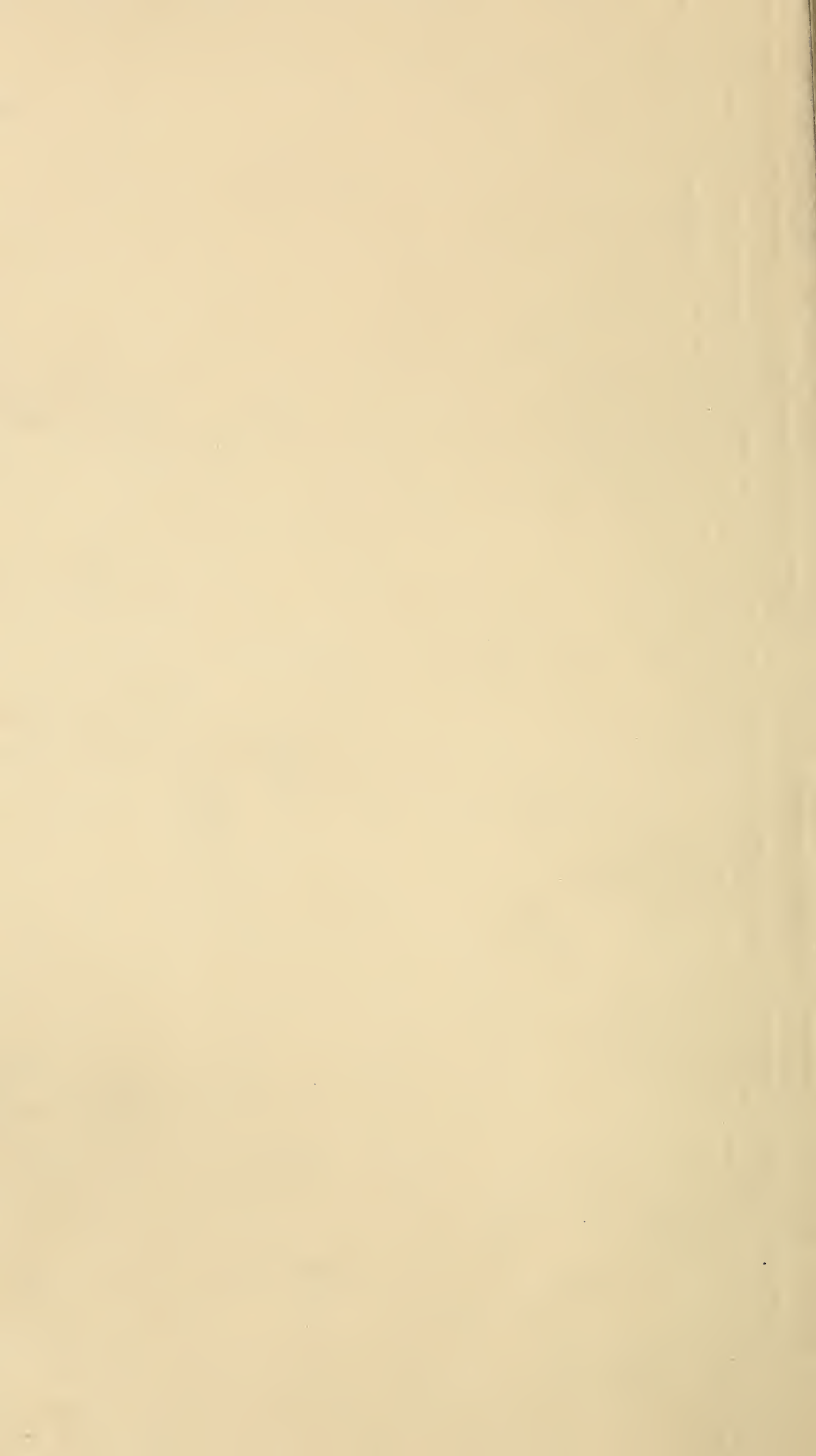


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GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED
TO BEES,
AND HONEY,
AND HOME
INTERESTS.

ILLUSTRATED
SEMI-MONTHLY

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THE SUGGESTION is given, p. 835, to take hot honey and lemon juice, but what for? gout or toothache? [Probably for a cold.—STENO.]

JOHN S. CALLBREATH'S advice, page 841, is excellent as to rearing an abundance of the right kind of drones; but if I understand aright he raises queens from "the best of the swarm queens." Will not the chances for non-swarmer be greatly increased if he raises queens from the best of the non-swarmer?

YOU SAY, Mr. Editor, that indoor wintering is practicable if the variation is only four or five degrees. I should say it was practicable if the variation was only ten degrees, providing the average was 45°. [Perhaps you are right; but much better results are secured, I believe, on the five-degree limit of variation.—ED.]

HAVE THE PRINTERS been taking liberties with L. Stachelhausen's manuscript, or do I read crooked? At bottom of page 840 he says: "Some time the next day . . . the lower story of the brood-chamber is removed," and I don't make out from what precedes that more than one story for brood is present, and surely he doesn't mean to leave the bees with nothing but sections. [Perhaps Mr. S. can explain.—ED.]

THOSE FOUR MEN, p. 839, look as if stumped to decide what ails that brood; but from the look of determination on Stevens' face he'll come to some decision before returning the frame to the hive. [If those fellows are ever "stumped" it is not as to what ails the brood, but how to cover all the territory in New York. They are doing good work, and bee-keepers all over the United States ought to pat them, metaphorically, on their backs.—ED.]

YOU SAY, MR. EDITOR, p. 833, it messes up your feeders too much to pour in dry sugar and water, and the only way to avoid this

messing-up is to mix the syrup thin in an extractor. We have an easier way, and I suspect our feeders are left cleaner than yours. Just pour in a little more water at the last. [Perhaps you are right; but are you quite sure that the syrup, when finely ripened in the combs, or "inverted," as the chemists say, will be as thoroughly done as if we were to mix the syrup half and half thoroughly beforehand?—ED.]

THAT'S A GOOD ARTICLE of Bro. Doolittle's, p. 842, only there ought to be an addendum. When the crop is so short at Skaneateles that grocers are getting honey from New York, then the figuring ought to be different. To the New York price, 15 cts., must be added 3/4 cts. for freight and hauling, making 15 3/4 cts. that the grocer must pay for the honey that he gets from New York, and he should not expect to buy from the bee-keeper for less. In other words, the Skaneateles bee-keeper should sell in the home market for 3 cts. more when the crop is short than when it is long.

AUSTRALIANS seem agreed that galvanized iron does well to hold honey so long as honey without air touches the surface; but let the surface be simply daubed with honey so the air can get at it, and chemical action at once takes place. [A short time ago the Australians seemed to be agreed that galvanized iron was not fit for either extractors or cans, for holding honey. The verdict in this country seems to be that for extractors it is safe, because the honey is supposed to remain in the machine only long enough to run out. But I believe myself that storage-cans of less than one or two barrel capacity should be made of tin. If larger, galvanized iron will be all right.—ED.]

WHITHER are we drifting, when the purist, Stenog, upholds the use of "hive" for "colony" by means of a metonymic prop? It seems to me, Stenog, that you are going a little too far when you assert that "bee-keepers generally speak of colonies of bees either as 'hives' or 'swarms.'" I don't believe "bee-keepers generally" make that mistake one time in five, and I don't believe that any bee-keeper who is at all careful in the use of language ever commits the error except as a slip.

[I certainly did not mean to be understood as defending the use of the word *hive* for *colony*. I simply tried to whitewash a slip in that one case only. Such use of the word *hive* is totally wrong. When I said bee-keepers generally use *hive* or *swarm* for *colony*, I meant in their manuscript, and that we here change the word when we know it should be so modified. Perhaps I should have said they *often*, instead of *generally*, use one word for the other.—STENOG.]

THE AUSTRALASIAN BEE-KEEPER approaches the subject of a bee keeper's right to territory in a somewhat gingerly manner, questioning the moral right to encroach on territory already occupied so long as other territory can be found, inviting discussion "with a view of establishing an etiquette or understanding between bee-keepers and their acknowledged rights to localities." Friend Pender, unless etiquette is stronger in Australia than here it will not keep a new comer from encroaching, and I once got a whole lot of hot shot for saying law ought to back up etiquette. [While etiquette in the matter of priority of rights is sometimes grossly violated, yet in my travels over the country I find that it has a larger sway and influence than you would imagine. There has been so much talk on the subject that all bee-keepers of the better class, I believe, are disinclined to encroach on the territory of their neighbor bee-keepers.—ED.]

"I AM AFRAID there are very few honey-producers who give this [getting better stock in the apiary] any intelligent thought or attention," quoth ye editor, p. 841. I am afraid you are too nearly right in being thus afraid, Mr. Editor; but I think more attention is given to it now than ever before; and if you keep hammering away at it as you have lately been doing, I'm sure a good many of us will get waked up. [The only way to get the general bee-keeping fraternity interested in this subject is to keep hammering. In fact, I have already said so much I am almost afraid now that some of our subscribers will become disgusted. But I shall keep it up, nevertheless, as by so doing I am firmly convinced that our honey crops, especially during a season like the one just past, will be materially increased. When the fraternity begin to realize that there is a market value for good red-clover queens at prices away beyond those that have been hitherto offered for any stock, there will be a stronger effort made toward the production of longer-tongued bees than was ever made before.—ED.]

WHEN CAUGHT without scissors (a rare thing, because I usually have a pair tied to my record-book) I have used a knife as in the first picture, p. 838, only I held the queen feet down. Next time I'll try it as in the picture. [This serves to illustrate the slight variation in the methods used by practical bee-keepers. By comparing those slight variations we each and all of us have the opportunity of selecting the method or combination of methods that is best. The matter of clipping queens' wings seems like an unimportant one,

and perhaps it is; but to say the least it has elicited a great deal of interest. It is difficult to find queens; and whenever in going through the apiary we happen to discover her majesty, and we find she is not clipped, the thing to do is to seize the opportunity, then and there, whether we have special facilities for the purpose or whether our fingers are nice and clean. To close the hive up and then at some future time, with scissors and other paraphernalia, open up the hive and *hunt* and *hunt* and *hunt* for the queen, wastes in the aggregate hours of time. It should be the practice of all bee-keepers to clip whenever the queen is found, if she is not already cropped. To be able to do it safely and easily with a common jackknife, either sharp or dull, is an important thing to know.—ED]

EDITOR PENDER argues that 4 lbs. of honey is enough to make a pound of wax. Here's his argument: A 7-pound swarm carries with it 1 lb. of honey; no honey worth mentioning is gathered in the first 24 hours, and in that time 4 oz. of comb is built, or 1 oz. for every 4 oz. of honey. [The old estimate used to be 20 lbs. of honey to one of wax; but some fifteen or twenty years after these figures were propounded by a celebrated German, Mr. P. L. Viallon, of Bayou Goula, La., at the Bee-keepers' Congress at New Orleans, some fifteen years ago, told of a series of experiments in which he had proved quite conclusively that the 20-lb. figure was altogether too high; that he could not discover that the bees used more than 7 lbs. of honey to make one of wax. And now it would not be at all surprising, if the experiments were more elaborately conducted, that we should find the 7-lb. limit was still too high. Perhaps the 4-lb. figure is correct. It is certainly true that, if it took 20 lbs. of honey to make a pound of wax, that wax would necessarily have to sell at five or ten times its present figure; and it would look as if even the 7-lb. limit would make wax much higher than it is now. So from a commercial standpoint I should be inclined to believe that friend Pender is not very far off in his estimate.—ED.]

I FEEL GOOD over the thought that the last colony of my bees has now been got out of the old rotten hives into Dovetails. Some of the frames are still of the old kind, 18x9, but I'll gradually work them out. No one knows the trouble of two kinds of hives so well as the one who has struggled with it for a term of years. [When I visited Dr. Miller once, some three or four years ago, I found that he had got old rags stuffed in the cracks in some of the poorest of his old hives. I could not resist the temptation to take some kodak snap shots. I was chuckling over the fun I would have in showing the pictures of these hives of one of the leading bee-keepers to the readers of GLEANINGS, when Emma, Dr. Miller's sister, put in a most vigorous protest. "Why, how they look!" and would I be so mean as to show up the *worst* feature of Dr. Miller's apiary? That wasn't fair. No, she would never forgive me if I would ever be guilty of such a breach of confidence. Well,

I have kept still about it all these years; but now that Dr. Miller has finally disposed of those old hives, and has in their place modern Dovetails, I do not believe I am under obligations to keep the cat in the bag any longer. But if I could find those photos I believe I would have the meanness to show them to our readers. Say, doctor, I congratulate you on the use of all modern bee-hives. May you never, never use rags again to stop leaky hives. N. B.—Tear this leaf out before the women see it.—Ed.]

RED-CLOVER TUBES and bees' tongues don't seem so very far apart. We now have tubes .13 deep, and tongues with a reach of .23. Get those measurements *established*, and the red-clover honey crop is ours. Or, figure another way. Clover-tubes now vary from .13 to .38, averaging .25, and we can count on their remaining so. Establish the .23 tongue, and we get all the nectar from tubes .23 or shorter, and that will be 40 per cent of all the red-clover crop, if there is a *regular* variation from .13 to .38. Stretch the tongues .02 more, and half the crop is ours. That's only counting the tubes that will be drained to the bottom. An extra quantity will be got from some of the other tubes. For example, with .25 tongues all the nectar will be got from a .26 tube except .01 of an inch. You're right, Mr. Editor; never mind the tubes but stretch the tongues. [Yes, sir, you are right in your figuring, I believe; but do not assume that we have a full colony of bees whose tongue-reach is .23. J. P. Moore has a queen, some of whose bees will show that extreme measurement; but the majority of them run about .21. But the very fact that the bees of this queen have a tendency to sport gives friend Moore a chance to pick out the sports and breed from those that show the longest tongue-reach. It is true that, when we have reached the limit of .25 (possibly we could go further), we are still a little shy of reaching the depth of the longest clover-tubes. But there will be some satisfaction in thinking that we can get down into them deeper than we ever did before.—Ed.]



