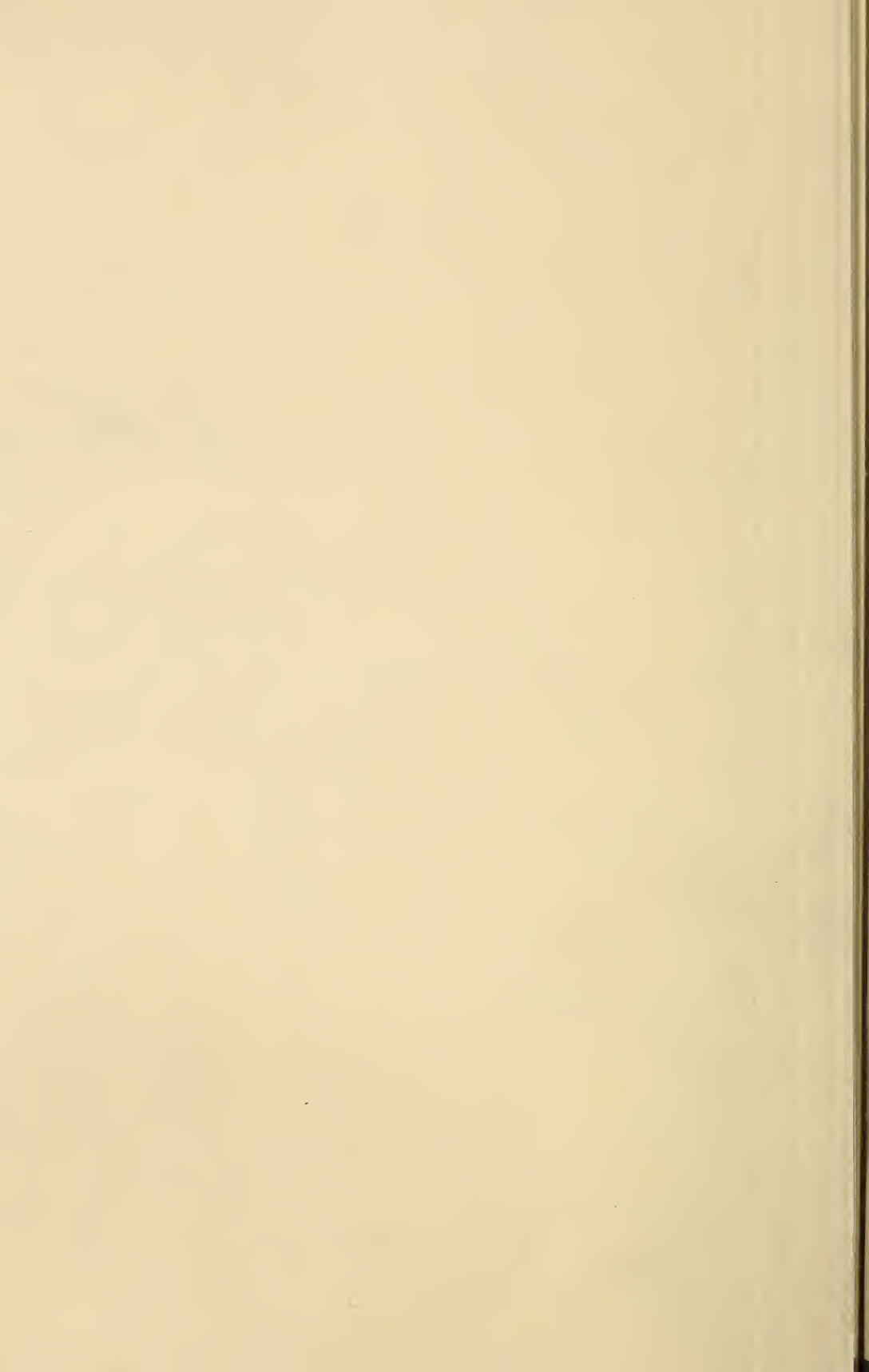


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**GLEANINGS**  
BEE CULTURE

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS.

ILLUSTRATED SEMI-MONTHLY  
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No. 3.

**STRAY STRAWS**

FROM DR. C. C. MILLER.

WHEW! what a winter!

WHAT'S THE BEST DATE for the next N. A. B. K. A. convention?

FALCONER has gotten up a calendar in beautiful style, with a wreath of wild roses in colors around it.

A PRINTER'S LIFE was saved by the distance of Medina from Marengo, when I read on page 47 that it takes 26 full days for a queen to mature. It should have been 16.

