That no sugar is needed to make jelly.

3. That all our extra grapes can thus be kept in a convenient form for continual use.

4. That there will be no excuse for turning the surplus grapes into the wine of commerce, as soon as the preceding facts are made known to grape-raisers; and it is certain that they need to know them, now that grape-raising has come to be so general, and the crop so large, that good grapes from Northern Ohio were selling this month in the Cincinnati markets for 15 to 20 cents per 10-lb. basket.

G. A. ADAMS.

Perrysburg, O., Oct. 21.

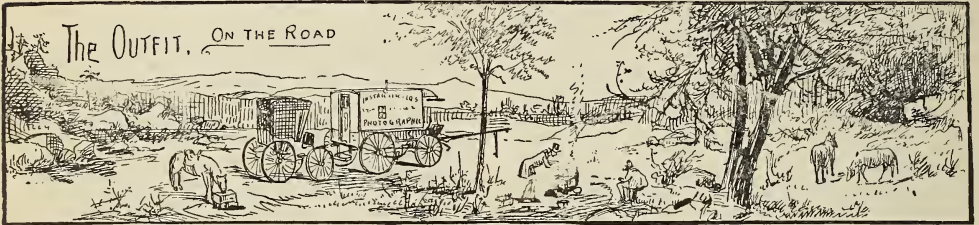
RAMBLE 96.

RAMBLER OUT PHOTOGRAPHING.

It has often been said, that the occupation of bee-keeping in California enlists the attention of the bee-keeper for only a limited time; and the saying has some force to it when a person has been in the field for only a year or more. That the bee-keeper could spend more time with his bees, and that some do, is also evident; but the great majority of the fraternity give attention to their apiaries only through the honey-season, and scrimp the time to the least number of months possible; therefore, according to the investment and labor performed, and the tolerable certainty of a crop, California is

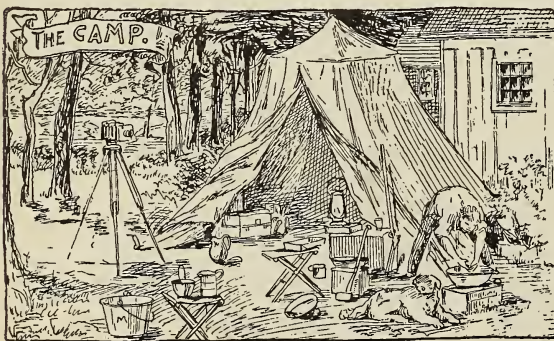
the buggy were two dogs, and behind was a led horse. The outfit did not fail to attract attention. I consented to take the place of the senior member of the firm for a few days; and with the junior member, a young man of various accomplishments, I set out from San Bernardino for fresh fields to conquer.

The plan pursued by a traveling outfit of this kind is, to enter some of the smaller towns and proceed on speculation, or "speck" the town, as the fraternity say. Instead of going around and asking persons if they wish a photo taken of their house or store, or an interior flash-light in the evening, and which would result, in a majority of cases, in a negative answer, the camera is taken out on the main street, and several exposures made. Here our junior member



equal to any country in the world for the cheap production of honey; and to a bee-keeper who owns a grain, fruit, or poultry ranch, which needs more or less attention through the year, the profits from the apiary seem to be a clear gain; while the few weeks spent in the cabin in the foot-hills, where the apiary is generally located, is regarded more as an outing than as a period of labor.

Many bee-keepers, however, who have not invested in a home of their own, with all of the concomitants of wife, babies, dogs, cats, and quarrelsome neighbors, take up with almost any kind of honorable labor between times;



and it was owing to the fact that idleness stared him in the face that the Rambler consented to go for a while with a traveling photographic outfit. As a large number of bee-keepers are interested in this art, and a larger number are interested in the half-tones made from time to time, I will give a few episodes from my brief journey with the outfit.

The apparatus consisted of a covered wagon, which served as a dark-room, and in which were carried all accessories of the art, and a compact camping-outfit. Two black horses, of uncertain age and certain spareness, were attached to this. A buggy trailed behind. In

put in practice one of his accomplishments; and that was, in getting people out and in range of the camera. When a few exposures are made, the plates are taken to the wagon, developed and dried, and a proof taken. This proof is then shown to the various individuals, and several orders are taken, provided the town has not been "specked" recently by other parties.

Our first halt was for a few hours in Riverside, where our junior fell in love with a mule team for which he traded our team of horses. The mules were matched by contrast—one large white mule, with huge ears and cocked ankles; the other, a pudgy black mule of uncertain age and disposition. Upon going forward we discovered that the black mule required considerable whip-work to get him along. His hide seemed to be remarkably tough; but, like the Kodak, if the right spot was touched, the mule's heels would do the rest. The mule team was, however, put through the whole length of magnificent Magnolia Avenue, fifteen miles, to South Riverside, where, late in the evening, we pitched our tent. Here we stopped a few days and "specked" the town with profit, and where my junior got into two foot-races and was beaten.

From South Riverside we followed the Santa Ana River toward the sea; and as the shades of night began to fall we lost our road and were compelled to camp. Finding a grassy plot where our mules and led horse could feed, we pitched our tent; but, alas for our own appetites! we had not a morsel of food with us, and not a drop of water near. So we retired, hungry and thirsty. My junior, who had been singing and whistling "After the Ball" all day, crawled into his cot as demure as a jack-rabbit, and we were both quite silent until next day at ten o'clock, when we arrived at a little Mexican grocery where we found eatables in the shape of crackers and sardines, and didn't feel much hunger after all. In our camp the previous night I discovered the utility of having two

dogs along during the daytime. The dogs very kindly carried the fleas, and, during the night, we carried them, or, rather, dug our fingers after them. There's nothing like having a mutual understanding with our domestic animals. □ In Santa Ana we made a stop of several days, and worked the flash-light branch of the business on interiors. While in Santa Ana we camped near the race-track, where there was a number of horses of all sizes and degrees. By the exercise of persistent endeavor, my junior traded the pudgy mule for an old, poor, and blind pinto. The pinto, however, had the go in him, and made a very good match for the white mule.

The stables at the race-course were occupied by quite a number of noted horses, all in training for the races that were soon to come off. In contact with the horsemen here, as in other places, and especially around livery-stables, I notice that those who have much to do with the noble horse are usually very profane men, and their conversation is interlarded with oaths. Texas Jack seemed to be the chief sinner in this crowd, as well as something of a singer, wherein his songs were of the race and bets. A well-regulated stable for a fast horse has almost as many traps as one will find in an apiary. Pads, toe-weights, heel-weights, hoof-cleaners, and many other things come into daily use while the horse is in training.

hollow, and acts as an air-cushion to hold the plant upright in the water.

During our stay at the beach my junior got hold of another song; and the refrain, "Oh! then let us kiss and make up," was frequently rung in my ears; but owing to the fact that the



FROM THE SEA.

junior's best girl was at the beach also, and the song was warbled for her benefit the greater share of the time, the bore was not so great as it otherwise would have been. But, oh dear! when we were all ready to depart, what a waiting-time I had of it for them to bid each other farewell! and Mr. Editor, will you please tell your anonymous ladies and others, that I won't be hampered that way, nohow? After we had returned to Santa Ana, and the senior photographer had taken up the line of work, how nicely I did take up my old black pancake griddle and swing it over my head and shout the shout of freedom! No, Miss or Mrs. Anonymous, don't you dare to say any thing more to me about matrimony. I am a confirmed, crusty old bachelor; and the more you say in favor of matrimony, the "confirmdr" I get; and to express to you how I feel here in California, I will ask you to read the following quotation:

Since I came to California,
Like a vision I recall
How the winters used to linger
Just to greet the coming fall.
There was just a breath of summer
"Twixt the autumn and the spring,
And frozen ears and noses
Were a very frequent thing.
But here's the land of sunshine,
Where blizzards never blow—
Where the bees are always busy,
And the roses love to grow—
Where nature seems a smiling
In happiness and glee;
Right here in California, baching's
Good enough for me.

THE RAMBLER.



LANGDON NON-SWARMER A SUCCESS.

A SUGGESTED IMPROVEMENT.

I have wanted to report about the Langdon non-swarmers for some time, but there seem to be many reporting failures. They have been an entire success with me, and I think they can be with all practical bee-keepers. I don't think I make mine quite like Mr. Langdon's. I don't have to bore any hole in my hives—the Dove-tailed. The bees should be turned from one hive to the other every four or five days during swarming time. One needs to be very careful to get them adjusted bee-tight. I never had any trouble with bees destroying brood except eggs. This will cause the colonies to be a little weak for the fall flow, if there is any. I had trouble when I tried to requeen these colonies. Bees enough would get back through the cone so that they would ball the queen. To remedy this I closed the cone, then all went well.

Here is the only plan by which I can procure honey here: I place a case of half-depth frames on hives for extracted honey without any queen-excluder between. They will soon go to work in these, and the queen will soon commence laying. As soon as they are nearly filled I raise them (be sure to run the queen below),

□ We left the active scenes around Santa Ana and dropped a few miles further along, and camped at the noted bathing and summer resort of Newport Beach. Our visit was, however, ill timed for business, for the pleasure-seekers were rapidly leaving for their homes, and the beach was a dull place indeed. About the only thing to be done was to bathe once a day, and then roll in the white pure sand, said sand being composed of pulverized sea-shells. A further recreation was to go out on the long wharf and fish, or look at others patiently waiting for a nibble. I found our bee-keepers, Mr. and Mrs. Bonfoey, of South Riverside, here. Mr. B.'s hobby was the spearing of large fish. His method of spearing was radically different from mine. While he was fond of throwing his four-tined Neptune-like spear with great precision into the finny denizens of the salt sea, I prefer to spear them with a four-tined fork at the breakfast table, and am quite an expert in my line as Mr. B. is in his. Mrs. B. is an expert cook in the fish department.

Old ocean throws up many a curiosity in the shape of shells and sea-weeds. The kelp that is thrown up is provided with a perfectly round ball six inches and over in diameter. This is

put on an excluder with a case of sections between this and the upper case, and you will get honey if there is any to be had. I have secured 30 lbs. extracted honey and 24 lbs. comb honey from colonies worked this way, when others have not made over 15 to 20 lbs. per colony, comb. Now, my colonies worked with non-swarmers on have stored two pairs of 70 lbs. each, comb honey; two pairs of 60 lbs. each, extracted honey.

In the way of feeding back I have secured these results: I have fed one colony 70 lbs. extracted, and received 60 lbs. comb; I also fed one colony 60 lbs. extracted, and received 50 lbs. comb.

C. S. NEVINS.

Wagstaff, Kan., Sept. 16.

[I sent the above to Mr. Langdon, who replies:]

My experience during the past season shows that my circular is wrong. The slide should be changed once in *four* days instead of *seven*. It also says (which friend Nevins likely did not see), that, if a rim were nailed on the back of the device, no hole would be needed in the hive. I shall make them all so the coming season.

I did not find that the bees were light for the fall flow, though I have had them heavier. One thing is sure—if they are lighter than they would otherwise be, there is not a great army of bees to board during the interval between basswood and goldenrod. The effect is the same as though the queen had been caged, and there is a saving in that. The plan of ventilation given by friend N. is along the line that I have adopted for use next season.

Mr. Nevins' experience is another straw to prove that running two working forces together can not be excelled or equaled for getting bees to work in the supers, especially if there is a short crop.

I claim as strongly as ever, notwithstanding the adverse reports that have been given against the non-swarmers, that, if the bees are given proper room in the supers, with good ventilation, so as to be *comfortable*, they can be kept from swarming with an increased yield of honey by the use of my device. My success with them on my house-apiary is better proof on this point than most of these reports have been that they will not work. Something was at fault that could have been remedied.

H. P. LANGDON.

East Constable, N. Y., Oct. 4.

THE NORTH AMERICAN BEE-KEEPERS' CONVENTION AT CHICAGO.

Continued from last issue, page 818.

In our last issue we left off with the address of welcome, from the editor of the *American Bee Journal*. Following this was the

PRESIDENT'S ADDRESS.

The doctor said, in looking over the published list of names of those who were to be at this convention, he could count a quarter of a hundred, any one of whom it would be a real pleasure to spend a solid day with in bee-talk. The opportunity of meeting all of these, and more, at one time and place, was a red-letter event. They were not assembled for bee-talk alone. No mean part of the enjoyment was the meeting of old friends, and the cordial grasp of the hand; and why should they not have a sociable time? The doctor, while acknowledging the propriety of going through with the formality of an introduction, the third person making the other two acquainted, thought it also proper, as they were all bee-

keepers, for two strangers to get acquainted after this fashion: "My name is Smith—who are you?" Continuing he said, "Our journals are invaluable; but the rapid exchange of ideas allowed in discussions at a convention has brought to light many a truth that otherwise would not have become public property."

There were many interesting topics for discussion, but he made an earnest exhortation for the full use of the question-box; for in no other way could they meet the wants of all.

This address was followed by a report from the treasurer, showing a balance due of \$4.22. Following this was an able address from Prof. A. J. Cook, entitled

BEE CULTURE AT OUR EXPERIMENT STATIONS.