The snow! the snow! y'ho! y'ho!
The birds are all gone save the sparrow and crow;
The rich greet it cheerily,
Poor men more drearily,
Sick folks quite wearily,
That chilly hexagonal snow.

WESTERN BEE KEEPER.

This is a new comer from Boulder, Col., and in every respect a readable and able bee-journal, published by the Labor Publishing Co. I hope to see it regularly. On one page I notice an article copied from the *Chicago Chronicle*, in reference to making paraffine wax from petroleum. It is very interesting,

and describes the various products that are manufactured from this oil in addition to common kerosene; but I wondered the following paragraph was printed without any protest on the part of the editor:

The busy little bee was long ago cheated out of his monopoly in the honey-making business by the artificial-honey manufacturers. Now he is left to improve the shining hour as best he may, for his corner on wax is rapidly slipping away from him. Paraffine, a product of crude petroleum, is taking the place of beeswax in commerce very largely, and half the wax candles of to-day are pure paraffine, and never saw the inside of a bee-hive.

While paraffine often can, without a doubt, be made to take the place of beeswax, and answer as good a purpose, especially for religious ceremonies, the first sentence shows plainly that the correspondent did not know what all well-informed people do know—that paraffine can by no means be made to take the place of beeswax in comb, as it melts too easily.

Right here I am pleased to note that the editor has, after all, grappled this matter. He says:

In these days of prevailing adulteration, when so often things are not what they seem it is a comfort to know that, when one buys comb honey, he may know without question he is getting the genuine article. The silly stories seen from time to time in the papers about artificial combs being filled with glucose, and deftly sealed over with a hot iron, have not the slightest foundation. In fact, for years there has been a standing offer by one whose financial responsibility is unquestioned, of \$1000 for a single pound of comb honey made without the intervention of bees. The offer remains untaken, and will probably always remain so, for the highest art of man can never compass such delicate workmanship as the skill of a bee accomplishes.

Will somebody please undertake to get this straightened out in the columns of the *Chronicle*? By the way, daily papers never correct a false assertion. A New York paper recently gave the obituary of a man who immediately replied, trying to prove that he was not dead. No retraction was made, but the editor said he would announce the birth of the man in question, in the proper column, and leave his readers to draw their own inference.

Grace and sweetness are combined in the following:

Grace L. Lane and Sadie J. Butman, two ladies who moved from Missouri recently, will establish a honey trade in the vicinity of Loveland. Both were engaged in school-teaching in Missouri, but, it is said, have been preparing themselves for this work for some time.

Mrs. H. R. Norville, of Denver, expects to establish a large bee and Belgian-hare industry near Loveland this fall. She is negotiating for twenty acres, and will proceed to stock it with bees and young hares.

In regard to starting in bee-keeping in Colorado, the editor says:

The bee industry in Colorado is still in its infancy. Still we know of no locality better adapted for bee culture than the eastern slope of the Rockies. With its abundance of wild flowers, and fields of alfalfa, it offers to wide-awake people a good business proposition and a climate equaled by none. There are plenty of locations and openings for many in bee culture in Colorado.

The following will be of interest in the latitude of Toledo :

"Keep all colonies strong, and do not put off till tomorrow what should be done to-day," is the motto of A. B. Mason, who is one of the most successful bee-growers in this country.



Here's a good idea :

The rapid strides made in the science and practice of bee-keeping during the present half-century, and the present great proportions of the industry are largely due to the fraternal feeling and unselfish interest taken in its development by many of its promoters.



Here is something relative to Colorado as a honey State :

One apiary in this county, the owner states, includes swarms [colonies?] that have produced over 800 lbs. each up to Aug. 1, of this season, and this apiary is at least 25 miles from the mountains, although it is in a well-watered and fertile region. There are two other apiaries within a mile of this place which have not had one-half the success of the one mentioned.

The editor says further :

A bee-keeper who has kept bees for years, and visited them only to remove the honey, would be no more of a success in Colorado than where he is now; but the industrious, studious, and scientific bee-man will find this region well fitted to the industry.

The great number of inquiries made relative to Colorado is my reason for saying so much about it here. But all should remember what has been said in these columns about starting new apiaries where others have been long in possession of the pasturage. The "unwritten law" governing in such cases in the "woolly West" should be observed.



WESTERN APIARY.

This journal is the successor of the one just quoted above. It is published monthly by C. H. Gordon, editor and proprietor, Boulder, Col. It has 16 pages, very coarse print, and is well gotten up. One department is devoted to Belgian hares. Excellent pictures of the Frisbee family are given—Mr. R. K. Frisbee and his son, J. C. Frisbee, and the wife of the latter, who is the secretary of the Frisbee Honey Co. The elder Frisbee is over 80 years of age, but rides a wheel to tone down his exuberance of spirits—a rare thing.



BRITISH BEE JOURNAL.

In the museum of the Whitechapel Library, in East London, three observatory hives were put from Oct. 9 to 12. Nearly 2000 children, from 22 elementary schools in East London, came with their teachers in parties numbering from 30 to 50. Each party had a half-hour lesson, and then the children marched past the hive two by two to see the queen, who showed herself most graciously to every party except two. These forgot their disappointment in the pleasure of seeing the bees' tongues sipping syrup by means of the very clever arrangement which is attached to Jas. Lee & Sons' observatory hives. That is not only a good way to teach in general, but a good way in particular to introduce to the children the wonders of the bee-world.



HIVING SWARMS ON SHALLOW BROOD-CHAMBERS.

The Secret of Keeping Down Increase and Preventing Swarms More Fully Explained.

BY HARRY LATHROP.

Friend Root.—Referring to my article, "Hiving Swarms on Shallow Brood-chambers," page 684, there is one point I forgot to mention. It might appear to some bee-keepers who read the article that it would do no particular good to unite the bees from the shallow brood chamber to the old hive at the left when the end of the honey season has come, as, when a colony of bees is populous enough, it will do no good to give them more bees, and may do harm. But the point is, if the honey season is a good one, and quite long, I take so many young bees from the old hive and run them into the working colony from time to time, that the old hive will not have bees enough at the close of the season; hence, see that the combs in the old hive are well filled with honey; unite the bees, and you have a good strong colony with a young queen to go into winter quarters.

Now, referring to Dr. Miller's Straw on the front page of GLEANINGS for September 15, he asks me to tell *why* I have fewer swarms, and you in a footnote repeat the request with so much emphasis that I am a little inclined to believe you and the doctor are poking fun at me. Nevertheless I will offer my humble explanation. In the first place I will say I have not had any swarms from colonies worked exclusively for extracted honey in years, and I suppose others have had the same experience. Now, a colony of bees working away quietly year after year in an apiary, without once attempting to swarm, sets a good example in the community, at least. I try to keep my comb-honey colonies as busy in the sections as possible, watch them closely, and give storage room as needed, removing the finished supers promptly. The result has been that only about a third of such colonies swarmed out in good honey years. If the season is a poor one, furnishing little or no honey for the surplus apartment, but enough to keep brood-rearing going at a good pace, then is the time my colonies want to swarm, and do swarm. I have had them cast swarms at a time when I knew there was very little honey in the fields for them, and no prospect whatever for any ahead. At such times I just let them go to the woods, and am glad to get rid of them. They would have been only consumers had they remained.

If I should buy an apiary from some farmer who had attended to them as farmers usually do, allowing each colony to swarm two or three times each season, I could not expect the same results for several years; so you

see, doctor, it is a matter of education, to a certain extent. I can give you also the opinion of a Wisconsin bee-keeper of far greater experience than myself—Mr. Frank McNay. I had a talk with him this present summer on the same question. He thinks as I do, that bees can be made to lose their desire and tendency to swarm, by proper management. He related how at one time he purchased a good-sized apiary from a farmer, and worked them the same as he did his other yards, but was surprised to find these bees casting swarms right along, while there was none in the other apiaries. In apiaries of bees that he has owned and operated for a number of years he has so little swarming that it is not necessary to keep any one in on the watch.

poking fun at you, but actually desired more light, as I think Dr. Miller did also. It is certainly true that, by careful selection, one might accomplish much in getting a lot of bees or colonies that will not swarm very much. Frank McNay, whom I have long known to be one of the most extensive and practical bee-keepers in Wisconsin, would not be sponsor for an idea of this kind unless he *knew* from experience there was something in it.

But here is an article from Mr. A. Norton, right on the same subject, very largely confirming the experience in the line of producing comb honey with shallow brood-chambers, and the possibilities of keeping down swarming.—ED]



WISCONSIN FOUL-BROOD INSPECTOR LOOKING FOR FOUL BROOD. SEE EDITORIALS.

Now, Dr. Miller and Ernest, if either of you wish a queen from one of my colonies that has worked right along without swarming for the last ten years I will sell you one for \$200. You see, it is just as easy for me to have \$200 queens as it is for others; but don't mention that I offered them to you at such a ruinously low price. When people refuse \$1000 for a single Belgian hare, even \$300 for a good non-swarming queen ought to be considered low.

Browntown, Wis., Sept. 26.

[Referring to the Straw on the first page of Sept. 1 GLEANINGS, I would say that, so far as my connection was concerned, I was not

PRODUCING COMB HONEY IN SHALLOW BROOD-CHAMBERS IN CALIFORNIA.

BY A. NORTON.

Friend Root:—In your issue for Sept. 1 you call for the experience of any who have tried the method described by Mr. Lathrop in the same issue. About four years ago Mr. W. H. Kloer, of Terre Haute, Ind., had an article in GLEANINGS describing this plan for comb honey. That same season I had an article in the *Pacific Apiculturist* on the method, which I had independently hit upon myself that year. I gave credit to Mr. Kloer in my article for precedence in having his own method

printed first, but stated that I had not copied from him in my method. However, I do not think that either of us had been the first to put it into practice. Many writers had told at various times how to dispose of increase and how to get surplus from young swarms. But with such instructions in the abstract, I had been sufficiently original to apply them to a way of my own in the concrete. This method is not merely to get surplus, but in addition to prevent increase beyond what one wants to keep in his apiary. I have liked the way very well. It does not differ essentially from Mr. Lathrop's. I use shallower hives than he does.

My hives for surplus are only half the depth of my regular hives, which are closed-end Langstroth-size 12-frame hives, the frames suspended at the middle something like the Danzenbaker frame, yet different from it. My surplus hives take any kind of shallow frame I may happen to have. Hoffman half-depth frames do me first rate; and your Hoffman Dovetailed shallow supers would make excellent bodies for this method as I practice it. In some seasons I have no trouble at all about the queen's going up into the sections to lay, even without excluders. In other years, without excluders, the queens have gone in, sometimes quite badly. I have all of my queens clipped. As swarming-time approaches I endeavor to keep track of the condition of colonies. I do not wait for them to swarm if I can help it. When queen-cells are just ready to seal over, the colony being consequently about ready to swarm, having the fever well upon them, and being populous, if honey conditions are equally favorable I shake the bees with their queen into a shallow hive. As the queen will have slacked up in laying by this time if it is just as cells are sealed over, the bees can be taken very liberally from the old colony, leaving but a comparatively small force in the hive. The queen-cells will be so far along that good queens will result therefrom; and the bees that are left will soon have young larvæ past the need of feeding. I put the shallow hive in the place of the old one, which is removed but a short distance at first, then further, to let young bees go into the shallow hive (if needed there), then gradually nearer some time in the future, with a view to the final reuniting. I have the shallow hive furnished with starters of two-inch depth or more, with two or three empty combs for the queen to begin laying in. I regulate the supers for sections by the conditions of the season, etc.

It is surprising, to one who has not noticed it before, how the few bees in the parent colony, being relieved of nursery cares and the drain of feeding young larvæ, will accumulate honey. They will, in a good season, soon have their combs fat with treasure. The new colony will begin at once in the sections, and will build the shallow brood-combs in time to keep the queen laying, though she will not have all the room she could occupy. In my locality the seasons are not long enough to induce danger of swarms from the shallow hives. After sage bloom is over in Central California,

the honey-flow is barely more than will enable bees to make a living. There might, in localities of longer periods of plenty, be danger of swarming from the young colony as the brood became crowded, necessitating hives an inch or two deeper to begin with, or a modified management with the very shallow ones. At the close of the season, or whenever I am ready to reunite them, I kill the queen that is least desired (often the young one, as she was mated with a black drone, while the old one may be one that has cost me money to get); place wire cloth or even porous burlap over the shallow hive, and set the deep hive on top of it. Mr. Kloer recommended setting the shallow hive above the deep one; but I find that bees will carry their stores upward more readily than downward, besides having less in the shallow hive to move. When they have become somewhat acquainted with each other, and have acquired a common scent, I gradually make open communication between the stories, or sometimes leave the bees to gnaw through the burlap themselves, and the two colonies become one. Minor details I need not take space to mention, such as seeing that queen-cells are not sealed before union takes place successfully. They might be torn down, or might cause trouble. Such things will readily occur to any common-sense bee-keeper. After the shallow hive is removed from under, the dry combs may be saved for future use, may be sold, perhaps, to buyers of empty combs, or, if one is accumulating them every year, they can be sold as wax. Some may like to use the same each year, giving a shallow brood-nest full of empty combs to the young swarms. I have been able to get surplus honey by the plan given above when I could not by any other, and I think the method is a permanent success.

Monterey, Cal., Sept. 11.

[In localities where the honey-flow is short, it looks decidedly as if we might get more honey by contracting the brood-chamber, providing we can also at the same time keep down swarming. Both Mr. Lathrop and Mr. Norton have been successful to a great degree. No matter what the shape of the brood-chamber is, putting bees on mere starters has decidedly a tendency to check swarming, and to force the honey, if it does come in, into the sections with a rush. The scheme of reuniting, either gradually or all at once, by the plan spoken of by Mr. Lathrop or by Mr. Norton, is an important feature of this method of producing comb honey.

Now, it would be folly, it seems to me, to drop the discussion at this point, and I should be glad to hear from a number of our readers who have been working along these lines.—ED.]