BEES ARE INSURED against fire or lightning while in cellar or within 200 ft. of dwelling, in the Phoenix, of Brooklyn, N. Y., says A. C. Waldron.

PROF. WILEY'S ADDRESS, on page 57, with its right and left handed polarization, invert sugar, levulose, etc., mixed me all up so that I wished there had never been any adulteration.

HENS EAT BEES, says C. B. J., and should not be allowed near an apiary. I have never seen hens eat workers, but negative proof is not very satisfactory. Have others found them guilty?

WHEN WAS HEDDON converted to the belief that adulteration is a benefit? Not long ago he was one of the strongest advocates for some kind of a stamp to protect us from adulteration.

I DON'T KNOW any thing for sure very often, and when I do happen to think I know something, Doolittle kicks it all over. Doolittle, I don't want you ever to speak to me again—till next October.

"DO SOUTHERN QUEENS stand the winter as well as queens reared in the North?" is asked. I think it is generally agreed that there is no difference, but it seems there ought to be at least a little difference.

THE EDITOR of B. B. J. is having a very sweet time. Packages of honey for the World's Fair are sent in to him, and he says, "Honey for Chicago has carried all before it, and it is honey all over the place as we write."

THE *Progressive Bee-keeper* was burned out, and suspended. Nothing strange about its suspending—lots of new bee-journals suspend. The strange part of the story is that it has come to life again, bright and smiling as ever.

THE SCOTTISH Bee-keepers' Association had on exhibition a collection of articles showing the utility of honey and wax, including confectionery, foods, beverages, ointments, plasters, toilet preparations, furniture creams, and medicines. Better bring 'em to Chicago, Sandy.

CANADIANS have been enjoying a little discussion as to the effect of a duty on the price of honey. I don't know much about such things, but it seems to me it would look a little more neighborly if there were no duty on either side.

AN ARRANGEMENT to prevent swarming is reported in the *American Farmer* as patented by H. P. Langdon. The intimation is given that it prevents the desire to swarm, and that's what so many are looking for. "The proof of the pudding," etc.

TWO DIFFERENT MEN have lately written of my living in Nebraska, and of my hive and honey-board. That's all right, except that I never got up a hive or honey-board, and never lived farther west than Marengo, Ill. It must be some other Dutchman.

FOUL BROOD in wax requires at least 194° F. for at least three hours, Prof. Mackenzie thinks, and that "the simple process of mixing the infected material with the melted wax is not sufficient to prevent germination." He seems to have little fear of foul brood in foundation.

BRITISH BEE-KEEPERS, some of them, are severely condemned by their brethren for advertising extracted honey as low as 14 to 16 cents per pound, one man saying he fed honey to his bees rather than to sell it for less than 25 cents per pound. I wonder how it would feel to get 25 cents, even for comb honey.

PROF. MACKENZIE, the Canadian bacteriologist, does not believe that chilled brood will produce foul brood, after making an experiment that he thinks "conclusively shows that there is a distinct difference between foul brood and ordinary putrefaction." That a bacillus has been found in an egg, he thinks requires confirmation.

THE EDITOR says (p. 66) that I have been president of the North American two or three terms. I know of but once. Did I make it so dull that the one term seemed long enough for two or three, or did Ernest write that with a pair of spectacles that made him see double, or was it A. I. with too much of that beer-plant inside of him?

A BRIGHT IDEA comes from W. L. Coggsball. You know a smoker sometimes slips out of your hand and falls, especially when your hand is tired. Well, take a piece of section, cut into strips  $\frac{1}{4}$  inch wide or more, and with small tacks fasten them on the outer edge of each side of the bellows, and "see how much easier you can work it and not drop it."

VERY UNKIND is the *British Bee Journal* to class Rev. W. F. Clarke's discovery as a second "scientific pleasantry." It says, "The trowel theory was started a few years ago by the Rev. W. F. Clarke, in Canada, as a pleasantry, no

doubt, seeing that the structure of the sting makes it quite unsuitable for such a purpose." Bro. Clarke better instruct those British editors.

SOME THINK that an occasional fire in the cellar is as good as or better than one kept continually burning. While I doubt that (providing the fire is needed at all), it is possible that the continuous fire is not worth enough more to pay for the extra trouble. If an occasional fire is used, I believe I would as soon have it in the milder spells, rather than the severer spells of weather.