Bee-keeping, he said, had merits that very few of even the bee-keepers themselves appreciated. It not only gathered up the most wholesome article of food, but conferred an added benefit in the important work of pollinizing flowers. There was no question but that the productiveness of many of the fruits and vegetables was often tremendously increased by bees. It was true, that other insects aided somewhat in pollinizing but to a very small extent in comparison with the bees, and the latter were ready early in the spring. Our experiment stations were the product of the civilization of the nineteenth century, and the United States government, recognizing the importance of agriculture, and the added impetus given to any business, had donated \$15,000 annually to each State, to be expended in experiments in agriculture; and 47 States and Territories had availed themselves of this. Thus three-quarters of a million of dollars were spent annually in the interest of agriculture. Apiculture was a very important branch of agriculture; yet in the face of all this, only 4 of the 47 States had done any thing to promote the interests of bee-keeping. Probably not \$2000 was spent in experiments in apiculture, against three-fourths of a million spent annually for agriculture. This, he thought, was a stupendous injustice, and that, in all modesty, bee-keepers had a right to claim \$1000 annually in behalf of their pursuit; then \$40,000, instead of the scant \$2000, would be expended. He suggested that each State association appoint a good committee of live, wide-awake bee-keepers, to wait on the Board of Directors of the several stations and set forth the reasonableness of their demand. This act should be supplemented further by personal letters. Bee culture had met with many disasters during the last few years, and wise experimental work and assistance from the State was what was needed. If there should not be a waking-up along the line, it was because bee-keepers were asleep to their own interests.

A discussion followed, in which it was asked what States had made a move in this direction. Prof. Cook named Rhode Island, Iowa, Colorado, Maryland, and California. In the White City the display of the bee-keeping industry was not what it should be. For instance, in the California building all other industries were represented, but honey was not shown.

A paper was then read, from Mrs. Axtell, on the subject—

WHAT OUR EXPERIENCE WITH BEES HAS TAUGHT US DURING THE PAST FEW YEARS.

They had learned that it was not wise for *them* to make bee-keeping a specialty, but, rather, a side issue; and yet they always aimed to let nothing cause them to neglect the bees. Thus, if bees failed them the other business would enable them to make a living. Again, experience had taught them that *large* brood-

nests pay best, taking one season with another, because they save time in taking out and replacing combs for the purpose of reducing the brood-nest in winter and in expanding it at other times. Where one has 100 or 200 colonies, they think the handling of combs made quite an item. It was better to have too large a brood-nest than one too small. They had learned, also, that, so long as bees paid so poorly, it did not pay to try to build up weak colonies by feeding, unless they had valuable queens; and, lastly, that a good colony with a large brood-chamber left alone, and not drawn upon for either honey or brood, would seldom pass a season without getting enough to winter on.

Some little discussion followed this paper, in which it was held that the points were more applicable to the locality of Mrs. Axtell. R. L. Taylor asked, why, if she liked large hives because of the trouble of handling combs, not have the Heddon? C. P. Dadant said that those colonies that do not swarm from year to year supersede their queens as readily as those that do swarm. The question was asked:

WHICH IS BETTER—EIGHT OR TEN FRAME HIVES?

Considerable discussion took place. Some held that a ten-frame hive, when necessary, could be reduced to 8 frames by means of dummies. As usual, some preferred one and some another. When a show of hands was called for, it was found that 16 favored the ten-frame hive and 42 the eight-frame. The rest present evidently did not know. It was then asked how many had changed from an eight to a ten frame hive. A rising vote showed only one. When it was asked how many had changed from ten to eight, 24 responded. R. L. Taylor thought it was a question of locality, and what the queen could do before the honey-flow. There was such a thing as having too much room. J. M. Hambaugh wanted all the bees he could get, and therefore preferred a large brood-nest.

THE LANGSTROTH FUND.

At this point a letter was read from the Rev. L. L. Langstroth, extending his greetings to the convention. As Mr. L. was in somewhat strained circumstances, Mr. Thos. G. Newman made a strong appeal, and urged that bee-keepers, inasmuch as they owed Mr. L. a great debt, should give such sums as they felt able. In response to this, the sum of \$44.00 was collected on the spot, and the rest was arranged to be sent to Mr. G. W. York, 56 Fifth Ave., Chicago.

The question-box was resumed again. It was asked, "Have the Syrians any points of superiority?" Mr. Taylor thought they excelled in the *hinder* point. Mr. Frank Benton, the secretary, who had handled them in their purity at Beyrout, Syria, said they had some good qualities. They required a sparing use of smoke; were very prolific—too much so; but this could be regulated. In reply to the question as to how the Carniolan bee could be distinguished from the blacks, he said they were slightly larger, with light silver-gray bands, giving them a ringy appearance. As to their action, they do not run off their combs as do the blacks. When he handled them in their native country he rarely had use for the veil. When found to be cross in this country he would hardly think them to be pure. In comparison with the Italians he thought them generally gentler.

HAS THE MATING OF QUEENS IN CONFINEMENT BEEN SUCCESSFUL?

Dr. Miller thought not. Dr. C. V. Riley,

entomologist at Washington, had been deeply interested in the question, and, in spite of the failures in the past, he thought the problem might yet be solved, and that the Department of Agriculture would investigate the question.

STANDING VERSUS HANGING FRAMES.

The question was asked how many preferred standing frames. A vote showed 9, while 49 preferred loose hanging frames.

EVENING SESSION. FIRST DAY.

The place of the next meeting was then discussed. Several places were named, among which were Toronto, San Francisco, Denver, Los Angeles, Buffalo, Columbus, and St. Joseph. After some discussion, a vote showed that St. Joseph was preferred by a majority.

The election of officers was next in order, and resulted as follows: For president, E. T. Abbott, of St. Joseph, Mo.; vice-president, O. L. Hershiser; secretary, Frank Benton; treasurer, G. W. York.

Next followed a question on the subject of—
HOW CAN THE MEETINGS OF THE N. A. B. K. A. BE IMPROVED?

It was urged by some that the society be more representative. At present it was getting to be too local, as the list of members showed; that the society should be thoroughly organized and affiliated with State organizations, and that each affiliated society should send one or more delegates. Comparison was made with the European societies, and it was urged that the N. A. B. K. A. be more like them. The president acknowledged that our meetings were not as large as those in Europe, and asked the secretary, Mr. Benton, in regard to it. The latter said that, at one meeting in Frankfurt, Germany, they had an attendance of 400; that they also had a large exhibition of bee-appliances, fruits preserved in honey, etc. The society included Austria and Germany. Prof. Cook, while acknowledging that, while all this was very nice for Europe, it was entirely impracticable in the United States. Our country was, he said, too large, and the traveling expenses too great; but in spite of this we needed not to feel bad, because we had good conventions as it was; and as the bee-papers gave reports, those who were not able to attend were able to get the discussions. C. P. Dadant agreed with Prof. Cook, and added that he had tried very hard to get the State and Provincial organizations to affiliate with the N. A. B. K. A., but failed.

Continued.

THOSE OLD BEE-BOOKS.

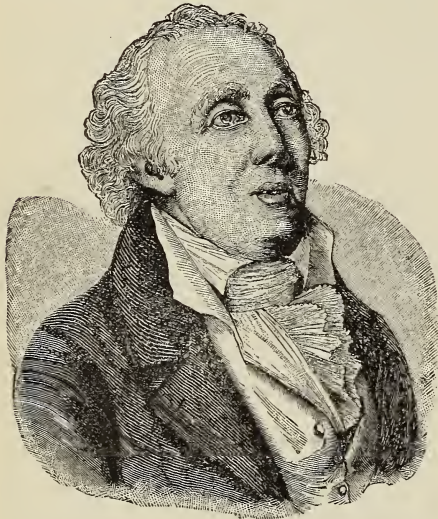
HUBER'S WORKS.

Those who have GLEANINGS for 1889 will find on page 389 for that year a picture of the celebrated man whose works I have before me; also as much of his history as will be sufficient for our purpose. We give the picture here again. Huber's method of conducting experiments with bees by the help of his wife, and a servant named Burnens, is, I assume, familiar to all. The praise lavished on Huber by the civilized world has been unstinted. By almost universal consent he occupies a front seat among naturalists and bee-men; and my talk to-day will, I fear, run more on the man than on his book.

The high position occupied by Huber is due to several causes, the first of which I would attribute to the real merit of his discoveries. But no matter how valuable or otherwise those discoveries were to the world, the very fact that they were the result of a purely mental effort on Huber's part would enlist our sympathy to a great

er extent than if he had used his own eyes instead of those of his servant. The boy pianist, Hoffman, when in America, would bring an audience to tears by his marvelous rendition of the best works of the great masters; but if he plays the same pieces better and better till he is of middle age the tears will dry up, and at best nothing but a clap of the hands remain. We are very apt to make allowance for the weak and unfortunate, and it is well that we do.

It is impossible for me, and I presume it is for anybody, to state just how much originality may be found in Huber's "Observations," and just how far his conclusions are now accepted by bee-keepers. In Mr. Kellen's article, referred to above, which I translated from the German, he says:



FRANCIS HUBER—BORN 1750, DIED 1831.

"Francis Huber, by his investigations and researches in apiculture, did more to promote this science than all his predecessors who had employed themselves in the study of this interesting insect. It is his discoveries alone that marked that golden age in the history of apiculture which is destined to remain for all ages. Huber's observations are not only of the greatest importance in themselves, but wonderful for the manner in which they were made; for Huber was blind."

Now, that is a strong statement, and yet I am not ready to deny it in any particular; but how are we to account for what seems to me to be a fact, that, so far as honey is concerned, no apparent increase in its production is noticed or recorded in the fifty years after Huber's works were published, over the fifty years preceding that event? That is, how much did he help the producer of honey? Certainly his works cleared the sky of most of the abominable superstitions connected with the bee up to his time, and after that the ground seemed cleared off and leveled in anticipation of an edifice which should endure as long as bees swarm. But why does the scientific world make so much of Huber, and the bee-keeping world never mention him except as an ornament? I do not know that the name of Huber is now used by any association of bee-men, or in connection with any hive or frame now in vogue; and yet the man and his works have occupied a place in the literary world, the glory of which the lapse of about a century has not dimmed; and as time passes, the inquiring face of the blind philoso-

pher will sink deeper and deeper into our affections, and cause us to rejoice that his inheritance is (or will be some time) in a land

"Bright, bright as day"—

where eyes, if needed, will not be dimmed by tears nor blindness.

The fact is, there are two sides to this matter, just as there are two blades to a pair of shears, and each is the complement of the other; at least, we will "play so," as friend Hasty once put it about Virgil. The work performed by Huber was, in the main, in reference to the bee as such—its habits, social economy, methods of propagation, etc. He covered a ground in this respect far in advance of what the scientific world then held, even if later writers have modified these conclusions in some of their minor details. He spread a canvas on the frame, on which a later genius put the picture which will remain; but which of the two men deserves the more credit is of no more account to me than it is to determine whether the paper I write on is of more consequence than the ink, or the ink than the pen. The three are very convenient.

LANGSTROTH

is the one who, doubtless, will always be mentioned as the complement of or successor to Huber. Beginning his researches at about the time Huber died, he so enabled the bees to direct their efforts that, within the memory of nearly all of us, the production of honey has assumed such proportions as to elicit the greatest expressions of surprise in those parts of the world where "the good old way" still largely prevails. Honey, in our country, has ceased to be a luxury, in my opinion, on account of its cheapness, although some do not so consider it. From this we see that Huber determined the thing itself, while Langstroth modified essentially the surroundings. We see an analogy to this when Franklin proved the identity of electricity and lightning. That was necessary; but it remained for Morse to provide a medium for the fluid that now compresses the world within the compass of a daily newspaper, and for others to light our cities with it, draw cars, and revolutionize the very framework of commerce. If, then, the relation which a bee sustains to the world may be so materially improved by better surroundings, who shall say that a man's conditions and environments do not materially affect his usefulness as respects society at large? A bee can never do any thing not peculiar to a bee; in other words, within certain limits it must "act as built." Huber largely determined those limits, while Langstroth gave the best possible opportunity for the *exercise* of what nature made. In a like manner, society should provide the best facilities for the exercise of human action in a profitable channel, and discourage, as much as possible, the wrong use of human ability. A man is not "built" until he has, at the end of life, passed through this channel. Life consists of "being built."

I have used the word "Langstroth" in a rather comprehensive or generic sense above, and I mean by it not only the Langstroth hive and frame, pure and simple, but every modification of either, or any hive whatever which has been invented under the incitement of what may be termed Langstrothism—a period of time which may be said, in general terms, to reach from 1852 to 1893.

Although Huber's works are not, I believe, now in type, they may be easily obtained, especially in French, the language in which they were written. They have been translated into several languages;* but their real value, aside

* In GLEANINGS for July 1st, 1884, will be found an article of great interest, from the pen of Thos. Wm.

from a literary point of view, is absolutely nothing when compared with Dadant's "Revised Langstroth," Cowan's or Cheshire's apicultural works, Cook's Manual, and some others. But the perusal of Huber can not, it seems to me, fail to add largely to the interest of bee-keeping, and that alone is worth a great deal. A farmer friend of mine once became tired of his farm, and thought of leaving it; but becoming interested in geology he studied the nature of the rocks and ravines on his place, and actually fell in love with it. Instead of plowing in uninteresting dirt he felt glad to dig in soil where the deinotheriums, iguanodons, and plesiosaurus used to wage battle and root around. Knowledge makes work pleasant, and changes a star into a beautiful world through the medium of the inner eye. By all means, read Huber, even if he is a yesterday's sunrise. One of his last sayings is well worth remembering: "One thing I have never been able to learn; that is, to forget to love."