CLOSED-END FRAMES AND HIVES.

The Bingham and Heddon Compared.

BY J. O. SHEARMAN.

There are three forms of closed-end frames familiar to me for years, and now in use in

my apiary, either as complete hives or extracting-supers.

1. The Bingham hive complete; 2. The Heddon hive and the Shirley hive, which I use as supers mostly.

The Bingham first. I begin with the frame as being the most essential part of *any* hive. The frame consists of a top-bar 20 inches long, $\frac{3}{4}$ in. square; end-pieces $6\frac{1}{2}$ in. tall by $1\frac{3}{8}$ wide and $\frac{1}{2}$ thick. The end-pieces are nailed to the top-bar so that one corner of the bar comes to the middle of the top of the ends, and the opposite corner is down for the comb or foundation to be attached to. The bees also attach the combs to the ends of the frames as well. The front of the brood-nest is a board or frame 21 in. long and $6\frac{1}{2}$ wide. The entrance is 20 in. long by $\frac{3}{8}$ high.

$4\frac{1}{4} \times 2$ in. with separators. Sections stand crosswise of the frames. For extracting—well, any old straight combs I have in full sets, on top of queen-excluder of course.

The Heddon hive is different, as shown in cuts 1 and 2, to compare the brood-chambers of each hive. The frame is $18\frac{1}{8}$ long by $5\frac{3}{8}$ deep. Eight of these frames fit in a case which is $5\frac{3}{4}$ deep, leaving a bee-space over the frames. Two of these cases make a hive, with 8 of these shallow frames in each case, and a bee-space through the middle, unless the bees chuck it full of brace-comb, which they often do. The hive stands on a bottom with cleats $\frac{3}{8}$ thick along the sides and back, leaving the front open for an entrance. As seen in the cut, this bottom may be reversed for winter, and has $1\frac{1}{2}$ -inch cleats on the oth-

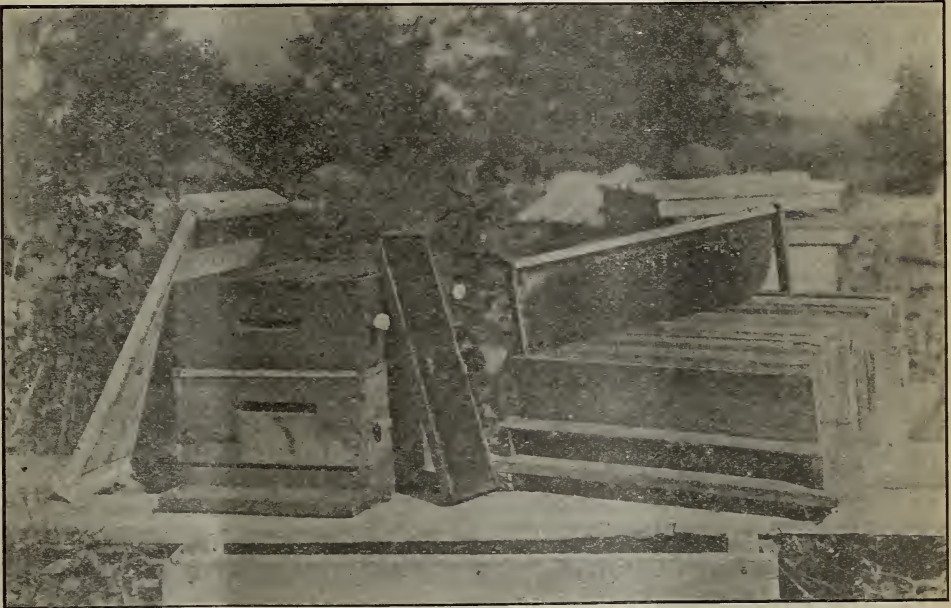


FIG. 1 —HEDDON AND BINGHAM HIVE.

The front and back panels have each a strip $\frac{1}{8}$ in. thick nailed up and down each end (inside) so as to keep a full bee-space for outside combs. These parts all *stand* on a level bottom long enough to project $\frac{3}{4}$ in. beyond the total of the front porch, so as to allow of an outside case over all.

I prefer the cases a little wider, to shed the weather. The front board of this case is 2 in. narrower at the bottom, leaving a porch 2 in. high, sloping to a $\frac{3}{8}$ -inch doorway.

As can be seen, this hive may be used with 10, 11, or 12 frames in the honey season, by moving the back board back; or take out combs and move the back up close if a smaller brood-chamber is wanted (even to a nucleus).

It can accommodate almost any size of super up to 17 by 20 inches—i. e., inside measure. I use one for sections holding 36 of the $4\frac{1}{4} \times$

er side. This hive takes the same size of supers as the L.

New Richmond, Mich., Sept. 19.

[The Bingham hive, a cut and description of which in its more modern form we gave on p. 297 of the current volume, is something like the Quinby closed-end-frame hive. The ends of the frame constitute the ends of the hive. The two open sides are closed up by means of two panels as described. These panels and the frames are squeezed together at each end by means of wire loops in connection with stretcher-sticks. As Mr. Shearman points out, such a hive is very cheaply constructed, and is decidedly on the expansion order, for the brood-nest can be reduced to one, two, or increased to as many frames as the bottom-board will accommodate. Mr. Bingham now uses a bottom-bar to his frame, and his frame is made exactly like the Heddon.

The Heddon hive consists of a series of closed-end frames, each set being confined in a shallow rim or super. The frames are held tightly together by means of two thumbscrews passing through one side of the rim near the ends.—ED.]

LARGE V. SMALL HIVES.

A Decision in Favor of the Eight-frame Langstroth, and Why; the Great Resources of a Good Colorado Locality.

BY M. A. GILL.

Mr. Root:—I have bought the home of Mr. J. E. Lyon, in this city, and rented his apiaries for two years, which I will run in connection with my own, which makes me be-

ever that I, at least, can secure more surplus honey with an eight-frame hive than with any thing larger, especially where the season is as long as it is here. The honey-flow with me lasted 91 days, and I find it takes a good queen, even to her utmost, to keep an eight-frame hive well supplied with brood (*as she must*) for that length of time. My best colony for honey filled 12 24-lb. supers; 11 picked colonies in eight-frame hives made 100 24-lb. cases of honey, while all my eight-frame hives averaged 173 lbs. of comb honey.

I do not wish to open the controversy about large vs. small hives, but I candidly believe that, where a person intends to keep a large number of colonies, and where the season is as long as it is here, and where the owner intends to (and does) meet all the demands of the bees both fall and spring, and where there

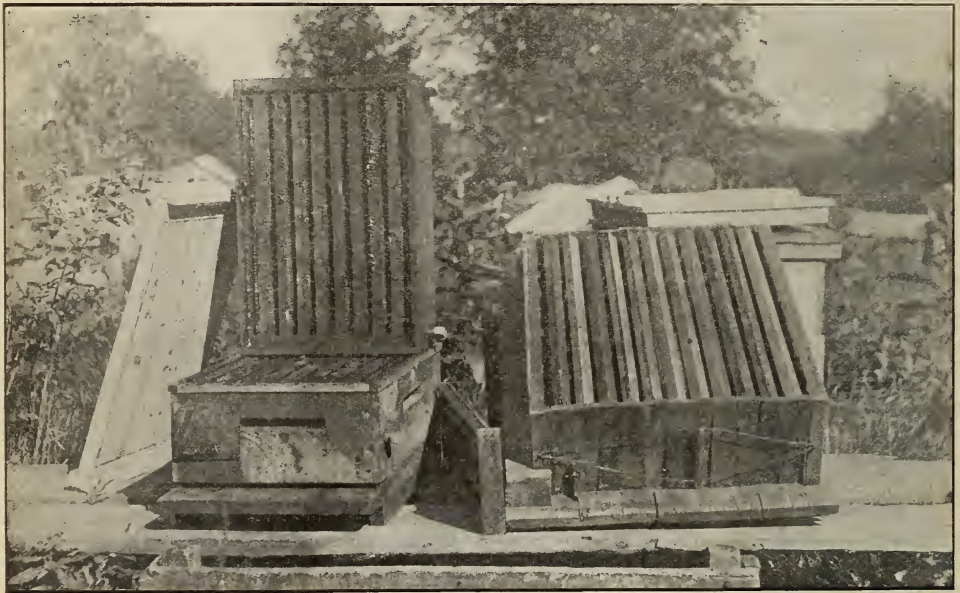


FIG. 2.—HEDDON AND BINGHAM HIVE

tween 700 and 800 colonies for next year. Mr. Lyon's health has failed him, and he has gone to a lower altitude, which we hope, with plenty of rest, will fully restore his former robust health. But many a man besides him would have gone down under the strain of producing 40,000 lbs. of comb honey without any more help than he had this year. We expect to be very busy next year. This includes wife, two daughters, a son, and myself. But we feel equal to the occasion, as we intend to prepare 2000 supers for comb honey this winter, which will enable us to start a little more than even with the bees next season.

A person can manage and care for more bees here run entirely for comb honey, during our long season, than in the East, where the honey season is so short and sweet. I have been trying *hard* for years to like a large hive; but this year has convinced me more than

is female help, that, taking into consideration the cost of supplies, and the difference in honey delivered, *there is more profit with eight-frame hives than any thing larger.*

What you said last winter about this section of Colorado being overstocked is true; but that is not the worst feature in the case, as that insidious foe to bee-keeping, foul brood, has already become a menace to successful bee culture in some sections.

Having had experience with the disease in my own apiaries, as well as in my office as bee-inspector, I shall give it heroic treatment whenever it shows up among my own bees.

Longmont, Colo., Oct. 22.

[J. E. Lyon is one of the most progressive and most successful bee-keepers in Colorado. I met him, both at the convention where he took a conspicuous part, and also at his home.

In a social way he is a genial good fellow, and I know that the Colorado Bee-keepers' Association will miss not only a practical man but an enlivening spirit that is always able to keep a convention from getting dull and monotonous.

With regard to the eight-frame hive, I noticed that it is used very largely in Colorado, although there was a tendency to use the ten-frame width; but the use of that size was confined almost exclusively to those who made the production of extracted honey a specialty.

There can be no doubt that the eight-frame Langstroth hive is well adapted to most localities in the United States. While some other size or style may excel it, yet on the average it meets fairly well the needs of most localities and most bee-keepers. And speaking about the size of hives, I am a little inclined to believe, from testimony that has been offered, that a seven-inch brood-chamber, ten-frame Langstroth width, for the production of comb honey, is a little better, especially if the honey-flows are very short, as they are in many places in the northern part of the United States. It is certainly true that a small hive in any case is better for such localities than a large one, except, perhaps, in some instances where an outyard or two are used, and the bee-keeper can not keep some one to look after swarms. In such cases a large hive often finds favor.—ED.]

FAILURE OF HONEY LAST YEAR.

Wintering in the Cellar; Wintering with a Virgin Queen; Shipping Bees long Distances; Should one Go to Colorado?

BY J. A. HAYNES.

1. To what do you attribute the honey failure in many of the States the past year? Here in South Dakota there has been practically no honey this year, and I am told that Illinois and several other States have but little comparatively. So far as we could tell, the conditions here were perfect, but no honey. Instead we have had to feed for winter. I have fed 320 lbs. of sugar to 36 colonies of my apiary.

2. In wintering in cellar, where the bottom-boards are left on would it not be a good plan to go through now and then with a wire hook, and rake out the dead bees that have fallen in the entrance?

3. I have a colony with a virgin queen. Is it safe to let her remain until spring, and then become fertilized, or requeen?

4. Does W. L. Porter keep his bees in Denver?

5. What success has attended bee culture along the Platte River in Colorado this year?

6. Is it possible to ship bees from South Dakota to Colorado successfully? When is the proper time to do it?

Vermillion, S. D., Nov. 7.

[1. No one can give an entirely satisfactory reason. The best one that can be given, however, and it may be the real one, was the gen-

eral dryness throughout the country along in late spring and early summer, and an insufficient snow and rainfall during the preceding late fall and winter. The result of all this was there was very little white clover grown; and what did sprout up was considerably hampered and held back by the lack of rains just at the *very time* they were needed to cause the flowers to yield honey later. This fall, fortunately, we have had a considerable amount of rain; and if we have plenty of rain next spring and summer, preceded by heavy snows during winter, we shall expect a growth of a large amount of white clover; and white clover is, after all, the main stay for honey throughout the Northern States. When this fails there is a general failure.

2. Yes; but better take off the bottom-boards entirely, if they are the removable kind; if not, cut the entrance so it will be one or two inches deep and the width of the hive. It may be impracticable to do this during winter.

3. I can not answer. We have some virgin queens, or what we suspect to be such, in our hives. They may be fertilized already this fall, or, if not, it is possible they will become fertilized next spring. I would always avoid having a virgin queen in a colony just going into winter quarters, for she is liable to become a drone-layer the following spring, or to be missing just when the colony needs her the most.

4. Mr. Porter lives in Denver, and has a series of out-apiaries anywhere from three to fifteen miles from the city.

5. I could not answer, only that I know the season in Colorado, in a general way, has been very good.

6. Yes, providing you put the bees up properly in a freight-car and go with the car and bees, so that the hives can be put to rights whenever the car is bumped. It is a long tedious trip for the man, and the expense is great. Ordinarily I advise buying bees in one's own locality rather than go to the expense of shipping.

But, say; if you are going to Colorado with the expectation of finding unoccupied territory for keeping bees you may be disappointed. Better go beforehand and look over the field and leave the bees at home; then go back for them if you find conditions favorable. Or, better still, go to Colorado for one season and work bees on shares, or hire out to some bee-keeper, so you can determine for yourself whether the climate, the elevation, and general conditions will be favorable or not. Money would not induce me to live there the year through, on account of the elevation. It seemed as if I was out of breath whenever I attempted to walk any distance; and when I reached an elevation of 9000 feet my pulse at a normal rate of 68 in Ohio jumped up to 130, and kept up that fearful rate all the time I was at that extreme height. This pulse rate was noted when I was sitting still, and had been sitting still for half an hour. There are men who could not stand such an enormous strain on the heart, and you may be one of them.—ED.]