WHAT IS HONEY? I'd like an answer to that, which would do to go into a dictionary. I find: A sweet juice collected by bees from the flowers of plants, and deposited in cells of the comb in hives.—*Webster*. The nectar of flowers when collected by bees and deposited in honey-combs in the hive.—*Secor*. The saccharine exudation of flowers, gathered and stored by the bees.—*Wiley*. Digested nectar.—*Cook*. Is either of these right, or what is right?

### LANGSTROTH'S REMINISCENCES.

#### HOW HE BECAME INTERESTED IN BEES.

The end of my Andover ministry was just what might have been expected. My health broke down entirely, and, after the exhausting demands made by a revival of religion, I lost my voice for a time, and came near losing my life. It now became evident that I must resign my pastorate. After this step I accepted an invitation to become principal of the Abbott Female Academy, in Andover. At the request of my people the connection between us was not formally dissolved until nearly a year after my resignation. I supplied the pulpit by exchanging with the neighboring pastors, and by giving place occasionally to candidates whom the people wished to hear. Little pastoral work was done by me, and yet my salary was paid in full unto the day I moved away. I shall never cease to remember with gratitude the Andover people for their considerate and loving treatment of their young minister.

At the time of my marriage, my mother and one sister became entirely dependent on me, and made their home with us as boarders in the family of one of our deacons. When I began house-keeping, in the spring of 1837, the inflation of prices in the time of President VanBuren had culminated. I paid \$15.00 for my first barrel of flour; and although my salary was considered a good one, and was paid promptly every quarter, it soon became quite apparent that my expenses would exceed my income. My dear wife, instead of even intimating that it was hard for us to begin the world with expenses much greater than would suffice for a considerable family, always encouraged me in doing my duty for the relief of the dear ones whom God had made dependent on us, saying that we might thus safely trust events to our heavenly Father.

There came, one day, a gentleman from Boston, with a letter from my old friend Prof. Olmstead, of Yale College. This man's son had fallen behind his classes, and needed private instruction, and his father wished to place him under my care. He seemed unwilling to take any denial, and offered me for my services a very liberal sum, saying that he would pay more if that was not enough. His providence of God supplied our wants.

Having accepted an invitation to become the principal of the Greenfield, Mass., High School for Young Ladies, I left Andover in the spring of 1840. While acting as principal of that school I supplied for nearly two years the pulpit of the

Second Congregational Church, and then became its pastor. With an increasing family I again began to find my income too small, when a gentleman visited me, bringing a letter from his sister, who was well acquainted with my wife. Having a daughter quite hard of hearing, he wished to have her education completed in our family; and for a considerable time we received from this source such ample remuneration as our necessities required.

My first child, a son, was born July 12th, 1837. My second, a daughter, was born July 16th, 1840. When about a year and a half old she became afflicted with a spinal complaint, and we feared that she would grow up a deformed cripple. For many months she lay in her little crib, on my side of the bed, that I might lift her and change her position, as she would pitifully moan out during the night, "It hurts! oh it hurts!" My wife says I often fell asleep while trying to amuse her with childish stories. As is frequently the case in spinal complaint, her mind developed abnormally fast; and in looking over remarks which she made, and which my wife set down at the time, it hardly seems possible that such things could have been said by a child of her years. One day she asked her mother whether God would let her hem his pocket handkerchiefs when she got to heaven; and when told that God did not need any pocket handkerchiefs she replied, "Oh! yes, mother, he does; for I heard you read the other day from the Bible that he would wipe away all tears from their eyes." It was many years before she recovered so as to lay aside the appliances which she was obliged to wear by night as well as by day.

The apostle says, "We have not a high priest that can not be touched with the feeling of our infirmities." Jesus was human as well as divine; and we feel sure that, under all circumstances, he is able to sympathize with our suffering humanity.

More than fifty years have passed away since we grieved over our suffering child, and yet I can never see a mother with a child afflicted with spinal disease but that my heart goes out to her in deep sympathy, and I want to know all about her troubles, even if I can suggest nothing that will help her. When, later in life, I was confined to a bed of suffering by a railroad accident, the words, "He was wounded for our transgressions, he was bruised for our iniquities," seemed to touch my heart more than they had ever done before; and my sympathy for the poor wounded soldiers was greatly increased.