Medina, Nov. 2.

W. P. Root.

POOR QUEENS.

HEREDITY IN QUEENS, AND HOW FAR BACK GOOD AND BAD TRAITS MAY COME.

For the benefit of those who want queens from the one described by me in August 15th GLEANINGS, and for the benefit of all beginners, I should like to say a few words further. That queen, along with the others in my yard, seemed to get a bad chill last winter. I feared she could not survive another winter. I made haste to get from her what young queens I needed; then, as she seemed to be failing, I pinched her and put in a capped cell.

Beginners err in thinking they will be "fixed" if they get a queen from some great one. Extra-good queens will be likely to transmit their good qualities. At the same time, the daughter may mate with something objectionable. From that imported queen I got just one that mated to suit me. Now she is dead. I have nine of her daughters. I hope some of them possessing their mother's good qualities may mate to suit me.

On page 637 I said the queen left only one cell. I hunted for cells for perhaps three or four days to requeen with, and then, being busy, gave it up. When time to hatch, I looked; but the cell was hatched. That queen had destroyed three or four very fine cells that the bees had built in the meantime. That scored another good quality, the young queens destroying cells to prevent after-swarming.

For those young queens to mate three-banded Italian will be a small consideration. A good comb-honey season will be the test. I also intend to breed for bees that will go into the sections without bait sections.

Every bee-keeper in the land should interest himself in the destruction of poor queens. Poor people sometimes buy them. They not only lose the few cents paid for the queen, but lose the product of that colony for a year; or, if good honey-gatherers, they may be so cross as to be a vexation. Some seem to think even a poor queen will do to winter a colony. What good is such a colony after it is wintered?

A few days ago I killed a daughter of that great queen because I scored so many points against her. First, the colony built and capped several queen-cells while she was a virgin

Cowan, relative to all the works of Huber—time of printing, etc. He refers to the edition of 1841, which I have used. He also speaks of 1004 "old bee-books," reaching down from 1472. Of these, 505 were in German; 133 French, 98 English.

in the hive. I concluded to tolerate that. I tried to blame that on the cussedness of the bees. Next she was a day or two late in beginning to lay when the weather was good for her to mate. If you investigate closely I think you will find that a bad trait, not in itself, but as an indication of a poor quality. After she had been laying a few days, with but little honey coming in, I found two queen-cells with eggs in them. That settled it. I pinched her, and abandoned the colony.

In breeding queens, the grandmother should be as good as the mother. If the mother be good and the grandmother bad, then the badness of the grandmother's family will develop or crop out in the grandchildren, on account of the drones. That great queen of mine had a good mother, an imported queen whose bees jumped right into the sections last year as soon as there was honey for the sections. So you see those nine young queens have a good pedigree, both in mother and grandmother. Oh if I could only have controlled the mating of those nine virgin queens! However, we will hope for the best. Do not sell poor queens. Kill them. Kill every queen that swarms out from under empty sections, provided the super, ventilation, etc., are all right. Try to supersede all queens whose bees persist in after-swarming, viciousness, excessive burr-combs, and all such traits; much depends on the drones in your yard and neighborhood. PHILO S. DILWORTH.

Ingram, Pa.

EXPERIMENT STATIONS AND WHAT THEY ARE DOING.

DO YOU RECEIVE FULL VALUE FOR YOUR FIVE CENTS?

On page 782 Mr. Elias Fox takes exception to the article recommending that the government establish an apicultural station. It has been said by one of our American sages, "It is one of the special dispensations of an all-wise Providence that every board has two sides, and that no man is able to see both sides at once." I have no quarrel with any one who does not see the same side that I do; but to some of the arguments used I have somewhat to say.

There are but few who have not heard of the "Billion-dollar Congress." Since it has been demonstrated that it requires about this amount to run this government successfully, we do not hear so much as we formerly did of this expense. This is supposed to be used to pay the expenses of this government for two years, which would be somewhere about five hundred millions for the expense for one year.

We are prone, as Americans, to boast of our vast population. In this we will be conservative in this article, and for convenience will say we have only sixty millions of population. Of this number there are nine millions engaged in agriculture, fruit-raising, gardening, and kindred pursuits. This is about one-seventh of our population who are engaged in agriculture. Now, the burden of the expense of this government is borne (or at least we constantly hear it is) by the agricultural population. Now, in all justice and equity there should be expended for their benefit one-seventh of the expense of the government. Now, what is the fact? Why, simply that the expense of the Agricultural Department is less than three million dollars. This makes an expense, for every individual in this nation, of about five cents. The question now is, "Is this well expended?" If it is, would it not be reasonable to infer that an appropriation to solve some of the mysteries of

bee-keeping would be also well expended? While I am free to confess, that sometimes such funds are worse than wasted, and there might be some one who had a "political pull" receive an appointment as experimenter in apiculture who would be a clog in the wheels of progress, yet such a one would not last long. It would take a man who had an inherent love for the business to stay by it for any length of time. But there is no use *speculating* in the future when we have *facts* in the past to refer to. It is the principle of this and other governments to aid science financially. Thousands of dollars have been expended in sending expeditions to Iceland, Cape of Good Hope, or Kamtschatka to view an eclipse of the sun or a transit of Venus. Such things benefit none financially, and satisfy the curiosity of but few; yet no man, with any love for his country, can object to such expenditures.

Let us see how some of the money of the agricultural departments has been spent, and see if we can give a good account of *your five cents*.

The several experiment stations which receive aid (\$15,000) from the government have expended it in many ways, not all alike. Some have purchased the best blood of thoroughbred sheep of the various breeds; tested and compared them, and in their reports are carefully prepared tables of the amount of feed each kind consumed, and amount of gain each made, while no kind is recommended; yet at a glance there can be seen which kind makes its owners the most money, and each one can draw his own conclusions.

Others have purchased cattle of various breeds and ages, and fed them for the market. The amount of grain and hay consumed by each is carefully noted, and the gain of each breed, and at each age; so that the farmer now knows how much he may expect his cattle in the feed-lot to gain in a named length of time; also how much grain and hay they will consume; and, months before, he can tell how much they are going to cost him when ready for the market.

Others have conducted similar experiments with swine. On investigation, we find the government has done a vast amount for the farmer besides investigating diseases of domestic animals. Other experiment stations, and Wisconsin leads in this, have been looking after the dairy cow—the amount she eats of the various foods, the amount of water she consumes, the amount of milk she gives daily, and for the year, its per cent of butter-fat. The nutritive ratio of the food fed to the cows, and its costs, have all been subjects of experiment and investigation. While the kind of barn has not, so far as I know, been investigated yet (though it should be), the kind of silo has received much attention—how to build it, and its cost, with instructions for its construction and material. Specifications are all prepared at government expense. The implements for testing the amount of butter-fat in milk have the indorsements of the experiment stations. These cost less than one dollar, and yet how many there are who keep cows that do not now, never did, and never will pay the cost of their keeping! The time is coming, almost now is, when the purchaser of a cow will insist upon knowing the amount of butter-fat in the milk of a cow he purchases.

To arrive at conclusions by running one hive for comb and another for extracted honey would not establish the reputation of the experimenter as an infallible authority on matters of apiculture to any alarming extent. There is just a little too much such work done now.

Just one more reference to the experiment

stations, though many others could be cited, and we will quit with this; that is, the matter of testing small fruits, especially strawberries. Do not the stations give some varieties very high praise, and condemn others severely? and is not their judgment valuable, especially in their own locality? Many kinds are especially valuable in certain soils and climates, and worthless in others; and no doubt apicultural implements will be found similar. Some places require a ten-frame hive; in others an eight is sufficient. A deep brood-chamber would give best results, perhaps, in some places, while in others shallow frames would do best. Foul brood could not possibly be developed from chilled or dead brood in Texas; but in the North, where sometimes there is a change of temperature of 70 degrees in four or five hours, it might. There may be degrees in deadness. There are several experiments with bees that should be conducted in places far removed from bees of any kind except those taken to be used in the experiments. Five years since I knew of such a paradise for bees, not then occupied; but now it teems with bees. I still know of alfalfa-fields on which there is not yet a single bee. How long such places will remain unoccupied, I know not—surely not long.

In view of the importance of agriculture to this nation, and of the small proportion of the funds that are expended in its behalf, and of the importance of apiculture, a branch of the agricultural industry which has as yet received, practically nothing, I am firmly of the opinion we should have some aid from the government. We must remember there are a good many of us, and any additional expense would not be felt. What kind of a farmer would it be who would willingly aid in the expense of painting the house of his neighbor (who lives in the city), giving him a cement sidewalk and a painted picket-fence, and when he could have his farm fenced from the same purse for the asking, but would, from motives of economy, insist upon allowing his farm to lie out to the commons? Have you gained full "value received" for *your five cents*? If not, why not?

W. C. FRAZIER.

Atlantic, Ia., Nov. 4.

HEADS OF GRAIN

FROM DIFFERENT FIELDS.

BROOD-FRAMES; WIDTH OF SPACE, ETC.

I have used brood-frames made of $\frac{1}{2}$ lumber for some time. Two years ago I happened to get a board $1\frac{1}{8}$ thick, and cut it into top-bars, and have used them in several hives. I find that is just exactly the thickness the bees build their combs. I space $1\frac{1}{8}$ from center to center, and then frames are perfectly clear of brace-combs. The combs are much nicer than those on $\frac{3}{8}$ frames, all covered with lumps, no difference how thick. I like a frame $\frac{3}{8}$ thick, top-bar $1\frac{1}{8}$ wide, dovetailed all round.

THE HIVE I USE.

I have improved the Simplicity hive to suit the climate. The bottom has cleats run lengthwise, projecting in front 5 inches, sloped down to take a thin alighting-board on the slope. A $3\frac{3}{4}$ -inch board and 2 three-cornered boards are nailed on to make a Simplicity alighting-board, with slope in front. Two pieces, $\frac{1}{4} \times \frac{1}{2}$, rabbeted out, are nailed on each end of the bottom for the frames to rest on. The rabbet holds them so they can't shift endwise. They are closed-end frames. There is a dummy on each side, and the body

rests over all. They are wedged up, making a double-walled hive; and when you lift the body off, the frames stay there ready to be separated as you choose. The upper story is made an inch larger all round, or both ways, than the lower, and is shiplapped in the side at the lower edge; and when it is on it fits down on the lower part like a lid, and the super rests on the lower story all round, and keeps the bees entirely away from the joint. It has a bee-space under it, and it comes off easily. I use 9 brood-frames, L. size. The top or roof of this hive is shiplapped on the top story, and has a gable roof for the extractor. I use two brood-chambers with 18 frames. Section-holders work nicely on this hive.

I want to say here, that salt properly used will cure bee-paralysis. I have done it, and can do it again. It must be given to them in the unsealed honey in the combs.

Gales Creek, Ore., Oct. 14. J. H. BERRY.

PRATT HIVER AND A MISSING QUEEN.

Mr. Root:—Would it be infringing too much on your time to ask you to answer the following question? I put a Pratt hiver under a hive of bees and an empty hive underneath; and on the 25th of May about a quart of bees went into it, and, I supposed, the queen with them. I set the under hive on a new stand, giving them a frame of brood and a few empty frames, and also shook about 2 quarts of bees from the original hive into the new one in question. In a few days I found they (the new one) were starting queen-cells, indicating the absence of a queen. Yesterday, May 31st, I examined the original hive and found queen-cells with the sides eaten out, as though a queen had been destroyed by a rival, and also sealed queen-cells and a number half built, containing larvæ. What, in your opinion, does the condition of that hive indicate, taking the foregoing facts into consideration—I mean in regard to a queen. There are no eggs in either hive, but the original one has plenty of small larvæ.

Philadelphia, Pa. E. BRUBAKER.

[It would be hard to give a satisfactory answer. We would suggest that the original stock did not cast a swarm and that the surplus of bees simply went into the lower hive, as they will be quite sure to in the event of no swarm. The queen—there is the puzzle. She may have been superseded in the upper hive; she may have been injured in trying to pass the zinc; she may have done a dozen other things. As to the presence of a rival in the lower hive, it may have been the incoming of a queen just fertilized. Instead of going into her own hive she went into the wrong one, and, of course, commenced to seal (or, rather, unseal) the fate of her would-be rivals.]

HOUSE-FLIES; WHERE DO THEY COME FROM?

How often do we hear people complain, day after day, about the troublesome house-fly! and yet they never take the pains to find out where they are bred. Most people seem to think that flies just come—that they have no power to prevent their coming, and spend their energies the year round in trying to kill them as fast as they come. The truth is, the fly does not go far from where it is bred; and if you live on a farm, say half a mile from a neighbor, at least 95 per cent of your flies are bred in your own stable. If your horse-stable has not been cleaned for a few days, the manure, packed solid by the horses' feet, will be found full of maggots about half an inch long. They are the larvæ of the house-fly; and you may depend upon it, if they are not destroyed you will soon have a swarm of flies sufficient to keep the good wife

busy for a week killing them. To prevent their breeding, clean the stable every day, and spread the manure in the sun so it will dry out quickly.
Fillmore, Cal. J. F. McINTYRE.