GRADING HONEY.

"Mr. Doolittle, can you tell a beginner something about grading honey? To be sure, I have very little this year, like all the rest in Central New York, but I should like to know how I can put it in the best shape for market."

"Would Mr. Smith like to know how I first put up my honey, and how I was led to grade it as I do at the present time?"

"Yes. Any thing which will shed light on this subject will be very acceptable."

"During the most of the seventies I sold my honey in Syracuse, N. Y., selling every year to the same man at from 25 to 28 cents per pound."

"Whew! Did honey ever bring such prices as those?"

"Yes, and honey did not go below 20 cents till well into the eighties, and we graded the honey then as this man told me to do."

"How was that?"

"He instructed me to put about a like proportion of the different grades of white honey in each crate, and the same with dark, as that was the way he preferred it, he saying, 'This gives me the best results in the end.'"

"And did you follow instructions?"

"Yes. And at that time we used crates holding 100 lbs. and over, so that such grading answered better than it would had the small crates of the present been then used, holding from 20 to 25 pounds."

"What changed you from that way of grading?"

"This man died, and with his death Syracuse became a poor market for honey; so I was obliged to seek a market elsewhere. I tried peddling a little, but soon decided that peddling was not my forte, so began to ship my honey on commission, filling the cases or crates as this Syracuse man had instructed. The parties to whom I consigned the honey soon began to write me, saying that they could obtain more satisfactory prices if I would make at least three grades of my white honey, and the same for my buckwheat, or dark honey."

"Did you take the advice?"

"Yes. The next year I tried the plan with a part, and sent the rest as I had heretofore done. The result was, as I have been told, the graded brought me quite an advance over the other not so graded."

"What did it bring you?"

"As I now remember it, No. 1 sold at 22 cents per pound; No. 2 at 20 cents, white No. 3 sold at 16 cents, making an average of a little over 19 cents per pound. That which was not graded differently from my first instructions brought me only a little over 17 cents."

"To what did you attribute the reason for this difference?"

"The reason for this seems to be that two or three sections of poorer honey in a crate

has a tendency to catch the eye so that one can scarcely see the good honey at all; while if all are poor they do not expect to purchase for less than $\frac{3}{4}$ to $\frac{2}{3}$ the price of good honey."

"Do you think that covers the whole ground?"

"No. The contrast between good and poor honey, both being in the same crate, is greater than it is when in separate crates unless the two are side by side, so that one can be compared with the other."

"How do you account for this?"

"Human conception, taken in through the eye, is faulty to a certain extent, unless the things to be compared are so arranged that the eye can take such things in as a collection, at one glance. For instance, I have a grade of all No. 1 honey in my honey-house, and all No. 2. in my house a few rods distant. A purchaser comes along and stops at the house first. I show him the No. 2 honey. He calls it fine, and thinks it compares favorably with any honey he has seen. I now take him to the honey-house and show him the No. 1, and, nine chances out of ten, he will say that he sees very little difference in the two lots. I now take some No. 2 and No. 1 and put them side by side, and he has no difficulty in deciding that the No. 1 is 'very much the better.'"

"I think that is right!"

"Yes; and taking advantage of this fact, and all of the lessons of the past, I now grade my honey as follows: I pick out three sections of honey, one to represent each grade, and set them up before me as samples to compare with. Every section which comes up to the No. 1 selection is placed in crates as No. 1, the same being marked with XXX in the hand-hole of the crate. To be No. 1, or XXX honey, the comb must be smoothly and evenly capped over throughout its entire surface, with little or no discoloration of the comb near the bottom of the section. The section itself must look new and clean, while no cells of bee-bread or pollen must be seen when looking through the section toward the light."

"It seems to me that is pretty close grading. Can you find many sections like that?"

"Yes. If the honey is taken from the hives soon after it is finished, as it should be, from one-third to two thirds will grade in this No. 1, according to the season."

"What about No. 2?"

"No. 2 will compare quite favorably with No. 1 except by a side-by-side comparison. In it I put all smoothly sealed sections which are not too badly colored at the bottoms of the combs, together with such sections as show a few cells of pollen (covered with honey) when held up to the light, and those which may have only a few unsealed cells near the bottom of the section. The crates of No. 2 honey are marked with XX in the hand-holes of the same."

"Now tell me about No. 3."

"In No. 3 grade I put all sections which are not less than three fourths sealed, those that by accident or by brace-combs have their surface marred somewhat; all such as have considerable pollen in them, the same being covered with honey, and sealed over, and all

that are badly colored or soiled at the bottom. This No. 3 grade is marked with X in the hand-holes."

"Do these three grades take all of your white honey?"

"No, not all. As a rule, sections which are not at least three-fourths sealed over, and are otherwise too poor to go in these three grades, had better be extracted and the combs kept over till the next year for 'bait' combs."

"Why do you use the X's in preference to the numbers on the cases?"

"Well, I do not know that I have any very good reasons to give for doing this, only that I have been in the habit of doing so, this enabling me at a glance to sort the different grades out when loading or shipping, by simply taking the hand-holes of a pile of crates in at a glance."

"I am very much obliged to you, and I must be going now. Good morning."



LONG TONGUES OR COLOR; ARE THE TWO NECESSARILY ANTAGONISTIC?

Mr. Root:—You, as president of a great bee-keepers' association, I think, do an injustice by so sweepingly condemning *all* golden Italian bees as you did at the convention held in Chicago. You said, "Let us look more to the length of tongue than to color." Do you not think it possible to find length of tongue among the golden strains? Must we now ruthlessly massacre all the beautiful subjects in bee-life without even giving the lovely creatures a chance to run out their pretty tongues for measurement? Has it never occurred to you, Mr. President, that there may be many grades of golden stock (some worthless, I admit—but not all), and that perhaps we might combine length of tongue with beauty, gentleness, etc.? Have you the heart, Mr. President, to pinch a really beautiful young creature whose bees are golden—the brightest of golden—and to the tips, whose workers have no desire to sting, so much engaged are they in bringing sweets to the hive? Could any human being destroy such a queen? Never!

In the past few years I have had considerable experience with golden Italians. I have tested nearly all the different strains, and find not only a great diversity in their traits and markings (color or shade), but also find as wide a difference in their honey-gathering as well as many other qualities—for all the world like any other stock. Therefore, simply because a bee is golden it does not necessarily follow that she is worthless. My dear Mr. President, do not, I beg of you, wrench from us what we have gained along the line of color and markings by putting to death all bees not of a certain stripe (history repeats itself, even unto the bees), but rather encourage

careful experiment to improve further, in addition to what we have already gained in color, by giving heed to other qualities. I believe a red-clover golden Italian is possible, and I, for one, shall bend every effort to produce such a bee. Judging from my experiments the past season I shall accomplish that end, for I already have golden bees on red clover. As an aid to this end; allow me to add that advancement in quality has been with me more readily evidenced through the agency of the male than the female. By hand-picked drones from high-grade stock I expect to accomplish wonders another season. SWARTHMORE.

[It seems to me, friend S., that you put more into my language than I really put into it. Take the sentence where you quote me as saying, "Let us look more to length of tongue than to color." There is nothing in that that implies that length of tongue can not be secured in golden Italians. Put the emphasis on the word *more*, and I think you will get my meaning better. But I do say that too much attention has been given to color—so much so that other desirable qualities have been lost to view. This fad for color came very near running out every and all other efforts for the production of bees for business; but, happily, the tide is now turning in favor of bees for honey, irrespective of color. Let us bend our energies toward bees for business, and then if by chance we get the golden yellow with long tongues, and non-swarming qualities, well and good. I do not deny that there may be good workers in yellow stock; but I do say this: That some yellow stock (and we have had it from a good many breeders) has been short-lived, and crosser, than the average leather-colored stock. That has been our experience.—ED.]

WHY A COLONY WILL, SOMETIMES PERSIST IN BALLING ITS QUEENS.

I should like you to inform me why it is that a certain colony of bees in my apiary should ball the queen. In the first case they balled her without any apparent reason. As it happened, I saw the ball as it came out, and got the bees off from her. I then caged her in a wire cage I made, and kept her away from them one day, as I had no candy. I then let her in at the entrance toward night. Next day they swarmed out and went off. She was not clipped. The remaining bees reared another queen, a very large hybrid, and a prolific layer. All went well till the other day, when in going around clipping queens I came to her and had a job to find her. After opening the hive twice I found her and clipped her; but I had not got her off my fingers before the bees flew at her and balled her. I let her remain for about two minutes before I got her clear, and put her in the cage, on top of the brood-frames. This morning she was alive, and the bees around the cage seemed quiet. I then made a plug with a hole in it, and filled it with candy and put her in the center of the brood-nest. Do you think they will accept her? I forgot to mention that, at the time I clipped her, I missed the long wing

and cut only the short one. Do you think that had any thing to do with the bees balling her? The whole hive seemed mad. They were fighting like good fellows. To-day they are all quiet.

H. H. SMYTH.

Kailua N. Kona, Hawaii, Oct. 19.

[It is quite difficult to explain why a colony will sometimes persist in balling its queen. I have tussled with just such bees a good many times, and I sometimes feel like brimstoning them on the spot rather than fuss with them any longer. Those same bees will often refuse to accept an introduced queen, and then after they have accepted her (or after they have raised one for themselves) will pounce on and ball her the minute the hive is opened. They seem to be possessed of the spirit of the evil one itself.

I can explain it only in this way: Opening the hive of course causes a disturbance, and the bees do not know whom to blame but the queen, like the man who when his equilibrium has been disturbed, comes home and "jaws" his wife for something for which she is not to blame; or kicks the dog or cat on sight. I have known several colonies that would ball their queens just as soon as the hive was opened. In some cases I closed the hive and let the queen fight it out if she could. A week or so afterward, on going to the hive I found her in a little knot of bees, just as if she had been balled all that time.

Clipping a queen necessarily brings her in contact with a human being. She acquires a new odor, besides the mutilation, and this has a tendency to cause the bees to attack her when they would not molest her otherwise. In any case, when a colony balls its own queen I would close the hive immediately, and give it a smudge of tobacco smoke; but be careful not to overdo the matter. When the bees have sufficiently recovered make the necessary examination, and then do not open the hive more than is absolutely necessary.

Now, then, referring specifically to your question, you did right, perhaps, in caging the queen and then making provision for her release automatically by the bees; but if you had used the tobacco smoke as I have directed I think it would have saved you some work and quieted the bees down. Yes, I think the colony would accept the queen, but I think I would give them a smudge of tobacco smoke at the time of caging, and perhaps another smudging a few hours before the expected release of the queen.—ED.]

HONEY FOR OATMEAL AND OTHER BREAKFAST GRAIN FOODS.

Mr. Root.—While at breakfast this morning it occurred to me that the bee-keepers of this country could do a good thing for the fraternity, not as bee-keepers but as individuals, by calling the attention of the manufacturers of cereal products such as rolled oats, wheat foods, grape nuts, and the like, to the fact that these preparations can be eaten sweetened with honey instead of sugar, and taste better than sweetened with sugar, and requesting these manufacturers to state this

as a fact on their directions that appear on the packages of these materials.

Hundreds and possibly thousands of bee-keepers are using some of these preparations; and these requests, coming from a number of parties, might induce the manufacturers to do this. This certainly ought to do some good toward increasing the market for honey. I say this ought to be done by the bee-keepers as individuals and not as bee-keepers, because if this subject is broached by the bee-keepers the manufacturers of these foods will simply consider that Mr. Jones "has an ax to grind."

I inclose a copy of a letter which explains itself. If you consider the matter of sufficient importance, please bring it before the readers of your paper.

WM. HAHMAN.

Altoona, Pa., Oct. 30.

Gentlemen.—I have been using your preparation — for breakfast for some time, and like it very much. I have lately tried eating it with honey instead of sugar, and enjoy it even more. As you are doubtless aware that honey is a far more healthful food than sugar, particularly for persons subject to disorders of the kidneys, I thought you might be sufficiently interested to call attention to the fact that — is very good sweetened with a good grade of extracted honey instead of sugar on your directions for the use of this food as given out by you on your circular and on the outside of the package.

[We have been advocating this in our columns for some time, and it is our practice to use honey in place of granulated sugar or other sweets on our morning grain foods. If bee-keepers will practice what they preach, and preach what they practice, especially preach, there is not a doubt that there will be a much larger consumption of honey on the table.—ED.]

STRETCHING BEES' TONGUES BY CROSSING ITALIANS WITH APIS DORSATA; THE PROBLEM OF ELONGATING TONGUES MORE DIFFICULT THAN CHANGING THE COLOR OF THE BANDS.

You ask, page 712, "Is it more difficult to stretch bees' tongues than to change the bands?" I answer, yes, indeed, by very great odds. I have been working on this very line for 15 years; and while I can easily accomplish the one in a single season, it has taken years to reach the other; and I have bees to-day that can gather nectar from the outer edges of any red clover, but can not reach the full-sized bloom. After years of careful selection I have some clover seed that I will sow in the spring that will produce heads the nectar of the entire bloom of which my bees can reach; so you see I have been working for years for just what you have been discussing of late.

In 1896 my bees gathered me 1500 lbs. of pure red-clover honey, which I don't think another man in America can say. Of this, 800 lbs. was surplus, 700 in brood-chamber. But the quickest way to get a bee that can gather nectar from red clover is to cross our Italians with *Apis dorsata* or some large bee, which can be easily done.

D. N. RITCHEY.

Granville, O., Oct. 12.

[I agree with you that it is easier to produce yellow bands than long tongues in bees. To

get either we have to take advantage of a sporting tendency in all species toward new varieties. But granting that one is harder than the other, I think we can get both—not simultaneously, perhaps, but each separately.