I have already said, that, notwithstanding my early passion for studying insect-life, I can not remember, with a single trifling exception, that I took any special interest in such matters during my college life. In the summer of 1838 the sight of a large glass globe, on the parlor-table of a friend, filled with beautiful honey in the comb, led me to visit his bees, kept in an attic chamber; and in a moment the enthusiasm of my boyish days seemed, like a pent-up fire, to burst out into full flame. Before I went home I bought two stocks of bees in common box hives, and thus my apiarian career began. With the exception of a small book, the author of which seemed to doubt the existence of such a thing as a queen-bee, and my schoolboy's Virgil Delphini, I knew absolutely nothing of the vast literature of bee-keeping, and of course my progress was very slow. In the end I was undoubtedly a great gainer by this ignorance of books, as what came under my own observation was so carefully studied as to become much more my own. Almost the very first thing that I bought, when I removed from Andover to Greenfield, was a stock of bees in a hollow log. Increasing gradually the number of my colo-

nies, I learned, by diligent inquiries of the best bee-keepers in my vicinity, all that they could teach. But this was not much, as none of them knew enough to drive bees out of their hives, nor used smoke to facilitate their operations, so that I was indeed groping almost in the dark. About this time I was fortunate enough to get two valuable works—the “Letters” of the immortal Huber, and the second edition of Bevan’s Treatise on the Honey-bee, London, 1838. These works made known to me the facts accumulated for thousands of years by the great masters who had so profoundly studied the habits of bees. I soon became the happy owner of an improved Huber hive, and several bar-hives, all made according to Bevan’s directions. Ignorant of the futile attempts of Morlot and other German and French bee-keepers to make a practical hive for the common bee-keeper, out of the Huber hive, I experimented on that line with no better results until at last I was content to use the Huber hive merely for purposes of observation. The only improvement which thus far I was able to make upon the hives of others was in giving them greater protection against the extremes of heat and cold, and the sudden changes of temperature so eminently characteristic of our climate.

During my pastorate in Greenfield I suffered much from frequent attacks of my old head trouble, which at last compelled me to resign my charge. Removing to Philadelphia, I established there, in the fall of 1848, a school for the education of young ladies. Having a second-story piazza, and a number of spare attic rooms, I built up quite a city apiary, and began to experiment upon a much larger scale. In the Bevan hive, which I mainly used, the combs were attached to bars or slats which rested upon rabbits just deep enough to receive them. The cover fitting closely upon the top surface of these bars, was, of course, very firmly propolized to them. To remove it and get at the bars, Key’s metallic plates were used; but even with them it was often difficult to perform the manipulation needed. As the cover rested on the bars, the bees could get into the supers placed upon it, only by passing between crowded ranges of combs; and the opening admitting them into these supers had to be made with special reference to this fact. My chief improvement upon this hive was to deepen the grooves upon which the bars rested, so as to allow about three-eighths of an inch between the cover and the bars. This not only facilitated very much the removing and replacing of the cover on which the surplus honey-receptacles rested, but gave a shallow chamber from which the heat and odor of the hive could ascend freely into the supers, besides admitting the bees to them in the easiest possible manner. This improved hive had also a bottom-board of my own invention, which could be opened or shut, even in the most crowded stocks, without crushing a single bee, and which, as the hive stood upon legs, permitted the attachments of the combs to the front and rear walls of the hives to be severed from below as well as from above. Some of these hives were about 18 inches long by 18 inches wide and 6 deep, thus giving an unusual storage room for surplus-honey receptacles placed above the main hive. There was then very little demand for honey in the best markets in this country, except in the comb, and no hive which did not furnish its surplus in this form could hope to gain any favorable recognition. From these flat hives I obtained the beautiful specimens of honey-in-glass tumblers and globes, etc., for which, in 1851, I obtained the first premium from the Philadelphia Horticultural Society.

*Continued.*

## MANUM IN THE APIARY.

MANUM’S WAY OF STOPPING ROBBERING; SEALED COVERS VS. ABSORBENTS; SMALL FRUITS, ETC.

“Now, Mr. Alexander, if Mrs. M. will excuse us from any further dinner-table talk we will walk over to the farm where my home apiary is now located. My wife has learned that, during the bee-season, I am very unceremonious, and at times she makes big eyes at me. But the truth is, Mr. A., since I have got to running my bees alone I have formed the habit of eating very hurriedly—so much so that I often deprive myself of a full dinner when it so happens that I can take dinner at home. More often, however, I have to take up with cold lunch at an out-apiary, and it is mere chance that you found me at home to-day. Here we are at the farm, only about ten minutes’ walk from the house.”

“What are you going to do with those stones in that great pile?”

“I intend to use them in building a cellar-wall for my new house which I propose to build next summer, if—if—the bees do well for me. There, the house will stand right here on this elevation.”