A DAILY HIVE RECORD OF INCREASE IN CALIFORNIA.

On the morning of April 16th I took 16 lbs. of honey out of a super of a colony of bees near my rustic seat under the shade of a juniper-tree, and placed a second super on it, as most of the combs in both hive and super were full of brood. I then opened up a daily record of increase in weight, a copy of which is given below:

Apr.	Increase	May	Increase	Jun.	Increase
16	7	11	11	5	7
17	4	12	20	6	7
18	4	13	10	7	7½
19	7	14	12	8	4½
20	8½	15	10	9	4
21	4	16	6	10	6
22	1	17	12	11	5
23	1	18	12	12	3
24	2	19	18	13	4
25	5	20	21½	14	5
26	8	21	12	15	5
27	4	22	13½	16	4
28	0	23	10	17	3
29	5	24	6	18	4
30	4	25	13	19	4
May		26	16	20	2
1	8	27	13	21	2
2	12	28	15	22	1
3	17	29	17	23	2
4	10	30	10	24	2
5	10	31	8	25	3
6	10	Jun.		26	2½
7	12	1	7	27	0
8	0	2	6	28	2
9	0	3	10	29	1
10	12	4	10	30	0

I extracted as follows: April 16, 16 lbs.; April 30, 44 lbs.; May 9, 73 lbs.; May 16, 75½ lbs.; May 24, 88 lbs.; June 2, 91; June 15, 86½ lbs.; June 30, 28 lbs. Total, 502.

The record was not kept properly for a few days in May, as the scales were balanced in the morning, which gave the gross increase without taking into account the decrease in weight from night until the next morning, which varied from ½ to 4½ lbs., which will account for the 50 pounds of increase more than was extracted.

July 1st this colony was found decreasing rapidly in strength; and upon examination the queen had almost ceased laying, and capped queen-cells were found. Further examination showed young queens laying, and Sept. 12th there was found brood in five frames, with abundant stores for winter, one super having been removed July 1st. This colony of bees was selected to place on scales on account of its location, and proved to be the best one in my apiary, as my average was 200 lbs. per colony, and I made an increase of 65 colonies from 140.
Thompson, Cal., Sept. 20. J. G. COREY.

A SUGGESTION ON TRANSFERRING.

In a recent issue I noticed an article about "transferring bees at the beginning of clover, as there is less honey to transfer." May I suggest letting it swarm first, then putting it on a weak colony with second story full of frames? Put the box into the third story, with a Porter escape between, which will let the bees go down and build up the weak colony as fast as they hatch. Of course, this plan will work only where the old box hive will go into the movable-frame hive; but as a rule the old boxes will go in, or can be torn away until they will. In this way there is no brood at the end of three weeks, and also no honey except what is left—usually a few pounds. There are no bees, no honey, "no nothing," except the combs, to transfer. I use the Langstroth hive.

Another idea has gained ground—that honey is flavored with formic acid by the bees. May I suggest tasting honey in which several bees have drowned, so that their poison is in the honey? The flavor is certainly not the natural honey flavor.

I have learned another lesson—never pay in advance for sugar for winter feeding. I did it last fall, and received my barrel Dec. 3d, which delay caused the death of 75 per cent—a dozen medium and half a dozen weak colonies from 48 in the fall, in good condition. I did not want to order it till I had the cash, and then they delayed it three weeks. Cold weather set in then, and that settled them.

I have only about 600 lbs. this season; but I am building up and buying some more, and getting ready for next season, as there will be a larger acreage of clover than this year, on account of the continuous wet season. It has been another poor season here. One apiary of 150 colonies produced 200 lbs. of comb honey; another of 60 colonies brought in 600 lbs. of extracted honey. All around me for several miles report the same. I have an extra good range here, or I should have fared worse.

GEORGE E. FRADENBURG.

Kansas City, Mo., Sept 19, 1893.

[Your plan of transferring would work, except that, as soon as the box was set on the movable-frame hive with a bee-escape between, the brood would all be deserted in a very short time. It would probably chill and thus leave no chance for it to hatch.]

SWARMS: UNITING AND SWARMS RETURNING; MR. MAJOR EXPLAINS.

In regard to Mr. Hutchinson's reference, on page 712, to my item on page 652, I will say that I was speaking of swarms returning to their own hive when their queens were clipped. At the same time I believe that swarms seldom unite and go into the wrong hive. I think that, on an average, not more than one-third of my bees swarm each year, and it is not often that two swarms come out together. I remember that, in 1892, two swarms came out at the same time, and united; but after hanging awhile they separated, each swarm going into its own hive; and a few days after, I had two swarms come out, fly around for awhile, then go back to their own hives without settling.

A few years ago I had three swarms in the air at once—when a nucleus hive swarmed out, and all united in one huge swarm. Of course, I had to have them. That same year three swarms came out and united; but when they went back I thought that one of the hives got more than its share of bees. I have so few cases of two or more swarms coming out at the same time that I can not tell the rule from the exception. I only know that one swarm out alone is *sure* to go back to its own hive—at least, that has been my experience during the last ten years with clipped queens.

Cokeville, Pa., Sept. 22. JOHN MAJOR.

QUIET ROBBERING—IT DOES NOT WORK.

I have read with a great deal of interest the accounts of "quiet robbing" that have appeared in GLEANINGS lately; but after trying it two seasons I have almost concluded that it can't be done successfully—at least with the bees I have. After the last extracting we stacked up the supers six high, 30 feet from the yard, closing the entrances to one bee-space, and the first warm day made me almost wish I had never seen a bee. They crowded the entrances, hung all over the front of the hives, and fought like furies. The amount of dead bees on the ground

and bottom-boards far outweighed any small benefit there was in having the combs "cleared up." If you can give a word of advice in the matter, it may be of use to more than one.

We report 56½ lbs. per colony, spring count.

WM. RUSSELL.

Minnehaha Falls, Minn., Oct. 17.

[You must have failed to follow directions in some respect. You say you closed the entrance to one bee-space. In a stack of four or five hives there should be only one entrance for the lot. When you first start the bees going, apparently there will be a bad time of robbing, but it will soon quiet down. We are quite sure you will have no trouble, providing only one bee is allowed to go in and out at a time. Our own experience all this season corroborates it, as well as reports that are coming in. Dr. Miller has tried it, for instance; also Mr. Vernon Burt, years before we ever tried it. We, like yourself, could not be convinced but that it would make mischief, *because* we concluded, from the apparent uproar at the *beginning*, that the whole thing was dangerous, and therefore closed the entrance without giving the plan a test sufficiently prolonged to see how it would actually turn out; perhaps you did this. We would advise you to read our article on the subject over again very carefully, and see if you have not omitted some important detail. Others are making it work—why not you?

As a result of this stack-hive feeding, we have had brood-rearing going on quite vigorously, even up to and within this last week of October. We never had such a state of things before, and we attribute the result largely to "quiet robbing."]

WINTERING QUALITIES OF QUEENS RAISED IN THE NORTH AND SOUTH.

Will you tell us whether there is any difference in the wintering qualities of queens raised in the North and South? Some claim that a Northern queen will stand the winters best.

Anita, Ia., Oct. 17

C. H. TALBOT.

[If there is any difference in the wintering of the two kinds of queens we were not aware of it. We have had both in our apiary for many winters; and although we have made no careful comparison we have not noticed but that one would winter as well as the other.]

A NEW PLAN OF WINTERING.

Friend Root:—To those who winter on summer stands, the time has arrived to fix up the bees for the winter. I will give you my plan, which differs a little from yours. I use the Hill device and burlap as you recommend; but instead of making a cushion I take 1¼ yards of cheese-cloth, and spread it evenly on the super, and then fill it with chaff or dry sawdust; then draw the four sides of the cloth together on top of the super; put on the cover, and the work is done. I tried this plan last winter, and it worked to perfection.

Newton, N. J., Oct. 7.

C. H. SHERWOOD.

I commenced keeping bees a year ago with seven colonies. In the spring I had three good colonies, and three very weak ones, having lost one entirely. I have now 16 colonies in good shape, except one queenless. I got no surplus. This immediate vicinity was so extremely dry that very little honey was secured by any one. Would you consider this report "encouraging" or "discouraging" for a beginner? I have and read the ABC of Bee Culture, Cook's Manual, and other standard works. O. F. KNISELEY.

Port Colborne, Ont., Oct. 7.

[We should consider it encouraging.]

OUR HOMES.

Thou shalt teach these words diligently unto thy children, and thou shalt talk of them when thou sittest in thine house, and when thou walkest by the way, and when thou liest down, and when thou risest up.—DEUT. 6 : 7.

A good many years ago, when there was but one little boy and one little girl in our home, a dear friend of mine, who had also settled down and started a home in another State, wrote me a letter. In this letter he urged upon me the importance of not only leading a Christian life, but of reading the Bible daily in the family. He said I would be a better man, and escape many trials and troubles, if the reading of the Scriptures were a part of every day's duties. He especially urged upon me the effect it would have upon our children, of having the father read to them from the Bible, and asking God's blessing on the home every day. This letter came to me with a peculiar significance, for this friend was a younger man than myself. I knew he was honest, and meant what he said; and I rather think I knew, too, at that time, that he was right. I did not take his advice, however, for there were good reasons why I *could not* take his advice. If I read the Bible to my children, and asked God's blessing on my home, it would require, in the first place, that I should be a different man from what I was at that time. Nevertheless, this exhortation from this friend took a deep hold on me. The letter was soon lost, and, I was going to say, forgotten—no, not forgotten. It was engraven on the tablets of my heart and memory. Oftentimes I thought of that quiet friendly appeal. It had the greater effect because he had never made any profession of Christianity that I knew of at the time. I was surprised to learn that he was a Christian. In fact, he had always been such a rollicking, reckless, outdoor sort of boy, that I could hardly imagine he could sober down his face enough to ask a blessing at the table, and lift his heart to God in prayer before a family of his own. My friend, did you ever write a letter like that to some one whom you knew would take it kindly from *you*, when perhaps he would not take it kindly from any one else? If you have, then you have at least once or twice in your life been laying up *treasures in heaven*, and may be you did not know it or think of it.

Years have passed, and I find myself not only trying to teach these same Scriptures in my own home, but sometimes I try to teach them in other homes. Thank God for the recollection that I *have* tried to do so. Well, not very long ago I heard more or less of the family I have mentioned in my opening paragraph; and what kind of news do you suppose it was that I heard? Why, that this man and especial friend of mine—this one whom I had loved from my childhood up (and I loved him *more* when he urged me to be a Christian), well, it was said that this man and one of his grown-up boys—at least, the boy was pretty nearly grown up—could not *get along* together. Some friends who do not believe as we do would suggest that even his Bible-reading and prayers did not avail *very* much after all. Steady, friends, let us look into the matter. I finally happened to meet this boy who did not get along well with his father, and he and I had a very friendly talk. He said at the outset he guessed it was all his own fault, for he owned up that he had not been a very good or obedient boy. I questioned him more closely. I believe he is now between 17 and 18. It did not seem to me as if he could be a very bad boy when he seem-

ed so frank and honest, and so ready to admit the fault—at least the greater part of it—as his own. Like his father (is it not funny that this boy should be so *exactly* like his father in many things?)—well, like his father he was impatient of restraint—especially any sort of restraint that kept him indoors. He liked to be teaming around at something, and to have something going on. Of course, he rides a wheel; and, by the way, he won a prize among a *lot* of wheelmen, leaving them all behind, old and young. He does not like to go to school; but neither did his father. Dear me! what a time the parents did have to make that *father* get even a tolerable amount of schooling when he was a boy! The boy likes to push things. If he is set at work sweeping out a store he will have it done in about a fourth the time it would take a good smart sweeper to do it. But he would not do it *well*. And then he would make things hustle to such an extent that, very likely, some of the goods would be knocked off the shelves on to the floor, and, may be, swept out with the dust and dirt. Now, this very thing is an excellent trait—that is, this disposition to push things and get along; but it needs to be under proper restraint. I have had to do with many boys of both kinds; but I believe I would rather prefer a boy who likes to make things get along than to have one so slow that you never have the heart to charge anybody what it *cost* if you have him do the work. Both sorts of boys need careful watching and training. They need a good kind mother to show them how, with gentleness and love. Oh, yes! they also need a good kind *father* to show them how, with gentleness and love. Does that latter part describe you, my friend—that is, if you are the father of grown-up boys? May God help you if it does not. Well, I did not mean to "tell stories out of school" if I could help it; but for the sake of helping fathers and boys to get along in love and peace, I wish to tell at length of one little transaction in this friend's family.