About crossing *Apis dorsata* with *Apis mellifica*, I hardly think you will be able to accomplish much in that line. It is a well-known fact, I believe, among scientists, that, in crossing one species with another, we can not go any further than to make a hybrid. For instance, a horse crossed with a donkey produces a mule, or a pure hybrid, but the mule itself is sterile. Neither the male nor female has power to propagate itself, because there seems to be a provision in nature to prevent the inter-crossing of species. This would also be true of the honey-bee of this country and of the giant bees of India. The one belongs to the species *Apis mellifica*, and the other to the species *Apis dorsata*. While it might be possible to produce from the two a "pure hybrid," yet we could go no further. If I am misinformed on this point I should be glad to be corrected.

But suppose we could cross *Apis dorsata* with *Apis mellifica*, you will remember that the measurements of the lengths of the tongues of the latter are not as long in proportion to the size of their bodies as the tongues of the former, and the tongues of the giant bees are hardly any longer than the tongues of the average Italian bees.—ED.]

LONG TONGUES AND GOOD WORKERS.

Friend Ernest.—I send you by this mail some workers to have their tongues measured. Their queen is one I bought a year ago for my friend Baile. They are the best honey-gatherers he has by a long way, and probably better than any I have. It is the Moore strain.

Oberlin, O., Oct. 29. CHALON FOWLS.

[It is the old, old story. In every case where we have long-tongued bees we have good honey-gatherers, or at least I have yet to find the case of long tongues when we did not find also that the bees having them were extraordinarily good workers. The tongues of the bees sent measured $\frac{19}{100}$ of an inch.—ED.]

THAT QUEEN, ONE OF WHOSE BEES SHOWED A TONGUE-REACH OF $\frac{23}{100}$ OF AN INCH.

Mr. Root.—Your report, received a few days ago, in regard to the bees produced by the red-clover queen I got of you, is very encouraging indeed. I was surprised and highly pleased when my eye caught the $\frac{23}{100}$ as the length of the tongue of one of her bees. The fact that her bees are inclined to sport makes her of great value as a breeder; for, as you truly say, there is no reason why her queens should not sport also. J. P. MOORE.

Morgan, Ky., Oct. 30.

APPLE BLOSSOM HONEY.

Having noticed in GLEANINGS several times remarks in regard to apple blossom honey, as to quality, I will state that I extracted from 14 hives this season over 600 pounds of what my

customers called the best extracted honey they ever had. It being my first experience with the extractor I sold short, but have a little left; and if you care enough about it to mail me a couple of mailing-blocks I will fill them and remail them. J. A. CRANE.

Marion, N. Y., Nov. 2.



L. H. ROBEBY, of Worthington, W. Va., has sent us several lots of bees from his extra honey queens. The tongues aggregate a measurement of $\frac{19}{100}$ and $\frac{20}{100}$. One of the queens is a Root and the other a McIntyre, and all of them are of the leather-colored stock.

MR. OREL L. HERSHISER, 1106 D. S. Morgan Building, Buffalo, has been appointed superintendent of the New York State apiarian exhibit at the Pan-American Exposition. He has been, and is now, on the lookout for choice lots of comb and extracted honey. Thus far he has been only partially successful in finding any, and would like to hear from all York-Staters who have or may have some choice lots which would do for exhibition purposes. Each one will obtain the reward his product merits, at absolutely no expense or loss to the exhibitor, he says.

THE Ontario Bee-keepers' Association (an organization in Canada that practically corresponds to the National Bee-keepers' Association in the United States) will hold its next meeting at Niagara Falls, Dec. 4, 5, and 6. This, next to the Chicago meeting, will probably be the largest convention of bee-keepers of the year on the continent. A first-class program has been arranged, and bee-keepers of the United States are especially invited to attend. The Savery and Windsor hotels offer a rate of \$1.50 a day, and the Imperial \$1.00. I am planning to be in attendance with my stereopticon, and I learn that Mr. Hutchinson expects to be there also.

HARRY LATHROP, of Browntown, Wis., is much pleased with the prize articles on growing clover, as given in our last issue. He says the thing now is to get the agricultural papers to copy them. This is a good suggestion, and every subscriber interested in having clover grown in his vicinity should bring them before the attention of the local county papers. Do not write, but make a personal visit by calling on the editor and telling him that a digest of all three of the articles, in his columns, would help you as well as the average farmer within the range of his circulation. If you have any particular "pull" on any one of the agricultural papers, use your influence to get them to publish them entire or make a summary of the facts brought out.

LONG TONGUES AND GOOD WORKERS.

Mr. H. E. JAYNES, San Marcial, New Mexico, sends us a sample of bees that show a tongue-reach of $\frac{1.9}{100}$. He says they are good hustlers, have stored more than any other colony in the apiary, and that he has seen them leave the hive in the evening when it was getting dark, and so dark that the bees returning were hardly able to find the hive; that they continued to store surplus honey right along when all the other bees were unable to keep from starving except as they were fed. I don't care if this does give our friend Jaynes a free advertisement. I am willing to give any queen-breeder or any man who has good stock a free notice, for by so doing it will help our friends and help the fraternity at large in the securing and development, not only of long-tongued bees but good workers.

The fact begins to dawn that bees, in order to make a better showing in their hive than the bees of another, must have long tongues to reach the nectar. If this is so, then it is a physical impossibility for some bees to excel in honey-gathering.—ED.]

DEATH OF AN OLD CORRESPONDENT; AN AWFUL ACCIDENT.

We are much pained to receive the news of the death of our old friend and correspondent S. P. Culley, Higginsville, Mo., who was killed by the cars near East St. Louis, Ill. The press reports state that the car wheels ran right over his body, severing the head from the trunk. It seems that S. P. Culley & Brother, extensive bee-keepers at Higginsville, Mo., had recently made a contract to export large quantities of bees to Havana, Cuba; and the senior partner, our correspondent, was *en route* with a carload at the time of the accident. He was asleep in the caboose, when, having reached a junction, the conductor awoke him and then proceeded to clamber on top of the car to give the necessary signals to the train men. Mr. Culley, in the meantime, half dazed, dreamily staggered toward the front platform, and walked off and fell between the cars, with the fearful result as noted.

He wrote for the *Progressive Bee-keeper* and for this journal. He was a clear, forcible writer, and was always intensely practical. I remember the time I first read one of his communications in manuscript. As I finished reading it I said to myself, "There is a man who has evidently had a large experience," and as I glanced at the end to see who the writer was I could not remember that I had seen his name before; but from that time on I always welcomed his communications. He wrote so recently as Oct. 15, page 799; and this, or at least a part of it, was republished in the last issue of the *American Bee Journal*. He was a comparatively young man—only 40, just in his prime, and I am sure the readers of all the bee-periodicals will miss his familiar writings.

THE AMERICAN BEE JOURNAL.

Forty years ago next January, Vol. I. No. 1 of the *American Bee Journal* made its appear-

ance under the management of our good friend Samuel Wagner. It continued one year; but there did not seem to be bee-keepers enough in our land to keep even one bee-journal running. If I am correct, the breaking-out of the war had something to do with letting it drop for a time. When I "went crazy," however, on the honey-bee, because of the loss of that truant swarm I became so much interested in, I began rubbing my eyes and hunting up the bee-literature of the world. As soon as I found a bee-journal had been published I had every back number, and read them over and over day and night almost. How familiar those pages in regard to the Dzierzon theory look even now! and those strange stories of the wonderful natural history of the honey-bee awaken a thousand pleasant recollections even now as I glance over it. I enjoy even yet exploring new fields of science; but I am afraid the world does not contain any new field that I shall enjoy as much as my explorations in that observatory hive that stood in the window of my home. Well, when I became acquainted with Langstroth and Wagner there was no peace till they promised to get the *American Bee Journal* going again, for Mr. Langstroth seconded my exhortations. Well, it is *still* going; and when I glanced over the issue for Nov. 8 I really felt happy to see such a bright, wideawake, live publication, filled not only with valuable hints but bright, hopeful, sharp witticisms. The thing that troubles me most just now is the fear that our good friend York does not get pay enough for sending such a beautiful journal 52 times for the small sum of \$1.00—not quite two cents for each issue. (At one time the *American Bee Journal* was \$2.00 for only 12 issues.) Why, Dadant's account of his trip through Switzerland alone is worth almost the subscription price for an entire year, to say nothing of the report of the Chicago convention. And it is not altogether bees. Friend York, as well as myself, got hold of that little item about having some land of your own. And the *American Bee Journal* is an excellent family paper. It is up to the times in standing out strong and fearlessly for good morals, temperance, and purity and honesty. Now, if anybody sees this who has not subscribed for the "Old Reliable," let him make haste to give friend York a little encouragement in the shape of a subscription. This is from your old friend A. I. R.

"N. E. FRANCE LOOKING FOR FOUL BROOD."

THROUGH the courtesy of Mr. Leon Pierce, of Kilbourne City, Wis., I have the pleasure of introducing a prominent Wisconsin bee-keeper behind his back, or in the new *role* of picture-taking. It seems that both Mr. Pierce and Mr. France had taken their cameras to take a few snap shots at the Wisconsin Delles, or Dalles, celebrated the world over for their beauty. Mr. France was posing his instrument, totally absorbed in the beauties shown on the ground glass, and oblivious of what was or might be going on all round about him, when his friend "stole a march" on him by taking a snap shot. This picture he subse-


quently forwarded on to us, labeled, "N. E. France looking for foul brood." I have always known that the Wisconsin inspector was unusually vigilant; that he never allowed a case of diseased brood to escape his attention; but I did not suppose he was so anxious to find foul brood that he would look for it among the bare rocks.

Joking aside, Mr. France, in his tours over the State, is in the habit of taking along his camera, and he has now a large and interesting collection of pictures which he has taken among bee-keepers—pictures showing foul brood in its various stages; pictures of diseased and infected hives that he has caused to be burned; pictures of bee-keepers and bee-yards, just as he has found them.

So far as I have been able to learn, Mr. France, with all the vested authority of the State which he has back of him, makes no enemies, but sees that the provisions of the law are rigidly enforced. He has not only performed a signal service for the State, and is doing so every summer, but in a larger way he is doing a service for the whole United States in that he is stamping out and corralling foul brood in a limit so small that it is doing practically no harm. In a like manner Mr. McEvoy, in Canada, is rendering a similar service, and, as I showed in our last issue, we have four energetic inspectors who are doing a splendid work throughout New York; but I hope none of them will try to find either black or foul brood among the bare rocks.

COMB HONEY—HOW TO LOAD IT ON A WAGON.

We have for years printed what we called our "caution card," which reads as follows:

FRAGILE.	
COMB HONEY.	
Handle With Extra Care.	
Do not Move it on Hand Trucks.	
Do not Drop it.	
Do not Dump it.	
Set it Down Easy.	
Haul it only on Vehicles with Springs.	
	Load with the finger point ng to the Bow, Locomotive, or horse.

The card is intended to be nailed on the case so that the direction indicated by the finger shall be parallel with the combs. Referring to this, one of our subscribers, while admitting that this is correct so far as loading in railway cars is concerned, thinks they, for vehicles commonly used in the public highways, should read, "Load with the finger pointing toward the side of the dray or wagon," the reason being that the wheels on one side are liable to drop into a rut, giving a sudden jar to the combs, and therefore the edges of said combs should point *toward the wheels*. Another says that those same edges should point toward the horses; for when a wagon goes over a sluiceway, or bumps against a bridge that may be four or five inches above the general level of the road, then the jar on the combs, if the edges point toward the wheels, will have a tendency to break the fastenings. This is the position we have taken. The question is, are the *side* dumps more severe

than the *forward* bumps over the bridges? We should like to hear briefly from a number of our readers on this point. Of course if a *spring* wagon is used it does not make very much difference how the honey is loaded.

SOME OF THE EVIDENCE (?) THAT WAS INTRODUCED IN THE PEACH BEE CASE; OR, UTTER V. UTTER.

THERE are no new developments to report in regard to this case, except that I have come in possession of some of the evidence that was presented when the case was tried before the justice. I am informed that the bee-keeper who testified that the bees could bore holes through wood, and work wax as hard as stone, is a man who can neither read nor write; and when he was referred to an article in GLEANINGS, showing that honey-bees can not puncture sound fruit, he is reported to have said, "Pshaw! I do not care any thing for them books. I know more about bees than they do." He has only ten or twelve stands of bees, and about twelve acres of land. It seems he set out a peach-orchard, and when asked by the lawyer what he was going to do with his bees when his peaches came in bearing, he replied, "Keep them until some one sues me."

Another witness for the prosecution testified on direct examination that he saw a bee alight on a peach, and, calling his hired man, they watched the bee, and the result was that the bee punctured the peach, obtained some juice, and flew away; that the peach showed a small puncture. On a cross-examination the lawyer asked, "Did you examine that peach *before* the bee alighted on it?" He replied that he did not; that there *might* have been a hole in it before he saw a bee on it.

This same witness also testified on cross-examination that the twigs or branches produced by the plaintiff were diseased by being affected with the yellows.

The plaintiff's sons, on the stand, said that they had seen bees attack peaches; that the bees would *stand on their hind legs*,* and probe or puncture a peach, and then fly away; that they had witnessed this operation through a magnifying-glass.

I am informed that all who heard the evidence say there was no proof that the marauding bees (although they admitted that they were on the plaintiff's trees) belonged to the defendant. But on this point the plaintiff is reported to have said that when they, the bees, got their "belly full" they would go toward Utter's apiary.

It will be remembered that the plaintiff avers that the defendant's bees stung the trees; but it appears from further investigation that the plaintiff's trees were badly affected by the yellows, for he (the plaintiff) told two witnesses that there were 49 trees in his orchard that he was going to pull out on account of disease.

In spite of such admission and that there was plenty of evidence produced from bee-keepers, to the effect that the bees could not

* Italics mine.

puncture fruit, and that the witnesses for the plaintiff appeared to be prejudiced, and in one instance, at least, incompetent, the justice rendered a verdict of \$25 for the plaintiff.

It seems no evidence was taken down in shorthand, so that the case, when it is tried before the higher court, will have to be tried *de novo*.