“Why! what a beautiful location for a home, with such a fine view of Lake Champlain Valley, with the Adirondack Mountains in the background, and with this grand old green mountain in the rear! But, Manum, I should almost be afraid this great mountain would roll over on me. My! how I should like to climb to the top of it! How long would it take me?”

“Well, Mr. A., that would depend upon your taking the right path. I have walked to the top in one hour. There, here we are among the bees; and there seems to be trouble up there at No. 23—robbing, as sure as you live, and a bad case of robbing too. My! see the dead bees in front of the hive.”

“Sure enough! and what can you do to stop it?”

“Well, as this is a bad case I must be thorough with them. Here is a pepper-box sprinkler filled with peppermint water. You may hold it for me while I remove the cover (honey-board) to let out all the robbers I can. There, now, I will give the bees, combs and all, a good sprinkling. This changes the scent of the hive, and seems to give the home bees new courage to defend themselves; and, besides, it causes the robbers to hesitate somewhat at the entrance. Now I will stuff the portico full of this green grass and weeds. Let’s put in a lot of it, so the robbers will have to crawl some distance to get to the entrance. Their progress, you see, will be so slow that the home bees will have fewer robbers at a time to contend with, and, furthermore, the robbers will soon tire of crawling through the grass. And now I guess that, in order to make a sure job of it, I will get my garden sprinkler and give this pile of grass a thorough wetting. There, do you see the robbers are getting discouraged already?”

“How long will you leave that grass over the entrance?”

“That doesn’t matter very much—three or four days, and perhaps a week. This stuffing the entrance with grass is nothing new; but the difficulty with most bee-keepers is that they do not use grass, straw, nor hay enough. They will just throw up a few spears of hay or grass, and then take it away at night or the next morning. I have often left it as a barrier a whole week. Of course, after a time it settles enough so the home bees can pass out and in at the ends, or at top of the grass; but the material being still there, the robbers seem to think

there is no chance for them to enter; at least, I usually succeed in stopping severe cases of robbing in this way."

"Manum, do you use the Hill device over the frames in preparing your bees for winter?"

"No, Mr. Alexander, I do not. I did years ago use something similar; but of late years I just lay the quilts right on the top-bars. There is no harm, however, in the use of the Hill device; but it is something of a bother for me to use them; and, thinking them of but little benefit with my small frames, I have discarded them. I received a letter only yesterday from a party who inquires about these top passages; also regarding the spacing of combs for winter. My answer to the last question was, to space the combs  $1\frac{1}{8}$  to  $1\frac{1}{4}$  from center to center. This seems to admit of a greater number of bees between the combs, and I imagine they winter better when the combs are so spaced. However, we all have our whims and notions about many things in the apiary, some of which, I dare say, are mere whims, and of no real benefit to the bees."

"Manum, what do you think of sealed covers? Do you think it advisable to allow the covers to remain as the bees fix them for winter, sealed tight?"

"Having had but little experience in wintering indoors, I can not answer for those who winter their bees in that way; but for outdoor wintering I prefer to remove the covers, and, in their place, spread over the frames some kind of quilts; and over these, six or eight inches of some kind of absorbent. I use dry planer shavings. The theory advanced by those who advocate sealed covers is, that the bees, governed by instinct, seal their hive air-tight except the entrance. True enough; but it is far more than the *one object* of retaining the warmth which they generate; and while it may prevent the escape of a small amount of heat, it also prevents the escape of foul, damp air, which, in my judgment, is more injurious to the bees than the loss of the *little* warmth which may escape through a well-prepared cushion, through which the foul air will escape to give place to pure air entering in through a very small entrance. The case may be very different, however, with indoor wintering, because it is possible that, in a warm cellar, the bees will set the air in motion in such a way as to cause the foul air to pass out of the entrance, and pure air to enter in, providing the air in the cellar is kept pure by proper ventilation. In this way the bees may be able to overcome the difficulty; or, in other words, purify the air in the hive in a moderately warm cellar, while it would be impossible out of doors; therefore, while sealed covers may be advisable indoors, it may be bad practice out of doors. I have become convinced by experience, that sealed covers are detrimental to the welfare of the bees when wintered on summer stands.