The father and two sons have charge of a postoffice in quite a considerable town. When the father secured the office, all three were very ambitious to do the work faithfully and well. Their reports to the Postoffice Department were most carefully made out, every copper was accounted for, and the cash was balanced regularly in a most model manner. As the town was a growing one, different plans were discussed among the three for serving the great public more quickly and easily, and enabling them to do their work more expeditiously. It was a real pleasure to me to see how prompt they were in all the appointments of the office. A very early morning train made it necessary to deliver the mail quite a spell before daylight. I never heard one of them grumble about being obliged to get up at such an unseasonable hour. Their mails were always ready, and Uncle Sam was never annoyed by any delay on their part. Like most other towns there were two factions in this one, and the opposite faction was quite disposed to watch for some chance to criticise or catch the new postmaster napping. For a long while there was no chance for complaint in any direction. Finally an extensive business concern deposited some letters one afternoon, to go to a neighboring town. At just about this time the father and boys were moving the office from the back part of the store to the front, and things were necessarily more or less mixed up. They supposed, however, that every thing was carefully looked after as usual. Some time next day, however, this business man found that the letters he put in the office were not carried to the next town as they ought to have been. As the distance was not great, and some of the letters were especially impor-

tant at just that moment, he went back to the office where they were deposited, to investigate. The father and elder son declared that *all* the mail left in the office had gone forward. The man was vexed, and, in his impatience, probably charged them with criminal negligence—perhaps dishonesty—I do not know much about it. Just as they were probably getting their tempers pretty well up on both sides, the younger son came in. When the matter was referred to him he at once understood it all, and the missing letters were brought to light. Perhaps no one will ever be able to tell just *whose* fault it was. The change they were making in the office was perhaps the primary cause, and it may also be true that the younger son had disobeyed his father's orders or it would not have happened. The father was very angry. The boy, however, insisted that the father and elder son were as much to blame, or more so, than he was. Even if this were not true, it looked so to *him*. Dear parent, have you not yet discovered that boys of 18 often have queer ways of reasoning? Sometimes older people have queer ways of reasoning; but a young person is more likely to make mistakes of this sort. That is one reason why I stoutly insist that only people of mature judgment should hold important positions. I do not believe that any man should be intrusted with the running of a locomotive—at least a passenger locomotive—until he is, say, 30 or 35 years old. There may be exceptions to this; but yet men and boys, as a rule, have not learned by *experience* the terrible results that often follow from just a little forgetfulness or a little taking of risks. Just inquire into the railroad accidents and other disasters, and see if I am not about right. Well, the father, in his vexation, used a terribly hard, bitter word. The boy thought he did not deserve it.

Of course, I was anxious to establish right relations between the two, and I conversed with both father and son. The incident I have mentioned was not the only one, and each seemed to think it was rather improbable they could get along together. May be I am making a mistake in this; but, at least, so it seemed to me. The boy confessed that he had a fearful temper, and said it was of no use for him to try to control it when circumstances were particularly aggravating. When I questioned the father in regard to the kind of language he used toward his son, he admitted that it was not the kind of talk for a Christian to indulge in, and said he had never spoken so before since the time he became a Christian. But the circumstances were such that he absolutely could *not* help it. Here we had it on both sides. While each admitted he had done wrong, he seemed to settle down to the idea that he could not *help* it. What a sad, sad state of affairs! If we hadn't any Christianity or Bible, we might well be discouraged; and I had for some time been surmising where the trouble lay. What do you think? It reminded me of my story in the last issue, about the man and wife who had not been going to church at all. I may not have gotten the full particulars; but as nearly as I can make out it was something like this:

There was some difficulty about holding meetings in that new town, because there were not churches enough; and the Congregational people were, it seems, waiting a little until they could build a church; therefore they did not have any preaching. There is a Methodist and a Baptist church in the town, and they are doing excellent work too; but this father, like a good many other people, did not go very much, because he preferred his own denomination. Worst of all, the family worship had been postponed or put off. The principal reason

given was, that, since they had the postoffice, somebody would come after his mail just as sure as they attempted to read and have prayers. I suggested that one of the three could take care of the office while the rest of the family held fast to the regular daily worship. But some way or other it had not been done.* The boy had some ideas of his own in regard to religion, and, no matter how earnestly I talked to him, it did not seem to change him very much. There are some features of Christianity he was quite willing to indorse and accept; and then, again, there were others that he did not, to use a slang phrase, "take very much stock in." Have any of you ever heard boys talk that way before? Now, friends, do not blame the boys, even though they have some queer ways of reasoning, and draw some erroneous conclusions. I think there is a good deal of common sense in this young boy's sense, after all. The boy's convictions, and his notions as to how a Christian should deport himself, are not so very far out of the way. If that father had held fast to the spirit that prompted him to send me that letter years ago, I feel pretty sure there would not have been any serious disagreement between himself and his eighteen-year-old boy. Oh, what a beautiful thing it is to see father and son, or father and *sons*, if you choose, working harmoniously together! How I do love to hear the boys speak of the father's business as *our* business! how I do love to see them act and talk as though they were *partners* in the concern—as though the father were simply an older brother who rather took the lead in directing affairs! and how I do love to see boys tender, careful, and respectful of the father's feelings, and the father, in turn, tender and careful of the *boys'* feelings! A boy who is associated with his father in this way plans and thinks about the business, and suggests improvements. Sometimes his plans are not just in harmony with his father's plans; but they may be good ones after all. A smart boy likes to invent and to devise new things and new ways; and what father does not like to see him do so? Sometimes, of course, the boy makes a blunder, and perhaps his ideas are crude and impracticable. But suppose they are; and suppose, too, he takes a little too much liberty, and makes a mess of things. Does not your boy do that now and then? But you do not lay it up against him, do you, my friend? Why, no, of course not. Perhaps you sometimes remonstrate because he went ahead without asking advice a little more; but if your relations with each other are right, these things are easily adjusted.

Now a word about disobeying a parent. There are a good many kinds of disobedience. If a young man wanted to go off with a crowd of intemperate companions, the father would be justified in forbidding his going. Of course, the matter should be talked over fully. If the boy disobeyed after a plain command, the parent would be at fault if he let the matter drop without doing something. If, however, the parent gave plain directions about doing a certain piece of work, and the boy should think he had a better plan, and therefore disobey, even though disaster followed, as the boy's *intentions* were right he should not be punished—at least, the punishment should be light. It makes a vast difference whether the boy *means* well in his disobedience, or whether he

*The postoffice had been a great boon to them. I think it quite likely they asked God to help them get it, and thanked him for it after it came; but the very blessing they craved had in time come to be the very thing that led them to forget their daily worship.

does not. I very much prefer to have a boy, or even a hired man, who disobeys orders when circumstances seem to justify so doing. I have been exceedingly vexed with a certain kind of people who go on and obey orders, when they can see plainly it is going to bring disaster and loss. Of course, the hired man or boy does not *always* know what to do. It depends on who the boss is. He is likely to get scolded either way if he has a fault-finding employer or father. Where one does the best he can, according to his knowledge and ability, but after all errs in judgment, he should certainly be dealt with very leniently. May God help *me* to practice exactly what I am preaching *now*; and I certainly *will* try harder to remember what I have said right here.

Now a word about admitting you can not help doing certain things when you are "real mad." I remember a person who admitted that it is very ungentlemanly and wrong to swear; but he said that, when he was real mad, he could not help it. Let us look into this a little. A good many people seem to think it a very light thing to admit they do not have command of themselves at certain times and under certain circumstances. Suppose somebody should tell you that he had spells of being crazy; and that, during these crazy spells, he might swear or fight or commit murder, but that there was no help for it. By the way, I have in years past, as you know, made this matter of insanity a study. I have often wondered why crazy people are invariably so exceedingly provoking. If one's mind is unhinged, so that he is not at all responsible for what he does, why should he seem to take delight in exasperating everybody around him beyond measure? I have sometimes thought that these people have a satanic ingenuity in devising ways to vex their best friends; and I have sometimes decided that crazy and idiotic people are at least *partly* responsible. There are many phases of insanity. Sometimes it seems hard to tell whether the person is crazy or only tremendously ugly. Well, of late I have been wondering whether one who has symptoms of insanity could not, by a tremendous mental effort, hold it back—at least a part of it—or keep it in check. I have wondered, too, whether God would not help those who are really anxious to keep back incipient insanity. And, by the way, if I am correct, one of the writers of some of our most beautiful hymns, during most of his life, battled and prayed against this very thing. And, finally, what is an unruly temper, after all, but a kind of insanity—a kind of madness that grows fearfully if we give it sway? Do not, I beg of you, O my sister or brother, say *again*, if you ever have been guilty of saying it, that you can not *help* giving way to temper under certain circumstances. The mayor of Chicago has just been foully murdered. Was the assassin crazy, or was he simply ugly? Are anarchists crazy, or are they simply individuals who have gotten so very far away from Christ's teachings that they take delight in trampling law, order, and decency, and *common sense* in regard to the rights of others, under foot?

Now, then, my friend, if you have at times in your life felt afraid insanity was lurking near, please believe me when I tell you that the best remedy in the whole wide world for every thing of this sort is to make God's holy word your daily companion and guide; and if you are a father or a mother, please believe me when I tell you that nothing in this world will hold together the family circle in loving harmony as will the sentiment conveyed in the little text I started out with.

Thou shalt teach these words diligently unto thy children, and thou shalt talk of them when thou

sittest in thine house, and when thou walkest by the way, and when thou liest down, and when thou risest up.

NOTES OF TRAVEL.

ON THE WHEEL.

My cousin, Wilbur Fenn, notified me the first week in November that he was digging that nine acres of Monroe Seedling potatoes; and on Monday, Nov. 6, as it was a beautiful Indian-summer day, I started out. Was there ever any recreation invented like the pleasures we get from a wheel when we have such beautiful weather in November? My first drink of delicious spring water was a little beyond Sharon; and there I got an idea of a roadside watering-trough. This trough was but an ordinary one—made, I think, of stone—but the water poured into it from a $\frac{3}{4}$ -inch pipe standing at an angle of 45 degrees. The stream went up into the air perhaps three or four feet, and then came over in a beautiful curve, dropping in the center of the trough. Its splashing and spattering on that bright morning seemed to me a thing of beauty and a joy for ever. As it is in the vicinity of Spruce Run, the water was pure and soft. The owner had taken the precaution to have a part of the trough inside of his own dooryard; and on the edge of the trough was a rather nice drinking-cup. I took it to be originally silver-plated, but I may be mistaken. It bore the marks of use; and I am inclined to think, from the simple fact that it was inside of the dooryard, nobody had seen fit to carry it away. Another thing, the proprietor had made careful provision for the overflow, so that it should not make a sloppy and muddy place outside of the gate. Now, I believe in this kind of religion—furnishing pure water for the thirsty traveler; and I rather think everybody believes in it. Let us have more of it. Here is one common basis on which we can all unite. Perhaps the saloon-keeper might object; but I hardly think that even he would. Look here, friends; are there any saloon-keepers who take GLEANINGS? If so, and we have been too severe on them, or even if they think so, I wish they would speak out, for I will publish any thing they think fit to send us.

In a little more time my wheel brought me to Mr. Atwood's celery-farm. I was anxious to know whether he had yet put his celery into winter quarters. Sure enough, it was right out there in the open swamp, as bright and green as it was in August—yes, brighter and ranker; for he has now a beautiful stream of pure running water, like that from the trough I had just visited. He has succeeded, too, by a series of gates and dams, so that this bright stream of running water can be made to flood any part of his whole celery-farm if need be. I tell you, when I saw how our Creston neighbors had worked with a steam-boiler and injector, so that they might run water in a hose along the rows of plants, I thought Mr. Atwood ought to be a happy man, and I rather think he is. There is one thing, however, he did not feel very happy about that bright morning. His White Plume celery is not all disposed of. Some was out in the field; but the greater part of it was stored in an immense celery-house. This house has a roof of boards low down, with doors at each end, and ventilators about every 20 feet along the ridge. Then, in order to keep the celery from wilting, he raised the water so the ground was quite moist inside of the building. Well, the White Plume did not take very kindly to this plan of being housed. I should

say its feet were too damp, and that it did not have air enough. In fact, he had packed it tight together, leaving only one main alley through the center, and it was rotting to some extent. The tops were wilting at the same time. It looked a little like blight. I do not know but the frost was a little too severe for it before it was put inside; but this is certainly true—that White Plume celery has not the vitality and constitution of the dark green and the red celeries. Mr. Atwood thought, however, it would be all right the way he put it up for storing, for the fall market; and he is now going to send wagons around from house to house through the great city of Akron, and close it out. At both ends of the building were the Giant Pascal celery, which was keeping just beautifully, and seemed to actually enjoy the dampness and lack of sunlight. Friend Atwood declares he has always had better luck in leaving celery out until quite late. The greater part of his crop, of course, is fixed for winter right in the muck where it grows. He moves six or eight rows up close together, banks the soft black earth up all around them, and, finally, almost clear over them, and they stand unharmed right outdoors. This soft muck will keep out frost, when it is light and fine, almost as well as stable manure; and during even the most severe winter weather there is no trouble in taking it out of the trenches after you break through the crust of frost that forms on the outside.