It does not seem possible that the decision of the lower court will be sustained, but still we can not afford to take any chance; and the bee-keepers of the land, through the National Bee-keepers' Association, should contribute liberally toward the defense of this case by sending in their dollars as membership fee to General Manager Eugene Secor, Forest City, Ia. If you are interested in this case, and desire to see justice done, and your own interests preserved, send in a dollar at once. You can not do it any too soon. Remember that an adverse decision in New York will affect every bee-keeper in every other State in the Union; and we must not let prejudice and ignorance blast or blight out the rights of the honest bee-keeper.

I have since learned that the vicinity where the case will be tried is a great fruit-growing region, and, naturally enough, there will be plenty of fruit-growers who will be willing to render testimony against the bees; hence it becomes exceedingly necessary that we on our part show that, while bees do attack broken, punctured, or unsound fruit, they never puncture a sound peach, never sting trees, and that they are never the original perpetrators of the mischief. In this connection I am pleased to note a valuable article in defense of the bees, by Prof. M. V. Slingerland, of the Agricultural Department, of Aurora, Ill., published in the *Rural New-Yorker* for Nov. 10. Prof. S. completely exonerates the bees, and his testimony means much.

SINGLE V. DOUBLE TIER 24-LB. SHIPPING-CASES, AND THE PRACTICE OF THE COLORADO BEE-KEEPERS; TABLES TURNING.

YEARS ago the first comb-honey shipping-cases were double-tier, and held 48 lbs., but these were too heavy. Later on, similar cases were made holding 24 lbs.; and then finally we had 12 lb. one-story cases. These were so neat, handy, and pretty that we next were greeted with the appearance of 24-lb. one-tier cases. As soon as these got fairly started on the market, bee-keepers and commission men alike specified that honey should be put up in such cases. The reason assigned was made that, if honey was leaking or broken in the upper set of sections, it would run down and smear the sections below. The trade gradually but surely turned to low-down cases, the largest being 24 lbs., and the smallest 12 lb. But the Colorado bee-keepers, for some reason, went back to the old 24-lb. double-tier cases; but instead of using one large glass, two were used, with a wooden rail between.

Dr. Miller, during all the time we and all the rest were advocating a single-tier case, maintained that he preferred the 24-lb. two-story affair. We told him that he was "be-

hind the times;" but he kept on using the same old thing. Our people—that is, those in the Root Co., like all the rest of the up-to-daters—who buy and handle honey were strong advocates of the flat case—either 12 or 24 lb.; but after buying and selling several carloads of Colorado honey put up in double-tier 24 lb. cases, they found that their prejudice was being removed; and now our honey-man, Mr Boyden, as well as the freight-handlers, say they rather prefer the 24-lb. double-tier to the same capacity flat case. Perhaps it is not possible to give fully the reason; but the same weight approaching the cubical form is more easily lifted and handled than when spread out in a flat package. Handle a carload of it and be convinced. And there is no denying the fact that it has a more symmetrical appearance for it is more in conformity with other packages holding other staple goods.

In the modern use of a double-tier case it is the practice now to use drip-papers under the upper set of sections as well as under the lower one, so that the old objection of honey leaking from the upper to the lower set has been removed.

Our Mr. Boyden was at first afraid that the eastern trade would not take kindly to the tall case with its two rows of sections, and accordingly, in quoting Colorado comb honey, referred to it as being put up in 24-lb. cases without specifying the number of tiers. But out of several cars of such honey sold, there was not a single objection raised.

DR. MILLER'S LONG-TONGUED BEES.

It will be remembered that Dr. Miller had a couple of queens whose bees outstripped all others in their records in getting honey. Believing that there is a strong connection between long tongues and good working bees, and having seen how close this connection was in many specimens examined for tonguelengths, I asked him to send me some bees from two of his best queens. The scale measurement shows for one queen $\frac{1}{100}$, and the other $\frac{1}{100}$. Both of these measurements are considerably above the average.

When we began this measurement business (for we are measuring the tongues of bees almost every day from almost all portions of the United States) I supposed that long tongues were necessary only for red clover; but it is now apparent that long tongues have an advantage with almost any flora; and I am coming to believe that when bees are good workers it is not because they are not inherently lazy, but because they are physically capable of doing more than the other bees in the apiary; that is to say, I believe all bees would work if they could get the honey. Many bees would starve, and it is these bees that show a short tongue. But the bees that gather honey when others are starving, if measurements and reports mean any thing, are those that have tongues longer than the average.

Further measurements covering next year may disprove these guesses; but so far the straws all point one way; viz., long tongues, good workers; short tongues, poor workers.



My word shall not return unto me void ; but it shall accomplish that which I please, and it shall prosper in the thing whereto I sent it.—ISA. 55:11.

There are many Bible promises like the text above, to the effect that righteousness will ultimately triumph over iniquity. In fact, we are told that the meek shall inherit the earth ; but when we see how Satan's work is marching on side with Christian work, many times overlapping and overtopping it, perhaps, one at times feels that he has reason for feeling discouraged. And there is a class of people—yes, some *Christian* people—who almost sneer and jeer when one insists that goodness is going to triumph over badness. When we take a look at our temperance work, and see how we are thwarted and laughed to scorn by the great trusts and liquor interests, it is not strange that we at times become disheartened. But we must not forget to look on the bright side. Agencies are at work, many times when we least suspect it, coming from directions we had not thought of. In fact, one of my happy surprises came right along in this line. On the recent excursion that Mrs. Root and I took together we were obliged to wait for a train at a railroad-crossing ; or, to tell the truth, several roads crossed and recrossed there, making a labyrinth of tracks. I asked permission to go up into the tower overlooking all these intricate switches and side-tracks—the building that we often see in such places, with windows all round. I asked permission of the operator to look over the complicated machinery for changing the switches. He very courteously invited us inside, showed us his maps and rules, and explained the use of the multitude of levers ; and when two trains came in sight almost at once he asked us to witness the manipulations that were necessary to permit them to pass. It was really bewildering, and I could not but look on that operator with wonder and respect ; yes, I looked at him almost with reverence to think that one human being could handle the lives of trainloads of people, almost without the waste of a second of time, and not make a mistake once in ten thousand times. I do not know what pay such men get ; but I do know that all railroad companies pick out the brightest, steadiest, and soberest men for this exceedingly important position. I suggested the idea of the terrible havoc a drunken man or even a *drinking* man might make in such a place. The gentleman assured me that such precautions were taken just *now* that there was very little liability or even possibility that such a man should ever handle the apparatus he had under his control. Afterward an old friend of mine, and a reliable man, informed us something as follows :

“ Mr. Root, perhaps you have already been told that the Big Four Railroad Co. will not keep a man who drinks. You may have also heard that if one of its employees is seen go-

ing into or out of saloons he must give a satisfactory explanation. Their excuse for being so exceedingly strict is the loss of life and property that has resulted from having a man drunk when he needs the very best sense and intelligence that he possesses. Well, just lately they have decided their employees must not board in any boarding-house, hotel, or other place where a bar is kept on the premises. Inasmuch as it is so exceedingly common to have a bar or saloon in the basement, or somewhere in close combination with most of our hotels, this ruling is going to be a little hard on places that board railroad men. But I for one am glad of it. I think it is just the thing they ought to do.”

You may be sure I said, “ May God be praised that the Big Four Railway Co. has boldly stood forth in the present crisis, and backed up the work the Anti-saloon League in our various States is trying to do. The saloon *must* go.”

I expect to see railway companies, one after another, adopt this rule, or a similar one, for they are all moving forward in this very matter. Many times when we are planning for our bee-keepers' conventions, especially in our large cities, we are gravely informed there is not a hotel of any kind that does not have a bar that one can find if he really wishes to. May God forbid that this state of affairs should long continue.

After the above was in print I noticed an article in the *Sunday School Times* entitled “ An Epoch-making Convention of Railroad Men,” from which I make the following extract :

“ Is Saul also among the prophets?” Have the railroads become societies for the propagation of the gospel? The above question may well be asked in view of the great railroad conference of the Young Men's Christian Associations held in Philadelphia, October 11 to 14. More than thirteen hundred railroad delegates came from all parts of the United States and Canada, and spent four days in convention, not for the purpose of discussing wages or methods of railroad operation, but to confer together how best they might raise the standard of personal life and character, and extend the kingdom of the Lord Jesus Christ among railroad men.

Officers and men met here on common ground. Upon no other could they do it. Friday evening there were present such men as the presidents of the Pennsylvania, Chesapeake & Ohio, Long Island, Cornwall & Lebanon ; vice-presidents of the Pennsylvania, Reading, Lehigh Valley ; and general managers, superintendents, and other officials of various railroads. Letters of sympathy were read from presidents and leading officials of a large number of the railroad companies of the United States and Canada, who sent their regrets that they could not come. Such ladies as Mrs. Cassatt, Mrs. Russell Sage, Miss Helen Gould, and others, received, and shook the hands of all the delegates, and attended many sessions of the conference. Christianity found here its finest social expression.

Perhaps one of the most notable features was the recognition of the greatness and value of this movement by foreign governments. Russia was represented by two railway officials, especially commissioned by the Tsar to attend, and to make a study of this work. They were Messrs. Reitlinger of St. Petersburg, and Shidlovski of Moscow. The German Government was represented by Mr. Glasenap, chief engineer of the German railroads, who is an attaché of the German Legation at Washington.

On Sunday two meetings were held at the railroad building, and delegates conducted men's meetings at the various branches in the city. It was a day of remarkable manifestations. Fifteen hundred railroad men assembled at three o'clock at the Young Men's Christian Association rooms at Forty-first Street and

Westminster Avenue, and were addressed by Mr. Fred B. Smith, not in a sensational way, but with plainness and directness. His subject was a difficult one, the text being, "One thing thou lackest," and his effort was to show that mere morality was not sufficient. A hundred and thirty railroad men came forward, and for the first time made public confession of faith in the Lord Jesus Christ. At the farewell meeting at the same place probably fifty men and women took the same step. At the Association headquarters, forty-four young men did the same, and at other points there were marked results.

This conference has been a great study in the relations of capital and labor, and its lessons may be quickly learned, but, we fear, will be more slowly put in practice.

Well, it is not alone in the line of temperance work where we may see, if we watch closely, that the teachings of Christ Jesus are being recognized and endorsed. Bright business men, whether they are professing Christians or not, are getting hold of Christ's teachings. Best of all, they are beginning to recognize that the Savior's precepts, even though those precepts go against the grain of the natural man, are, after all, sound reason and plain common sense. Let me illustrate:

You know how often I visit bee-keepers in their homes, and I thank God for the privilege. We do not always agree in theology, and sometimes our convictions are widely apart; but because of a love for all rural industries we often become exceedingly well acquainted, and in the pleasantest way imaginable talk over our peculiar views.

I was once stopping with a bee-keeper over Sunday. Although he was an energetic worker, and a well-posted and successful man in rural industries, he did not particularly admire the type of Christianity that he found round about his home. I am afraid it was not altogether the faults of church-members. He had got into the way that so many of us have of noticing (and I fear magnifying) the faults of his neighbors, or such of them as made some sort of profession of religion. I usually carry a Bible with me, but on this particular occasion it was in my valise at the hotel. I was to speak in the church near by that evening, and I had selected some texts, but I was not sure I had quoted them correctly. I did not really like to ask for a Bible, but I thought I could perhaps find one by looking among the books, without troubling any one. Finally my friend noticed I was searching for something, and asked what I wanted. I told him I was looking for a Bible. I noticed a comical look on his face as he called out to his wife in the next room:

"Say, Mollie, what did you do with the Bible when you had it the other day? Mr. Root wants it."

The reply came from the adjoining room:

"Mr. Root, he is ashamed to tell you the truth, and, like most of the men from Adam's time down to the present day, he thinks he will push the responsibility off from his own shoulders to those of his wife.* The plain square truth is, there is not a Bible in our

house anywhere—at least, not to my knowledge. If *he* is afraid to tell you, *I* am not."

Of course, the above was all pleasantry, and one of the little girls brought me a Testament as soon as she heard what was going on, and that contained the texts I wanted. My friend then began defending himself by way of pleasantry, something in this way:

"Mr. Root, I do not quite agree with you and with what the Bible says in many things. For instance, if a man serves you a mean dirty trick, you and the Bible teach that we should take no notice of it, and do him a kindness in return. Now, I think it is a better way to let such a man know that you have found him out, and just what you think of him; for by your plan you are just encouraging him in going on in his meanness."

His wife, however, overheard what was going on, and came to the door and put in a remonstrance something as follows:

"Now, John, you do not believe any such thing, and you do not practice it either. While you and Mr. Root are having so many talks, perhaps you had better tell him that story about the raspberries last summer."

John hung down his head and laughed. But his wife continued:

"Well, if *you* will not tell it, *I* will."

Then she commenced:

"We had a very nice patch of red raspberries over toward the woods; but just as they were getting ripe, and while they commanded a big price, we found somebody was picking them. The matter kept on until John declared he would put a stop to it, even if he had to watch for the pilferers; and he declared he would prosecute them, when he found them, to the fullest extent of the law. Now, John, you tell the rest of it."

John reluctantly, with some promptings from his wife, continued the story, which was about as follows:

One Sunday afternoon he was over by the woods, and accidentally spied two of his neighbors with tin pails going over toward the raspberry-patch. They looked over toward his house anxiously, stooped down behind the bushes until they reached a spot where they could not be seen from the house, even if somebody should be outdoors, and began filling their pails. Before they had reached the coveted position, however, John dropped down in the wheat where he was standing, out of sight, and there were his two neighbors almost within an arm's length, busily appropriating his berries. John had time to meditate. The more he thought about having a row and stirring up the neighborhood with bad feeling over a few raspberries, the more he felt as if it was small business all round for men who could count their acres by the hundred. So he got up naturally as if he had just come on the scene, spoke pleasantly to his neighbors, and told them to go right on and help themselves, etc.

At this juncture of John's narration his wife put in:

"Now, be fair about it and tell Mr. Root that you also picked berries, and helped them fill up their pails."

* Perhaps I had better mention here, before I forget it, that when I was bidding them good-by all round, at the close of my visit, the good wife said something like this: "Mr. Root, I want you to be sure to come again, and come as soon as you can conveniently; and on your next visit you may be *sure* there will be a Bible in our home."

John hung his head rather sheepishly, and admitted that he did help them fill their pails. Then we had a good laugh all round. This man had been talking skepticism, had been criticising his neighbors who made a profession, and had just said he did not believe in Bible teachings, especially that part which says, "Therefore, if thine enemy hunger, feed him; if he thirst, give him drink; for in so doing thou shalt heap coals of fire on his head. Be not overcome of evil, but overcome evil with good."

At this juncture I interposed :

"Why, old friend, you not only put in *practice* Bible teachings, but when you helped them fill their pails with berries you did it 'with a vengeance.' I fear there are not many *professing Christians* who read their Bible, and put its precepts right into practical everyday use as you have done. You conquered them by heaping coals of fire on their heads. Now let me ask, did these men ever pick any more of your berries?"

"I am quite sure they never did."

"Your relations with them from that time to this have been pleasant and friendly?"

"Oh, yes! of course. A man had better lose a good many berries before he has a row with his neighbors."*

I might say in defense of these neighbors that their apology to John was, they went out after wild berries and did not find any; and on the way back his own looked so very inviting they thought they would take a few rather than go home with empty pails, just as you and I would help ourselves to apples or peaches where we found a great plenty of them in going crosslots or something of the sort.

If this little story could be read and heeded in thousands of homes and among thousands of neighbors, how much good it might do! There is more or less pilfering going on almost everywhere. It often commences by taking little liberties; and as the Bible admonishes us to be careful of even the appearance of evil, I do not know but it is well, in view of the example we may set before others, to be exceedingly careful about any sort of trespassing.

When Mrs. Root and I were visiting that "farm in the woods" it rained so we could not get around as we had planned. There were some very fine potatoes just over our line, but the man who owned them lived a good way off. I could not well hunt him up and get his permission to take part of a hill for dinner. So we built a fire under a tree with heavy foliage that shed the rain pretty well, and roasted our potatoes in the coals. They were what I called Empire State, and they were very large and fine. We roasted them until the outside was burned and black. Then we split them in two lengthwise, and by squeezing the blackened sides with our fingers the contents would come out almost as fine and dry as flour. With some salt and bread and butter we had brought along we had an excellent meal. But I have felt a longing ever since to see the man

who owned the potatoes, and tell him how we enjoyed them, and thank him for them, and ask him to excuse the liberties we took under the circumstances.

This matter of hating game on the farms or premises of our neighbors is now calling forth a deal of discussion. Ernest and Huber are both skillful marksmen; but I have urged them again and again not to go on farmers' premises without having full consent and permission. When folks lived in the woods a century ago it was not so important; but now when the land is almost all under cultivation, and where we have quite often specimens of high-pressure gardening, I do think we should be as careful about trespassing on our neighbors' land as we would about going to the stores and groceries and helping ourselves. By the way, some pretty good people *have* a fashion of helping themselves to fruit without so much as a "thank you," where fruit is offered for sale. It is all wrong. It is one of the first steps toward downright crime. If we expect the promise in our opening text, of that good time coming, we should all be exceedingly careful about giving any sort of ground for uncharitableness and unkind feeling among the people round about us where God has placed us. After the words of my text in the 55th of Isaiah, there are two more verses containing wonderful promises, and I think they will be a fit closing for my talk today. The promises are to those who heed God's words, who try to love their enemies, and to do good to those who hate them. I believe in these promises, for I have had glimpses of their fulfillment in my own life during the past few weeks.

For ye shall go out with joy, and be led forth with peace; the mountains and the hills shall break forth before you into singing, and all the trees of the field shall clap their hands.

Instead of the thorn shall come up the fir tree, and instead of the briar shall come up the myrtle tree; and it shall be to the Lord for a name, for an everlasting sign that shall not be cut off.



OUR MICHIGAN TRIP.

When Mrs. Root and I arrived at Traverse City we procured a horse and buggy and started along the shore of Traverse Bay to our farm in the woods. As our land does not run clear down to the water we were obliged to build on quite a little elevation; and I rather favored a home on the hills—at least on the foot-hills. Mrs. Root is not sure, however, that she would like to be very much higher than the water or the main road, therefore we made our first stop at the home of Mr. Cole, mentioned on page 782, Oct. 1. Mr. and Mrs. Cole have their home right adjoining a peach-orchard away up on the summit of one of the hills. We tied our horse by the roadside, and walked up-hill for exercise; and it was pretty severe exercise, I tell you. But

*I fear I have not given the above conversation exactly as it occurred, but it was substantially as I have stated it.

we were amply repaid by a glimpse of the beautiful grounds on the summit. First there was a very pretty house and dooryard, and a beautiful view of the bay with its shores and islands on the opposite sides, and also a glimpse of Traverse City, three or four miles away. Just a little back of the house was a five-acre orchard, mostly peach-trees. I told you, on the page I referred to, that friend Cole had already sold \$500 worth of peaches. Well, since then, to his surprise, he has sold almost another \$500 worth, and yet there are only five acres of land, and this land contains a great many kinds of trees besides peach. We found beautiful luscious peaches, not only all over the ground, but quite a few still hanging on the trees. After we had eaten as many as we cared for, and discussed peach-growing on the Traverse hills, Mrs. Cole invited us to see *her* speculation. On the south side of the peach-orchard was a row of chestnut-trees, and the nuts were just ready to break out of the burrs. Quite a lot of them were scattered about on the ground. Dear reader, did you ever pick up chestnuts when a child? and do you think you will ever be too old to feel like shouting for joy when you see the bright brown nuts scattered about among the fallen leaves? Mrs. Cole says she gets \$5.00 a bushel for the nuts, and the trees are just beginning to bear quite profusely. She told me how many years ago they were planted, but I have forgotten. She has only the native American chestnuts. She has not yet tested the large new kinds; but she has proved beyond question that the top of the hills in the Traverse country is just the place for growing chestnuts as well as peaches. Just a little below the edge of the hill is a spring, and a little cheap hydraulic ram sends soft spring water into the house and barn, and wherever wanted for the stock. The apparatus has been running for 14 years; and this summer Mr. Cole thought the pipe must be getting old, and prepared to put in some new ones; but when he pulled out the old ones he found them just as clean and perfect, apparently, as when he put them in, and so he did not make the exchange.

Now, this is a valuable point for those living in the Traverse region, at least. The pipe was black iron. The makers of these rams say this is much more durable than galvanized iron that is so often put in with a mistaken notion. Much of our spring water will dissolve the zinc on the iron, and produce an insoluble precipitate that incrusts the pipes, while common black iron will remain perfectly clean. At the foot of the hill is a watering-trough made of cast iron, and of sufficient elevation so any horse can drink without being unchecked. I am glad to know these watering-troughs fed by springs are a common feature near Traverse City. These running springs are a perpetual temperance sermon; and I do not know but it is another sermon also for the Humane Society, letting the horses have drink with so little trouble that they are not likely to suffer from thirst. May God bless the people who are providing these drinking-fountains.

A little further on we took a crooked cross-road that ran up between the hills toward friend Hilbert's. In California we would say it was a road running up the canyon. We found the potato-growers busy harvesting their crop. Men, woman, and children were hard at work pulling the tubers out of the beautiful soft mellow soil, putting them in heaps and covering them with straw, and then with dirt. They are kept in this way until they have time to draw them to market or until it seems to be a good time to sell. If the grower decides to keep them till spring he only needs to put on more dirt and more straw. There was a good deal of merriment when I was able to demonstrate to the Hilbert family that I had actually "captured" Mrs. Root and got her up in the Traverse region; and I hurried back with the horse and came up again on my wheel.

Mrs. Root returned home a week sooner than I did. I wanted to stay and construct a bicycle-path from the top of the hill, where our house is to be built, down to the valley or bottom of the ravine. I first selected the lowest point between the hills for a passageway, then made my grades along the steep hillsides around through one ravine and out of another until I reached the foot, making a regular incline with no grade too steep to ride up or down. The bushes and small trees were so thick, as I have explained before, that one could hardly get through at all. Mrs. Root did succeed in getting a glimpse, over the fallen trees and bushes, of the spot where our house is to be located, but that was about all.

Well, after she had started home alone I borrowed of a neighbor an ax, a hoe, and a mattock. I brought along with me some strong line, a spirit-level, and a compass, and then I commenced work alone in the woods. As I was unused to such work I was obliged to sit down every little while on a log, and rest. With the help of a neighbor's thirteen-year-old boy, and a crosscut saw, we got out of the way part of the logs that lay across the path.* But we were next confronted by an old hemlock log three or four feet in diameter. Its decayed sides, while the middle was almost solid, together with its great size, made it too big a task for both myself and my young friend Orrville. Just before dinner I managed to get an expert wood-chopper to come and help me three or four hours. I thought it was about half a day's job to cut through that hemlock log; but he did it in little more than half an hour. In about three hours he had

* At one point my bicycle-path had to go down pretty well into a ravine and then up on the opposite side, in order to make a short cut. This ravine was full of rotten logs, leaves, and accumulations of vegetable matter that have piled up there for ages. Well, out of the rotten wood and debris were some of the rankest and most luxuriant raspberry-bushes I ever saw; and while we were running a crosscut saw Orrville held up some clusters of ripe raspberries, about as tempting as any thing I ever saw in my life, and we actually had quite a feast on the most luscious ripe raspberries I ever tasted, during the last week in October. The variety is a very soft red raspberry that would not answer well for shipping, but can hardly be excelled for eating out of the hand right from the bushes. I do not know whether this is a regular thing—raspberries so late in this region—or whether it was on account of the late warm fall weather.

got about every log out of my way by the use of his ax alone. I just began to understand that it was a trade by itself to use an ax effectively. I watched that man while he stripped himself of all useless clothing, and then I noticed, too, how he made every stroke of his sharp ax count. His engagement would not permit him to stay for more than about three hours; and by the way he worked I thought a dollar would be cheap enough for his services; but he was satisfied with just half that amount.

Well, the next morning I borrowed a double-bitted ax. Orrville helped me grind it; and as it was not an easy matter to find help, because everybody was digging potatoes, I went at it alone. Now, dear readers, I am hitting on something that well deserves a place in our department of Health Notes, but I think we will let it run right along here. When I commenced chopping I had to stop about every half-hour. I removed my coat and vest, took off my collar, hung my cap on a limb, and did the best I knew how to learn to chop. When I found my resting-spells began to be shorter, and my chopping-spells longer, I felt proud and happy. An hour or two ago Blue Eyes brought her blue-eyed boy over to our house and exhibited him to his admiring grandmother and grandfather. He is just one year old to-day. He has found out that he can walk, at least a little, and it is the most interesting amusement he probably ever struck on before in his short life. He keeps plunging ahead, laughing at his falls and mishaps, and crowing over his victories; and when he gets clear tired out then he takes a big sleep. I happened to blunder into the darkened room, and the picture of his little self sprawled out on the bed while he drew in the long breaths of infant slumber made me think of myself when I was learning to chop on that farm in the woods. I, too, required a good nap a little before dinnertime. Such violent exercise demanded, of course, a large amount of nourishing food. Then I began making experiments to see what would help me to *hold out* best. Dear reader, what food do you suppose braced me up *best* for putting in big licks with that ax and grubbing hoe? A good-sized bowl of scalded milk, together with nice bread and butter was the diet ahead of all else. During the second day I rested only once or twice in the forenoon, and finally put in a whole afternoon without once stopping, hardly, to take breath. I worked so late into the darkness of night that Mrs. Heinforth, at whose house I boarded, began to feel uneasy, and thought of sending the children up into the woods after me. One-year-old Wynne is not prouder of the progress he makes every day in learning to walk than I was in having got up to the point, in one short week, where I could swing an ax all day, and rejoice in my strength. Bicycle-riding is good, but it does not exercise the *whole* body as does chopping; neither does it *always* earn you bread and butter.

After I had satisfied myself that I was *not* getting used up and not getting so sore next day I could not move, I thought I would try,

just for the fun of it, seeing just how far this new reinforcement of muscle would help me to take a long bicycle ride. So I stopped long enough to ride 50 miles during one of the short days in the last of October, and again I had one of my happy surprises. I was not used up, I was not much tired, and I was not sore. I just felt tough and hearty. This experience is worth to me more than I can estimate. It is a most precious answer to my prayer so often breathed during the years past, that God would guide me in directing my fellow-men how to recover from sickness and gain health. I craved for such advice as the great Father above could consistently give his children.

Now, I have not learned all the secrets, by any means, for getting rid of disease and securing life and happiness; but I have certainly struck on one great secret. This Grand Traverse region may be a very healthy locality—no doubt it is. Dr. Munson, who is at the head of the great asylum in the suburbs of Traverse City, told me he had watched the matter for many years, and he had never yet been able to find a single case of *malarial fever* that originated in the Traverse region. There is not and never has been any chills and ague. He said he had known a great many people who came to the locality, subject to malarial attacks; but so far as he could learn they all recovered sooner or later. I talked with other physicians in regard to the matter, and there seems to be no malaria in this region.

Another important requisite in the matter of health is, that my work was something that greatly *interested* me. I felt as if I wanted to chop out that winding wheel-path through those ravines and around the hills more than I wanted to do any thing else in the world. My *heart* was in it. While at work I remembered the injunction to fill the lungs with air; and standing in the breeze that came over those hills I drew in the perfumed air from the evergreen and other trees, again and again, for I felt myself a bigger man than I ever had been before. Now, please bear in mind, dear friends, that this experience came to a man almost 61 years old. We are not surprised that the year-old boy crowed with delight when he found he could "navigate" from one chair to another on the little feet that God gave him; well, I was a good deal pleased and almost crowing *too*, with delight to find I could learn new tricks of strength and endurance when over 60 years old, and on a diet principally of good bread and milk, the two great staples, the most obvious and natural food for mankind.