I found cousin Wilbur just where I wanted to see him. He was out in that nine-acre field of Monroe Seedling potatoes. Four horses were moving the Hoover digger, one man driving, with a boy following after to wait on the driver, throw potatoes out of the way that might be covered when they came back, and, if I recollect, six men were picking the potatoes up. I expected something of those potatoes that had not seen a bug or a bit of blight; and as they are on upland, and rather sandy soil, they had kept right on growing almost into November. The yield was about 200 bushels per acre, of the finest-looking potatoes I ever saw spread out in the field. I was astonished to find almost all of them of a nice table size—very few small ones, and almost no prongy potatoes, or those with a little potato growing out at one side. I suppose the variety and his method of management had much to do with it. The ground was just loamy enough so the potatoes tumbled out bright and clean and handsome. I fell in love with them at once. Now, here is a point that I want you to observe: When I came into the field every thing was going on like clockwork, and those potatoes were being deposited in his nice cellar in almost a steady stream; but, of course, I had to stop and ask questions. Pretty soon the team stopped, and could not go on unless the "boss of the ranch" gave directions. Perhaps I might as well tell you that I got to bantering him for a carload of potatoes, and, of course, he could not very well neglect a chance to sell a carload, even before they were taken into the cellar. But there were several details to be arranged about shipping, furnishing boxes to put them in, etc.; and in a very few minutes the whole gang of workmen came to a standstill. The moral is, be careful how you bother a man when he is bossing a job that requires half a dozen or more expert helpers. I told him it was too bad, and so I made my visit quite a hurried one.

One thing that threw him out occasionally, was, they did not have quite enough potato-boxes. I told you six men were picking up potatoes. As fast as they get a load the team comes around and the potatoes are set on the wagon, and taken directly to the cellar. You

can do this with a crop of potatoes that are just ready to dig by the first of November. The air is cool then, the potatoes are cool, and friend Fenn assures me that he piles them right into the cellar, even four feet deep. Under such circumstances he carries them through until the following May, or even up into June, with scarcely a sprout and not a particle of wilting. I saw the 100 bushels that he planted in this field the last day of May.

Before I started for home we looked into the cellar, and saw how he unloaded. An inclined plane made of strips of wood runs from the wagon clear down to the bottom of the cellar. The bushel boxes are set on this inclined plane, on a sort of carrier. The man with the wagon lets this down with a rope. Another one in the cellar bottom pours them on to the pile. The boxes are pulled up with the same arrangement, and, without any lifting or lugging, the load is disposed of very quickly.

Farming doesn't pay! Doesn't it, though? Friend Fenn is getting more for the potatoes that grew on this land than the land itself would sell for. What do you think of that—paying for a farm with the proceeds from a single season? and a regular farm crop at that! You may ask about the expense of growing this crop. Well, it was not very expensive. The only manure was clover and timothy—that is, if I am correct; and the cultivation was all done by horse power, the driver riding on the cultivator. The potatoes were also planted and dug by horse power. I do not know what he values his farm at; but I do know that, within less than a mile of his home, there is land that can be bought for \$40.00 an acre—may be less than that; and what he is doing is on a farm that was called, only a few years ago, a poor rundown farm, and not of very much account.

HIGH-PRESSURE GARDENING.

BY A. I. ROOT.

EATING POISONOUS MUSHROOMS.

A HINT AND A CAUTION.

Mr. Root:—In Oct. 1st GLEANINGS you say, "I do not see how people can be poisoned unless they eat very freely of the poisonous kind." Now, on principle I should not wish to interfere with anybody's orthodoxy—especially yours; but about mushrooms, that is different. I am interested in them for two reasons: First, I like them—that is, the wholesome ones; and, second, I have been poisoned with their imitation once, which was certainly once too often. Shall I tell you how it was?

I was living at the time in a village suburb of Chicago—a university town—perhaps three-fourths of a mile from the postoffice. I was, at the time, alone. One morning I wished, for some reason, to reach the early post, and went before breakfast. My way lay through University Campus, part of which was well shaded with forest-trees; and as I returned I spied, as I thought, a group of mushrooms, and said to myself, "How good these would be with my breakfast!" Suiting action to thought, I gathered three or four. When my breakfast was about ready I peeled two of my mushrooms, placed them on a hot pan, and put a trifle of butter and pepper and salt into the cup of each, and left them to cook, anticipating a dish fit for the gods; but, alas! it proved a dish certainly fit for none but gods. Before I had tasted breakfast, a neighbor came in, with whom I

offered to share my dainties, but I said I didn't know but they might be poisonous. She thanked me, but said she had "no hankering for them." Whether the doubt hindered me, I do not know; but I sipped a little of the broth, bit the fleshy part of one, but swallowed none of it. Some one tapped at the door, and I answered the call. While I stood a moment at the door I felt ill, but thought it was only from standing. However, I ate no more mushrooms that morning. I was going to work with the bees; and almost as soon as I was alone I raised a cover; but before I could do much more I was so sick that I went to the house for repairs. I returned to the yard, closed up the hive, and again feeling very sick, went back to my room, having first told my nearest neighbor that I was glad she had not "hankered" for my mushrooms, for I was sick. I grew so much worse that I concluded I would write a note to the doctor; but before I was ready to write I was too ill to do so. A young schoolgirl friend came in to take my note and find a messenger for me. I said to her, "Just take those two mushrooms that I have not cooked, and show the doctor what I had for breakfast. Tell him I am sick—to come, or send me some remedy, as he thinks necessary." That was the longest speech I made that day. My neighbors, one and another, were with me all day, and at one time several were there at one time. They wanted me to make my will. But I said, "The boys will not quarrel over what little I have; and if I have poisoned myself with mushrooms, I'll never let father know." I was reminded by the friend who had "no hankering for them" that I should not have that to do. Well, I was cold, cold, cold, all through. I did not know but I should die. Well, probably thanks to my good neighbors and the doctor, I could eat a dish of mushrooms to-night—if they were the approved sort; but if I were not sure, I should prefer to first try them on a mad dog, or something that had to be killed.

I fear the difference can not always be well marked. I had gathered mushrooms from my childhood, and had reason to feel ashamed not to recognize the false from the true. "Mushrooms proper to be used in cooking grow in open pasture-land; for those that grow near or under trees are poisonous." So says *Home and Health*, and the reference is doubtless to the variety you describe; but I have found truffles growing in woods, and some edible varieties even grow on trees. A pamphlet published by the Agricultural Department, Washington, which I presume could be had for the asking, gives very good illustrated descriptions of several varieties. I have read it, but have not now access to it.

Tiffin, O., Oct. 10.

RUTH MOORE.

□ [My good friend, I read your article through with almost breathless interest. I wanted to have you tell us clearly and plainly whether one could not tell at first taste, even by the *broth*, that the mushroom is not of the edible kind. If the poisonous mushroom, when cooked and seasoned, tastes like the edible, and at the same time such dire effects follow as you describe, then indeed there is danger ahead. I am very glad that the government has been so thoughtful as to send out a bulletin on this subject, and I will try to get it at once. My principal test has been that the mushroom should be light red or pink underneath—that is, when it is small, before the pink has turned to a dark brown or black; and I should like to know whether there is any poisonous variety having this pink color on the under side. The toadstools that grow out of manure-heaps or in the woods, are always perfectly white on the under side as well as on top.]

EVERBEARING RASPBERRIES IN GENERAL.

Dear Mr. Root:—I have just been reading what you have to say about the new everbearing Gault raspberry; and referring to the May number, page 402, I find you telling friend Allen, of Salisbury, Md., "Don't let a thing be boomed—at least editorially—until some experiment station has tried it, and declares it possesses merit." As I have no faith in everbearing raspberries except under forced or artificial conditions, I should like to look into the causes that lead to its productiveness. What you say is very favorable to the fact; but, did you ask Mr. Gault some important questions? He seems to have a secret (?) as to propagation. May be he might tell you, as I can, how to make most of our raspberry-bushes bear twice and bear big berries. As for his secret, he has none with people who have already practiced both stem and root cuttings with raspberry culture; and if his plants are very distant from others he might propagate also by seed-planting. The trouble about most people, when they find small fruits fruiting out of season, is, that they fail to look into causes. Ten or twelve years ago my sister, who lives on the "Eastern Shore" of Maryland, called my attention to some raspberries which she had for dessert during September, saying that they bore every year from June till October. My fondness for horticulture soon brought me to the spot where they grew. The plants were on the west side of a close-boarded fence. It did not take me a minute to get my chin over that fence and find the chief cause of their bearing; for, close to it, ran a gutter which carried off the wash-water from a pump up the street. I did not take up any of these plants, which were of the Brandywine sort, for transplanting, knowing that, without half shade and great moisture, they would not differ from other raspberry-bushes, because they could not. Mr. Gault's bushes, you will find when the hot suns come on, will quit, unless he shades and waters, which won't pay. As for fall bearing we have several sorts that will do that without urging. The English have many of the "twice-bearing" sorts. The Antwerps do best with me, but they have to have special cultivation, just as I believe Mr. Gault's must have.

Now, instead of sending to an experiment station, suppose you get six of Mr. Gault's new prolifics, and plant, alongside of them, six Antwerps, or Cuthberts, for that matter, and give the usual out-field cultivation, and notice whether there is any difference. I venture to say that there will be none, after the second year at least. Should you wish to get a succession of fruit, treat them again alike, as I suggest, and note the difference, if any. In the first experiment, give them no more water than the heavens afford, and no pruning. In the second experiment, cut down all of the suckers and shoots within two or three inches of the ground, and both Mr. Gault's and yours will bear in the fall. If you desire the fruit to be unusually large, cut down to the ground all suckers, leaving a strong shoot or two.

The impossible nowadays seems always happening, so Mr. Gault may have a berry with a greater tendency to fruit successively than any now in cultivation; but I don't believe it will fruit during the drouthy months. Raspberries fruit on old wood; and yet, if the old wood (growth of the preceding year) is cut down to two or three inches from the ground, from this stock will spring shoots that will fruit in June; and yet you seem to claim this as a feature (see article) of the "Gault Perpetual" when it is common to other sorts, and makes me think that, notwithstanding your knowledge of small

fruits, friend Gault can give you a point or two about them. ARTHUR T. GOLDSBOROUGH.
Wesley Heights, D. C., Oct. 22.

[Thanks for your hints, friend G.; but you are certainly wrong in thinking that Mr. Gault gave his plants water or extra quantities of manure. His old plantation, with tall canes, was on pretty rich garden ground, and he gave them some water which he drew in barrels; but his new plantation, and by far the largest plot, had no water whatever during the most severe drouth that I can remember, and the ground has not been manured lately, for he had potatoes between the rows, and he objected to manure because it made his potatoes scabby. The ground certainly was not nearly as good as my market-garden ground, and yet every little plant seemed bent on bearing fruit almost as soon as it was out of the ground. I am to have plants enough to give them a good trial in the spring. If the plant does as well in other places as it does on friend Gault's farm, it seems to me it must be a wonder among berry-plants. Yes, I remember what I said about the experiment stations taking hold of new things, and I believe they are to try this next season. At present I have not a plant for sale, and I think friend Gault has sold all he has to spare for next spring.]

SHALLOTS.

Well, what are shallots? All I can tell you is, that the Cleveland Nursery Co., of Rio Vista, Va., say in their price list: "These are a great multiplying variety. This onion is suitable for bunching after the winter onions—often 15 to 25 onions from one, but they do not run to top-sets. This, no doubt, is a valuable onion to many market-gardeners for spring bunching. They need planting one foot apart in the row, and rows about 18 inches apart. They need plenty of room." When shall we ever know all about all the different kinds of onions? Why not call this a potato onion? I suppose because it never gets large, and is suitable only for bunching—probably something like the Egyptian; but then, again, we read that they do not run to top-sets; therefore the only means of propagation is by dividing or multiplying. This, certainly, would be a desideratum. So far I have not seen a potato-onion or a White Multiplier run up to seed.

OTHER KINDS OF ONIONS.

I wish there were a book in the world that would give us a full description and directions for cultivation of all the onions in the world—or, say, of all the onions in the United States if the world is too large; then we could tell something where we are. I do not know but I would go a thousand miles to see an onion-garden where all kinds of onions were growing; and then this onion-garden could furnish us seeds and multipliers and potato onions to plant; and I do believe they could manage, by some hook or crook, so that they need not charge us \$5.00 a bushel for onions and sets. Why, it is ridiculous. Potato onions can certainly be grown at a profit for a dollar a bushel, and I think the white ones might be grown for \$1.50 any way. I do not know about shallots. Egyptian or winter onion-sets can be grown for \$1.50 per bushel, easily; and for an immediate order I will sell them at that price, or bottom onions (same variety) for \$1.00 a bushel. These latter are the best thing I know of to put in greenhouses and cold-frames.

Now, then, have I got hold of all the different kinds of onions grown? When I was a boy, some English friends of mine had something in the onion line that they brought over from

England and they called them "chives." They grew in great clumps; and when they wanted some for the table they just sliced the tops off with a pair of shears. The more they sliced them off, the more they grew. Do any of our readers know any thing about chives, and will they please mail me a root or two? And, by the way, when my creek-bottom ground was cleared up, there was a very pretty wild onion found. It made little bulbs about as large as onion-sets, and it also produced seed on top. Somebody told me these were garlics. Is garlic an onion? I remember one day our butcher said the only kind of bologna he had on hand was some flavored with garlic. I did not like the garlic kind; but he said it was because I was not brought up right. May be friend Dandant would say I was not "built" that way. Now, before I write that onion-book you see I want to know all about onions.

A great many are asking lately about growing onions under glass. If you have a hot-bed cold-frame, or greenhouse, it is the simplest thing in the world to grow onions under glass; and if you have any old onions that are rotting and sprouting to such an extent that they will not sell for any thing, just put them in rich dirt as close together as you can set them, and with a little dirt between under your greenhouse-benches, or right in your hot-bed or cold-frame. After they have made long green shoots, peel off the outside so they look white, like nicely bleached celery. Tie them up in bunches, and they will sell tiptop almost any time in winter. Along in January or February, when people are hungry for green stuff, we often get 5 cents for $\frac{1}{4}$ lb. Now, I suppose shallots, potato onions, multipliers, and may be chives, could be thus forced in the same way. Oh, yes! in growing onion-plants for sale last February they got too rank and tall in that new greenhouse, and we cut the tops off with shears, and sold them around town by the peck and half-bushel. Some of them were sheared off twice. Now, what do you know about onions?

HANDLING SASHES.

When Huber was only nine years old he often used to help me handle the sashes on the plant-beds. Frequently the air would turn frosty Sunday evening, when the men were all away. Sometimes, in laying the sash down on the edges of the beds, he would get his fingers pinched. Boys—especially small boys—have to learn to take care of these soft pink fingers. I wonder whether the father always has it in mind to protect these little fingers and toes, and endeavor to avoid pinching them and giving them pain. The mother does, as we all know; but I think that *fathers*, oftentimes, should be a little more *motherly*. The first I knew, Huber was handling sash quite rapidly, without even letting a finger get a brush. Boy as he was, he had invented a plan for dropping them. The plan has been adopted by all of our men since then; and as some of you handle sashes, I think I will tell you about it.

Suppose the sashes are piled up at the end of a long bed. You commence at one end—two of you—and lay the first sash in place; then you take the next one, and drop one edge so as to have it come close up against the first sash already on the bed. Now, when you lay down the opposite edge, if the sash should not be any longer than the width of the bed, one of you may get a finger pinched. Huber's plan is to cross the free hand over the one holding the corner of the sash, and let the last edge down gently by placing the free hand along the *side* of the sash instead of under the end. The side, you know, lies over the edge of the bed, and

touches nothing; so, of course, you can not pinch your fingers.

TERRY'S NEW BOOK—OUR FARMING.

When I mentioned this book in the last issue I had not yet seen a copy. I presume the publishers forgot to send me one, so the first I saw of one was when we got our first hundred copies by freight. It is a book of 367 large-sized pages, beautifully illustrated with half-tone and wood engravings. First we have a most excellent half-tone picture of Terry himself. Almost any one would pronounce it a beautiful photograph. On the cover we read in large gilt letters, "Our Farming;" right under it, in smaller type, "How we made a rundown farm bring both profit and pleasure." The book is really a story; and to my mind it is the most entertaining story—that is, the most entertaining story with a moral to it—that I have ever read in my life. He goes into the full details of how he and his wife, with two little children, struggled with poverty in their earlier days. He tells how he learned to be careful and sharp by making foolish investments when he was a boy, and finally found himself \$3700 in debt, and the owner of a poor rundown farm, only thirty or forty acres of it being fit for much if any thing. Then he tells how he worked up. A great many say they can not do any thing for lack of capital. Friend Terry tells us (and I believe it from the bottom of my heart, and have done so for years), that lack of capital is a help to any good man or good boy, rather than the reverse. There are now stored around my home, in the various out-buildings, tools and implements that cost me a good deal of money, that never would have been purchased if I had always been so situated that I could not have a thing until I needed it "bad." Terry and his good wife learned in early days not to purchase a thing until they needed it very much. After they got it, as a matter of course they took good care of it. His tools have never been left out in the rain. He thinks so much of them, and looks after them so carefully, he rarely if ever has expensive breakdowns.

This book is not only entertaining, but the writer has the happy faculty of getting you interested in such humdrum occupations as cleaning the stables; nailing battens on the stables to keep the stock warm; underdraining the wet places about the house and farm; saving doctor-bills by avoiding infection, and, in short, making a locality exceedingly healthy where the former residents had died from sickness and fevers until the doctor felt almost ashamed to be seen so much in that one neighborhood. The book is the most exceedingly practical of any thing I ever got hold of. There is not a sentence in it that is useless, and it goes down into the minute details, explaining how certain conclusions were arrived at, and telling of the success he and his wife achieved after repeated failures. It was himself and his wife working together that did it all; and even now all his writings are submitted to her before they go into print. Such a book could never have been written without the aid of a careful woman to supplement and put the finishing touches on the work of such a man as Terry. I feared at first it would be too much of a repetition of the books we have already published for him; but to my surprise I find it is not. While he goes over the same ground, he throws on each subject different sidelights, making it a valuable supplement to all his previous works, and bringing his experiments clear up to the present date. In short, if any reader of GLEANINGS purchases this book, and says it is not worth what he pays for it, he may send the book back, and we will return him his money.

Books by T. B. Terry and Others.

The long winter evenings bring extra time for reading. A part of this time could not be more profitably spent than in reading the following rural hand-books which we send by mail at the uniform price of 40c each. The new edition of the A B C of Potato Culture, rewritten this season by T. B. Terry, will be completed in December. For 10c extra we will send at once a copy of the old edition and the new also when finished.



potatoes, we shall be ready to handle almost any farm crop successfully. Price 40c, postpaid.

The A B C of Strawberry

Culture. Paper, 150 pages, fully illustrated. This is Terry's latest small book, and has received some very high words of praise. Who among rural people does not have a little garden-patch? If you would learn to raise in it that most luscious of all fruit, the strawberry, with the best results, you can not be without this little book. Even if you don't grow strawberries you will be the better for reading it.



Tile Drainage. By W. I. Chamberlain. This is a valuable companion to our other rural books. It embraces the experience of forty years of one of our foremost practical agriculturists, who has laid with his own hands over 150 miles of tile. Paper, 150 pages, illustrated. Price 40c, postpaid.

Winter Care of Horses and Cattle.

This is friend Terry's second book in regard to farm matters; but it is so intimately connected with his potato book that it reads almost like a sequel to it. If you have only a horse or a cow, I think it will pay you to invest in the book. It has 44 pages, 7x10, illustrated. Price 40c, postpaid.



Maple Sugar and the Sugar Bush. By A. J. Cook. Paper, 44 pages, 7x10, illustrated. This is most valuable to all who are interested in the product of our sugar maples. No one who makes maple sugar or syrup should be without it. If you don't make maple syrup you may want to know how it is made, and how to judge of a good article when you buy it. Price 40c, postpaid.

Tomato Culture.

In three parts. By J. W. Day, D. Cummins, and A. I. Root. Paper, 150 pages, illustrated. A most valuable treatise embracing field culture, forcing under glass, and raising plants for market. Valuable to any one raising garden stuff of any kind, aside from tomatoes. Price 40c, postpaid.



A B C of Carp Culture. In paper covers, illustrated. This is a work of 70 pages, 7x10, written by Geo. Finley and A. I. Root, and the best authority on the subject of carp culture yet in print. The rearing of carp is a pleasant and profitable amusement. This book will tell you all about it. Price 40c.

Any one of above books sent free for one new subscription with your own renewal and \$2.00, the new subscriber to receive GLEANINGS the rest of this year and all of 1894.

Terry's First Large-Sized Book.

We have just received 100 copies of "Our Farming," from Wm. Henry Maule. Price, by mail, postpaid, \$2.00. If ordered by express or freight with other goods, you may deduct the postage, 15c.; or we will send the book by mail, postpaid, with GLEANINGS, for \$2.50.



Ye fathers, provoke not your children to wrath.—EPH. 6: 4.

We (that is, the junior part of us) were not present during the first day's sessions of the convention. We are, therefore, indebted to Bro. Holtermann, of the *Canadian Bee Journal*, for a part of the material to make up the report in another column.

THE Crane smoker, as it was improved some two months ago, has proven to be almost faultless, so far as the perfect working of the valve is concerned. The problem of keeping smoke out of the bellows, and of making an inclosed and a strong blast, is solved in the Crane principle.

ONE of our men, with a delicate micrometer (an instrument for measuring thousandths and ten thousandths of an inch), is now measuring the base of foundation that has been drawn out into comb. The results are quite interesting; and as the work is being done under the instruction of the Michigan Apicultural Station, the report of these results will be issued from that station in due time.

We have just had a delightful visit from one of the oldest manufacturers and dealers in bee-keepers' supplies in England—Mr. S. J. Baldwin, of Bromley, Kent, England. He had been to the World's Fair. After making a short tour to Wisconsin to see the G. B. Lewis Co., he made a bee-line to Medina. We found our friend to be exceedingly well posted in all that pertains to bees. He is a correspondent of the *British Bee Journal*, a lecturer, and an expert. "Expert" in England means more than it does here. Such a one is not only expert in the ordinary sense of the word, but is appointed, if we understand the matter, by the British Bee-keepers' Association to deliver lectures in various portions of the United Kingdom, and to perform various operations in the presence of those who are seeking instructions. Mr. B. enjoys the distinction of making an exceedingly fine article of foundation, and has taken many medals at the shows for this and other supplies. He will visit, before his return, the establishment of W. T. Falconer & Co., and thence proceed homeward.

HONEY ON A STICK.

SOME time ago, as our readers will remember, a short item appeared in our columns, entitled "Honey on a Stick." Our correspondent told how a race of small bees placed the comb around a small twig. This was done so nicely by the bees that these sticks of honey were sold in the markets. At the time this item appeared we had some doubts about the existence of such an article; but Mr. Benton assured us that the facts as stated were essentially correct; and in proof he showed us a sample, not of honey on a stick, but a comb encircling a small stick. The latter appeared to be about $\frac{1}{8}$ of an inch in diameter; and the comb encircling it, as nearly as we recollect, about $\frac{3}{4}$ of an inch—the length of the whole being some 4 inches, the stick projecting at one end, leaving a convenient handle. The manner of eating the honey would be just about as you would pick meat off a chicken-leg, holding the same in the fingers in the good old way.

KEEPING TWO QUEENS IN A HIVE; SOME OF THE POSSIBILITIES.

THE question of keeping two queens in a hive, for the purpose of ensuring a tremendous force of bees, so that either swarming may be prevented or larger honey crops secured, is a very important one. While the possibilities along this line have been hinted at in the past, they have never been thoroughly discussed. We should like to have those of our readers, who have had experience along the lines pointed out by friends Mitchell and Golden, tell us what they know, and whether it is possible and practicable to keep two queens in a hive at all seasons of the year.

Assuming that it is practicable, more brood can be reared in a given time, and consequently the colony can increase more rapidly; in other words, the two queens, if only average layers, would give all the advantages secured from a queen that was extra prolific. If we can not always get individual queens up to this high standard, perhaps it is possible to make *two* queens do the work of one extra good one. There are other possibilities, such as the almost absolute immunity from unexpected queenlessness, and the rearing of an extra queen in the hive while the old queen-mother goes on doing her duty.

HONEY-EXHIBITS AT THE WORLD'S FAIR.

THERE has been considerable discussion in several of the bee-journals as to which honey-exhibit at the World's Fair was the largest or finest. With some exceptions we could not see that any one State *greatly* excelled any other. New York had the *largest amount* of honey on display; but in our estimation it was not as attractive as those of Michigan, Ohio, or Canada. Of course, we *might* be biased in our opinion regarding our own State; but, observe this: It was with R. L. Taylor that we were looking over the various State honey-exhibits. Coming to a certain one, we remarked that we thought *that* exhibit was a little bit the finest of any of them. We supposed that we were speaking of the display of honey from Michigan; but, lo and behold! it was from Ohio. We stood a little bit at one side, and in a position where we could not see the lettering indicating the State the exhibit was from. For the consolation of our Michigan friends, we may say that their comb honey itself, in our estimation, was the best filled out; indeed, as nice a lot as we ever saw on exhibition. It came from the apiary of R. L. Taylor.

Just about as we were leaving Agricultural Building for the last time we learned that several of the foreign countries had honey-exhibits. We did not happen to see any, except that from the British Bee-keepers' Association, and that indeed was fine, and did great credit to our English cousins.

THE SMALL ATTENDANCE AT OUR BEE-CONVENTIONS; HOW THEY MAY BE INCREASED.