Now I want to tell you about that fifty-mile wheelride. I had often stopped during my work to look across the bay at the opposite shores, and especially to look with some curiosity on a narrow tongue of land that shot out into the sea away over in the northeast horizon. I took my wheel and skirted the shore. The first half-day I went clear around and stood on the tongue of land called Traverse Point Resort. As I looked back from a little eminence and viewed the hazy path, al-

most in the horizon, that I had made since I started, it seemed almost incredible, and I thanked God again for the invention of the wheel. I passed the night at Old Mission in Grand Traverse Co. Here are some more beautiful resorts; in fact, the summer cottages made a beautiful little town, but it was a dead town at the time of my visit, for the resorters had all gone away to stay till another season. At Old Mission I asked a man what he would charge to take me over to Elk Rapids with his gasoline-launch. He said if there was a load he would take us for 40 cts. apiece; but he could not make a trip for one passenger alone short of \$2.50. So I decided to make the trip going around the bay. If you will get your atlas and turn to the State of Michigan you will get a good idea of these wonderful peninsulas in this Traverse region. At one point in my trip I asked the question of a man I met if I could not save several miles by following the shore around through the woods. He said I could, but the road was so sandy nobody could ride a wheel far. I felt so well, however, and also wanting a little adventure, I decided to try it, and I found an abundant use for all the muscle I could scrape up, I assure you. Had it not been for my lessons in chopping I think I should have played out; but I took it leisurely and walked where the sand was worst. Sometimes where there was hard ground most of the way, and brief patches of sand intervening, I would get up momentum enough to plow through the sand and reach solid ground. At one such spot the sand was worse than I had anticipated. My wheel slewed, and I went headlong over into the bushes. Before I struck the ground, however, I caught a glimpse of some beautiful red berries plentifully sprinkled amid a vivid bright green. After I rolled down among them a familiar perfume gave me a happy surprise. The ground was covered with wintergreens as thick as you ever saw clover in a clover-field; and these wintergreens were covered with bright-red luscious berries, sometimes half a dozen berries in a cluster. I left my wheel lying in the sand, and just sprawled myself out and had "rest and refreshment." Then I gathered a beautiful bouquet of wintergreens and berries, and brought them home to my good old mother in Ohio. After my refreshment the woods began to look a little more open, and pretty soon I saw a footpath that seemed to lead somewhere. Oh how I do love to see a footpath when I am wandering in the woods! It soon led me to a well-traveled highway. Toward noon I came into a little town where there was no hotel; but somebody said he thought I could get my dinner at a certain house. I stated my case to an old gentleman whom I found in the yard. Pretty soon I overheard at the other side of the house something as follows:

"There is an old man out here, and he wants to know if you can give him his dinner."

"What sort of man does he look like?"

"Oh! he's quite respectable-looking. I guess he is quite a gentleman."

"Well, bring him along."

We had beautiful bread for dinner that day, just as we always do in the Traverse region; and then there were canned black raspberries. Why! every spoonful of those berries was a happy surprise. And then we had some tomatoes with sugar and vinegar. You know I have been one of the dyspeptics that could not bear to use vinegar; but I can not remember that I ever ate any tomatoes so wonderfully delicious before in my life. It set me to thinking that the tomato is a wonderful gift from God that has never been half appreciated (can somebody tell us right here how many million cans of tomatoes are put up in the United States every year?).

After another nap such as only farmers and wheelriders can appreciate I went on up hill and down until I came to Elk Rapids. About three miles this side of the city I saw a lake perhaps a mile long and half a mile wide. A deep dredge canal that went away down into the earth so far it almost frightened one to look at it was emptying the inky waters of this lake into Traverse Bay. Where I took dinner they informed me that this lake bottom was a bed of marl. Nobody knew just how far down it went. Not only the bottom of the lake, but the meadows adjoining, were almost pure marl just below the surface. A great syndicate had discovered it and bought the lake. Just before reaching Elk Rapids I saw a great crowd of men at work on some beautiful buildings. I knew it was some enormous manufacturing plant, but did not at once connect it with the deposits in that lake. It is to be the largest cement-factory in the United States. Steam and electricity, and every known force, are to be employed. There are underground passageways, tracks and sidetracks, pipes and cables, monstrous cranes and elevators, and every thing necessary for a fully equipped manufactory up with the present times.* Then I visited an immense plant for the manufacture of charcoal iron. The ore comes from up along the lake, but the charcoal is burned right there on the ground. Everybody has heard of charcoal iron and its superior quality. It is thus termed because they use charcoal in its manufacture instead of coal that comes from the mines. Here at Elk Rapids, as well as at Traverse City, they have water power to run all their mills and factories, and a great surplus is constantly going to waste because there are as yet no enterprises or industries to utilize it.

From Old Mission, where I started in the morning, around the bay to Elk Rapids, is

*A beautiful object-lesson, demonstrating the value of this deposit of marl, is found on a piece of road near the lake, about a mile in length. This cement road is almost like an asphalt pavement. When it is a little damp it looks as if somebody had not only graded it off, but smoothed the surface down with a putty-knife, very much as you would spread putty; and it is so hard that the wheels of a vehicle make scarcely a visible impression on it. This same marl is largely used for making cement roads through Traverse City, so I am told. There is no stone flagging to be found in any of these northern cities; but they have a most beautiful artificial stone for walks, made of this "home-made" Portland cement, and it seems to stand storms and severe freezing during winter, without any damage whatever—that is, wherever the work is properly laid on sufficient foundation.

fully forty miles. Then I rode over ten miles more back to Traverse City, making fifty miles between daylight and dark; and I could have easily ridden twenty miles more had I not spent so much time in investigation. As I stood on a pretty fair sized hill that enabled me to look across at Old Mission, and along the shore over the whole pathway I had traveled during the day, it seemed again as if it were almost incredible that a man by his unaided strength could traverse all that territory in one short day.

I had planned some more work on my farm for the next day, and, indeed, I did not feel one bit sore or lame or fatigued. On the contrary, I felt more like swinging the ax again than doing anything else; but a drizzling rain and lowering clouds made me think that the November storms were at hand, and I feared, too, I was wanted at home; so I reluctantly started back for my home in Ohio. But when the sun came out after an hour or two, I felt blue and disappointed all day to think I could not have had just one more day's outing on "that farm in the woods."

Special Notices by A. I. Root.

BASSWOODS FOR FALL PLANTING.

Our young basswoods have been making a beautiful growth during the late fall weather. We have just had our first killing frost this 10th of November, and the leaves are now beginning to drop, indicating it is time for fall transplanting. We shall be glad to fill orders at the following prices:

One foot and under, each 5c; 10, 30c; 100, \$2.00. The above by mail, each 8c; 10, 35c; 100, \$2.25. One to five feet, 10c; 10, 75c; 100, \$5.00.

In regard to which is better, fall or spring planting, I am unable to say. We have had scarcely a failure in putting out basswoods either way. Trees of the above sizes are usually sent by mail or express. In large quantities they can be sent safely by freight, especially if they go south where the ground is not liable to freeze up before they can be planted.

SOILING CROPS AND THE SILO.

The above is the title of another excellent book by Thomas Shaw. Like his other books, open it anywhere, and any one who is interested in almost any branch of farming will find the book so interesting that he is loath to lay it down. I consider Prof. Shaw as one of the soundest and clearest thinkers we have at the present time on agriculture. While he has enthusiasm, one is impressed all along with his exceeding fairness and honesty. As an illustration: Most of the books on the silo are written by those who are strong in its defense. They unconsciously present the desirable features, but not so much the undesirable ones. Now, this may be all right in a measure; but Prof. Shaw seems just as anxious to tell us of the obstacles in the way as of the advantage to be gained. The book is not only for those who farm on a large scale, but for the average day laborer who has a cow and a garden. Shall he hire his cow driven off to pasture, or shall he grow crops for her and keep her in a comfortable stable? By the latter plan he can get a much larger amount of milk, and perhaps get more money from his cow. And then he is on the highway to "high-pressure gardening," because soiling crops is, emphatically gardening up to the highest notch.

Friend Shaw is great in the fight against weeds; and by the soiling plan every weed may be driven from your premises without ever touching them with a hoe. Every one interested in the growing of crops, it seems to me, should read this book, even if he does not practice siloing or the use of a silo, because the book touches on every page so many vital points on this whole matter of growing crops profitably. The price of the book is \$1.50 postpaid; and I am so anxious to see our friends benefited by it that we will

mail it for \$1.25, or we will send it clubbed with GLEANINGS one year for \$2.00. It contains 364 pages, lot of pictures, and is neatly bound in cloth. It is published by the O. Judd Co.

SEED POTATOES.

NAME.	1 lb. by mail.		3 lbs. by mail.		½ peck.		Peck.		½ bushel.		Bushel.		Barrel—11 pk.
	1 lb.	3 lbs.	1 lb.	3 lbs.	1 lb.	3 lbs.	1 lb.	3 lbs.	1 lb.	3 lbs.	1 lb.	3 lbs.	
Red Bliss Triumph.....	18	40	30	40	30	40	75	80	75	80	1 25	3 00	3 00
White Bliss Triumph.....	18	40	30	40	30	40	75	80	75	80	1 25	3 00	3 00
Early Ohio.....	18	40	30	40	30	40	75	80	75	80	1 25	3 00	3 00
Early Trumbull.....	25	50	35	50	35	50	85	100	85	100	3 50	3 50	3 50
Bovee.....	18	40	30	40	30	40	75	80	75	80	1 25	3 00	3 00
Early Vermont.....	15	35	20	35	20	35	60	70	60	70	1 00	2 50	2 50
New Queen.....	15	35	20	35	20	35	60	70	60	70	1 00	2 50	2 50
Lee's Favorite.....	15	35	20	35	20	35	60	70	60	70	1 00	2 50	2 50
Freeman.....	18	40	30	40	30	40	75	80	75	80	1 25	3 00	3 00
Twentieth Century.....	25	50	35	50	35	50	85	100	85	100	3 50	3 50	3 50
State of Maine.....	15	35	20	35	20	35	60	70	60	70	1 00	2 50	2 50
Manure Commercial.....	18	40	30	40	30	40	75	80	75	80	1 25	3 00	3 00
Carman No. 3.....	15	35	20	35	20	35	60	70	60	70	1 00	2 50	2 50
Sir Walter Raleigh.....	15	35	20	35	20	35	60	70	60	70	1 00	2 50	2 50
New Russet.....	15	35	20	35	20	35	60	70	60	70	1 00	2 50	2 50
New Craig.....	15	35	20	35	20	35	60	70	60	70	1 00	2 50	2 50

Seconds of any of the above will be (while they last) half the price of firsts, with the understanding that the seconds contain not only the small potatoes but those that are scabby, prongy, or cut in digging. The scabby ones are good for seed if treated in the usual way with corrosive sublimate, but they are a little more trouble.

SEED POTATOES AS PREMIUMS.

Any one sending \$1.00 for GLEANINGS, and asking for no other premium, may have 25 cents' worth of potatoes. And any one who is a subscriber, and who sends us \$1.00 and one new name may have 50 cents' worth of potatoes; but if the potatoes are wanted by mail the subscriber must pay postage. Please notice we give potatoes as premiums, but we can not afford to give postage stamps. A descriptive sheet of the above varieties will be mailed on application.

CONVENTION NOTICE.

MICHIGAN STATE BEE-KEEPERS' CONVENTION.

This convention will be held at Traverse City, Dec. 26 and 27, commencing at 2 o'clock on the 26th. No preventing providence, A. I. R. expects to be on hand during the whole convention, especially as this is right in the field where he has been writing up his Notes of Travel. President Hilton writes as follows in reply to my suggestion of being present at the convention:

I can not tell how pleased I am that you are to be with us at our State bee-keepers' meeting. I have been much interested in your talks about Leelanau County. That county being in my congressional district I shall feel you are more than ever "my neighbor" when you move to your summer home.

The twelfth annual meeting of the Minnesota Beekeepers' Association will be held in Plymouth Church, Cor. Eighth St. and Nicollet Ave., Minneapolis, Minn., Wednesday, Thursday, and Friday, Dec. 5, 6, and 7, 1900. An excellent program is prepared, and a good time promised. The Horticultural Society meets at the same time and place. Purchase railroad tickets to their society, taking a certificate for amount paid, and, if 100 certificates are secured, a reduction to one-third fare for the return trip can be had.

Dr. L. D. LEONARD, Sec.,
Syndicate Block, Minneapolis, Minn.
J. P. WEST, Pres., Hastings, Minn.

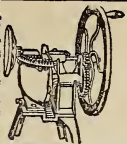
INDIA RELIEF FUND.

S. P. Hain,	Plummers Landing, Ky.....	\$ 25
C. M. Littleton,	" "	25
L. Tinsley,	" "	25
Mrs. N. G. Sikes,	" "	25
J. Butcher,	" "	25
Mr. A. Sorrell,	" "	25
Mrs. A. Sorrell,	" "	25
J. A. Rogers,	" "	1 00
L. Rogers,	" "	50
Friend,	" "	50
R. Carpenter,	Wallingford, Ky.....	25
Helen Montgomery,	Canasraga, N. Y.....	2 00
L. C. Stewart,	" "	2 00

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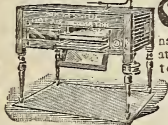
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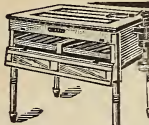
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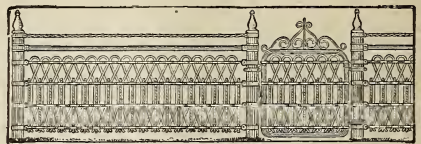


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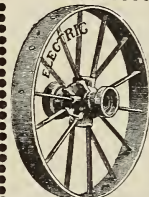
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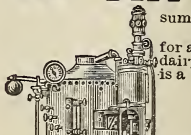
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