ONE reason for the small attendance at some of the meetings of the N. A. B. K. A., and the consequent failure to secure reduced rates of $1\frac{1}{2}$ fare, is because a bee-convention is hardly sufficient to draw the far-away bee-keeper, considering the great expense of travel; and, to be honest about it, there really is not enough in the average bee-convention to pay one, ordinarily, to come several hundred miles; and then, too, he will get the very best part of the proceedings in the reports that appear in the bee-journals. It is true, he misses the pleasant handshaking, and face-to-face personal acquaintanceship; but he feels that he must forego all this. Taking all these things into consideration, we have always maintained that

our conventions should be held at the time of some other meeting—for instance, a farmers' institute, or, perhaps better, the time of some other big gathering, such as the G. A. R. reunions, when a large number of people will be present anyhow, and reduced rates will be assured independently of the bee convention. The last meeting of the N. A. B. K. A. was held at the World's Fair, and the result was the largest attendance the association has ever had. The bee-keeper reasoned, probably, that, if he could not afford to go several hundred miles to attend the convention, he could afford to go to the fair, because that alone would fully warrant him in the expense of the journey; that, furthermore, if he could afford to go to the World's Fair he could go to the convention of the N. A. B. K. A. also—in fact, kill two birds with one stone. The very large attendance—the best in the history of the association—at the last convention proves that this is about the way the average bee-keeper views the situation. This being the case, does it not behoove the executive committee to take pains to set the dates at the same time when reduced rates will be assured, and when people generally—particularly bee-keepers—will have other interests as well as the convention to draw them? But some say that the other interests spoil the convention because the bee-keepers will be running from one to the other. While we admit this has been true to a slight degree, the large attendance many times over makes up for it; and as to the last meeting at the World's Fair, no one can say there was any annoyance from bee-keepers coming and going from the fair. Now, then, if we may be permitted to make any suggestions, we would advise that the date of the next meeting at St. Joseph be made simultaneous or nearly so with some large gathering that will take place during the next twelve months in that city. Whether it be a big agricultural fair, a G. A. R. reunion, or a farmers' institute, we would by all means arrange to have the meeting at some such time; then the question of reduced rates will not remain uncertain, and the bee-keeper will feel that he can afford to go because of the other good things outside of beedom that he will get. For instance, if it be a farmers' institute—and most bee-keepers are farmers—the meeting could be held a day or so in advance of or following that institute. Before or after the convention, as the case may be, he can attend the institute, and thus feel that he has an additional incentive for going so many miles. The attendance at the N. A. B. K. A. at Washington a year ago was very small. There was some talk of having it held during the G. A. R. day in September previous; but the idea was abandoned because of the great crowds that would be present, and the accommodations for bee-keepers would be unpleasant. Better have put up with a few unpleasant accommodations, and have had a large attendance. We always have good and profitable conventions when there is a large number of bee-keepers.

SPECIAL NOTICES.

FOUR CARLOADS IN ONE SHIPMENT.

We have just shipped to F. L. Possen & Son over 80,000 lbs. of bee-keepers' supplies in four carloads. They will go across the continent on the Northern Pacific R. R., together with 13 cars of garden seeds, in a solid train load, all for this one enterprising firm. This amount of supplies for Oregon and Washington indicates that bee-keeping is a growing industry in those rapidly developing States. This shipment includes about two tons of comb

foundation, over 1200 hives and three hundred thousand sections, and other supplies too numerous to mention. Almost all the staple article of bee-supplies will be found in this stock; and our friends in the Northwest can be supplied with goods which can not be surpassed in quality and workmanship near home without the excessive freight and delay incident to shipping from here direct in less than carload lots.

MUTH JARS IN STOCK AGAIN.

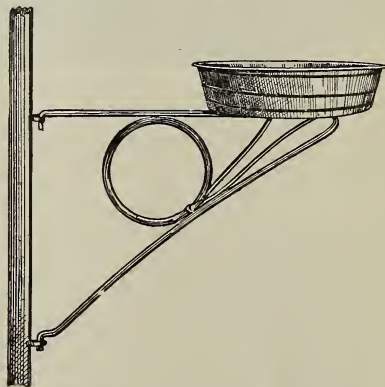
We have the following from Chas. F. Muth & Son, on a postal, dated Nov. 2, which explains itself:

We shall have again a full supply of honey-jars in about one week from now, when we shall ship all orders on hand promptly, and be ready for new orders.

CHAS. F. MUTH & SON.

Cincinnati, Ohio.

DAISY FOLDING FLOWER-POT BRACKET.



Above we show a very neat and convenient flower-pot bracket. The bracket is of wire that hooks into two screw-eyes in the wall, so it may swing around; and the pot-holder is a tin basin securely fastened to the bracket, so it may also be tipped down to one side. All is neatly japanned and striped. Introduction price, 15 cts. each; by mail, 7 cts. extra for postage. Given free for a new subscription to GLEANINGS, and 7 cts. to pay postage.

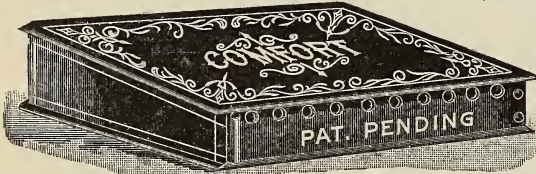
FAMILY GRINDSTONE.



In the cut above we show a very convenient and useful tool that should be found about every home. We have been selling these small grindstones for years, and have had them listed in our catalogue, but have not before brought them so prominently before our readers. Of course, those who have a large grindstone in good running order will not need one of these so much; but even then I think the good housekeepers could keep their knives and tools in better condition for use if they had one of these small stones. The stones are mounted in malleable-iron fixtures. There is a trough for

water to keep the stone wet when in use, the whole mounted on a wood base. They are made from 6 to 12 inches in diameter. We have in stock ready to ship promptly the following sizes at prices annexed; and, being situated within a few miles of the factory, we can get larger sizes if they are wanted. The 6-inch stone is large enough for ordinary use, and the one that most will prefer. Price 60 cents. We have also 8-inch at 80 cents, and can furnish 10-inch for \$1.00 each; will sell the 6-inch by the dozen at \$6.00.

COMFORT FOOT-STOVE.



A sure cure for cold feet and the many ills that result from or are aggravated by them.

An enterprising inventor in this country has discovered a principle for extracting from bituminous coal that part which produces heat, and yet gives no smoke or odor in burning. There are a great many uses to which this fuel may be applied. It has already been successfully used in hand and foot stoves. The hand-stove is a small metal box covered with velvet, about an inch thick and 4 inches square, with sliding cover, and slightly oval, to fit on the curves of the face or body. It is used in the place of a rubber hot-water bottle in applying heat in cases of neuralgia, earache, bowel complaint, and such ailments. As it gives an unvarying heat for over two hours from one charge of fuel, it is readily seen to be far superior to a water-bottle. Many physicians who have tried it are greatly pleased with it. The fuel, in a slightly different form, is used in a foot-stove called "Comfort," as shown above. One charge of fuel in this will give an unvarying heat of 200 degrees for ten hours, more or less, according to the draft you give. It is of inestimable value in keeping warm on long drives in cold weather. It may greatly add to your comfort by being placed under your feet in office or home when other means of heat are not needed, or are not sufficient. The fuel lights with a match, and the stove is ready for use in three minutes.

Two dozen charges of fuel for the hand-stove weigh only 4 oz., and the stove itself about 5 oz. Price of stove and 2 doz. charges of fuel, 50c; by mail, 60c. Fuel alone at 15c per doz.; 2 doz., 25 cts.; 5c extra for postage. Price of foot-stove, \$1.50. Fuel for same, per box of 50, \$1.50. A Comfort foot-stove weighs about 3 lbs., and a box of fuel 8 lbs. They can not be mailed. We will make special prices on these goods to agents; and, from the experience of the inventor, I should say they would be very rapid sellers.

CONVENTION NOTICES.

The Central Michigan Bee-keepers' Association will meet in Lansing, in Pioneer Hall, Nov. 22. J. H. LARRABEE, Sec.

The Carolina Bee-keepers' Association will hold its third annual session at the Court-house, Charlotte, N. C., Dec. 7, 1893. A. L. BEACH, Sec.

There will be a meeting of the Northern Illinois Bee-keepers' Association at the Supervisors' Room of the Court-house, in Rockford, Ill., Dec. 19, 20, 1893. B. KENNEDY, Sec. New Milford, Ill.

The Eastern Iowa bee-keepers will hold their annual meeting at Delmar, Dec. 13 and 14, 1893. All interested in bee culture are requested to be there, and to bring with them any thing of interest to bee-keepers. FRANK COVERDALE, Sec. Welton, Ia

The Illinois State Bee-keepers' Association will hold its annual meeting at Springfield, Dec. 12 and 13, 1893, in the Senate Judiciary Room, at the Statehouse. The Illinois State Grange, the Illinois Horticultural Society, and the various live-stock associations, will hold their sessions at the same time and place. Railroad and hotel rates have already been secured. The fare on all the leading railroads will be one and a third for the round trip, on the certificate plan. That is, the purchaser of a ticket will ask the agent for a certificate showing that he paid full fare going, and he will get a return ticket for one-third. The leading hotels have given us a rate of \$1.50 a day, where two full days' board is paid. Come, and let us have a grand meeting. The bee-keepers and horticulturist will have their headquarters at the Hotel Palace. J. A. STONE, Sec.

Books for Bee-Keepers and others.

Any of these books on which postage is not given will be forwarded by mail, postpaid, on receipt of price. In buying books, as every thing else, we are liable to disappointment if we make a purchase without seeing the article. Admitting that the bookseller could read all the books he offers, as he has them for sale, it were hardly to be expected he would be the one to mention all the faults, as well as good things about a book. I very much desire that those who favor me with their patronage shall not be disappointed, and therefore I am going to try to prevent it by mentioning all the faults, so far as I can, that the purchaser may know what he is getting. In the following list, books that I approve I have marked with a *; those I especially approve, **; those that are not up to times, †; books that contain but little matter for the price, large type, and much space between the lines, †. foreign, §. The bee-books are all good.

BIBLES, HYMN-BOOKS, AND OTHER GOOD BOOKS.

As many of the bee-books are sent with other goods by freight or express, incurring no postage, we give prices separately. You will notice, that you can judge of the size of the books very well by the amount required for postage on each.

- 8 Bible, good print, neatly bound 20
- 10 | Bunyan's Pilgrim's Progress**..... 30
- 20 | Illustrated Pilgrim's Progress**..... 75
- This is a large book of 425 pages and 175 illustrations, and would usually be called a \$2.00 book. A splendid book to present to children. Sold in gilt edge for 25c more.
- 6 | First Steps for Little Feet. By the author of the Story of the Bible. A better book for young children can not be found in the whole round of literature, and at the same time there can hardly be found a more attractive book. Beautifully bound, and fully illustrated. Price 50 c. Two copies will be sold for 75 cents. Postage six cents each.
- 5 | Harmony of the Gospels..... 35
- 3 | John Ploughman's Talks and Pictures, by Rev. C. H. Spurgeon*..... 10
- 1 | Gospel Hymns, consolidated Nos. 1, 2, 3, and 4, words only, cloth, 10 c; paper..... 05
- 2 | Same, board covers..... 20
- 5 | Same, words and music, small type, board covers..... 45
- 10 | Same, words and music, board covers .. 75
- 3 | New Testament in pretty flexible covers... 05
- 5 | New Testament, new version, paper covers. 10
- 5 | Robinson Crusoe, paper cover..... 10
- 4 | Stepping Heavenward**..... 18
- 15 | Story of the Bible**..... 1 00
- A large book of 700 pages, and 274 illustrations. Will be read by almost every child.
- 5 | The Christian's Secret of a Happy Life**.... 25
- 8 | Same in cloth binding..... 50
- 1 | The Life of Trust, by Geo. Muller**..... 1 25
- 1 | Ten Nights in a Bar-Room. T. S. Arthur*..... 05
- 5 | Tobacco Manual**..... 45
- This is a nice little book that will be sure to be read around the boys' get hold of it, and any boy that reads it will be pretty safe from the tobacco habit.

BOOKS ESPECIALLY FOR BEE-KEEPERS.

- Postage] [Price without postage.
- 15 | A B C of Bee Culture. Cloth..... 1 10
- 5 | A Year Among the Bees, by C. C. Miller..... 45
- 1 | Advanced Bee Culture, by W. Z. Hutchinson 50
- 3 | Amateur Bee-keeper, by J. W. Rouse..... 22
- 14 | Bees and Bee-keeping, by Frank Cheshire, England, Vol. I. §..... 2 36
- 21 | Same, Vol. II. §..... 2 79
- or, \$5.25 for the two, postpaid.
- 1 | Bees and Honey, by T. G. Newman..... 1 00
- 10 | Cook's New Manual. Cloth..... 90
- 5 | Doolittle on Queen-Rearing..... 95
- 2 | Dzierzon Theory..... 10
- 1 | Foul Brood; Its Management and Cure; D. A. Jones..... 09
- 1 | Honey as Food and Medicine..... 05
- 10 | Langstroth on the Hive and Honey-Bee.. 1 25
- 15 | Langstroth Revised by Ch. Dadant & Son.. 1 25
- 10 | Quinby's New Bee-Keeping. 1 40
- 1 | Thirty Years Among the Bees, by H. Alley 50
- 4 | Success in Bee Culture, by James Heddon 46
- 1 | Handling Bees, by Langstroth. Revised by Dadant..... 08
- 1 | Bee-keeping for Profit, by Dr. G. L. Tinker 25
- 5 | The Honey Bee, by Thos. William Cowan.. 95
- 1 | British Bee-keeper's Guide Book, by Thos. William Cowan, England §..... 40
- 3 | Merrybanks and His Neighbor, by A. I. Root 15
- 4 | Winter Problem in Bee-keeping, by Pierce 46