"A few years ago I bought two colonies of black bees in old box hives, of a farmer. I was to have my choice of ten or twelve colonies. I got them in March; and upon examining them I found one hive that had an inch auger-hole in the top. This hole was open, and had been all winter. A few days before, there had fallen some six inches of snow (these bees were on their summer stands), and I found on each hive eight or ten inches of snow—new and old snow. The warmth from the bees in this one hive had melted the snow directly over the hole, and there was a funnel-shaped hole through the snow, so that the bees could be seen from the top, upon raising the hive from the bottom-board to examine the condition of the bees. I found this colony was the strongest of the lot, and I took it. Again, three years ago this fall,

when I packed my bees in my home apiary I found I was short five cushions; hence five colonies were left unmolested, and remained all winter, with sealed honey-boards. They were well packed on the sides, and had a good cap (roof) over them; in fact, they were double hives, or a hive within a hive. In the spring, on the first examination of my bees I found these five colonies dead, and a dauby mess they were, while my loss among the others was only 2 per cent, and all were dry and healthy. The result might have been different, however, if wintered indoors."

"I notice, Manum, that you have pieces of tin tacked to your winter-entrance slides (entrance-reducers); what are they for?"

"They are to prevent mice from gnawing holes through the slides. I do dislike very much in the spring to find that mice have taken up their abode in the same apartment with the bees, as that always means mutilated combs.

"Now, Mr. Alexander, inasmuch as your principal business is raising fruit and propagating new varieties of fruits and seeds, I should like to ask you a few questions; and at the same time I should like to have you see my berry-fields. Let us go to the strawberry-bed first. There, you will see I have three-fourths of an acre in this bed. Here are two rows of Jessies. The next two are Haverlands, and the next one Jessies, and then I have here Bubachs, Cumberlands, Downings, Crescents, and Gandies. These varieties cover about half the bed, then the rest are all Wilsons; and as this is my first experience in the berry business except for home use, I want to ask you if I have set them out properly."

"Well, Manum, in the first place I want to say that you have a very fine bed, and you have kept it free from weeds; but I would have set only one row of Jessies to three or four rows of Haverlands, and then one row of Jessies and four more of Haverlands, and so on; and I would have followed the same rule with the other kinds—one row of perfect blossoms to three or four imperfect ones; and of all the berries you have, I think that, for your soil and trade, you will like the Wilsons better than any of the others."

"Would you advise covering my berries with straw?"

"Yes, a light covering will protect the vines from sudden changes of weather; but at the same time, if you are not careful about the amount of straw you put on them, the mice may do more damage than the weather would to the unprotected vines; therefore, as the danger from thawing and freezing is only in early spring, I would defer the covering until then; and in that way you will avoid any danger of harm by mice."

"Here we are in the blackberries and raspberries. Here I have 300 blackberry-bushes, Snyders and Taylors, and here are three rows (fifty in the row) of the Shaffer red raspberries; and the rest of the piece ( $1\frac{1}{2}$  acres) are the Cuthberts."

"What have you got this wire strung along these rows of Shaffers for?"

"That is to keep them off the ground. They grew so very rank and sprawling that I feared the winds would whip them all away."

"You will find, when you come to tie all these to the wire, that the twine will cost you quite a sum of money. I should rather have kept them pinched back, and had them grow up more stocky. You will learn that after more experience."

"Yes, I suppose that would have been the proper way. I think you are quite right in recommending summer pruning; but, you see, I neglected to do so; hence I must now do the

next best thing; and so far as the cost of twine is concerned, I shall not pay out a cent, as I shall use corn-husks for strings by slitting the husks up into half-inch strips when wet. By twisting a little they are much nicer for that purpose than any twine I can find. I have used husks for tying up grapevines, and like them very much."

A. E. MANUM.

Bristol, Vt., Jan., 1893.

[Mr. Manum's accidental experiment was rather disastrous to the sealed-cover idea. It didn't work that way for us. We are trying the matter on a more extensive scale this winter, and this spring we shall be able to come to a more definite conclusion of the actual value of the sealed covers, as the winter has been very cold so far.]

### BALDENSPERGER'S LETTER.

THE PLACE WHERE ELIJAH CALLED DOWN FIRE;  
BEE-MOTHS OF THE EAST; MOVING BEES  
ON CAMELS' BACKS; DRONES, HOW FAR  
WILL THEY FLY? ETC.

On p. 647, Sept. 1, you ask in a footnote whether they are able to identify the spot where Elijah called down fire from heaven. I do not know. You are aware that almost every miracle and every great deed spoken of in the Bible was utilized, at a remote period, may be for piety, but more likely to extort money, to identify a spot in every locality which might serve to draw the attention of pilgrims to the Holy Land. Of course, every one lays down a small sum of money, an offering, and churches, chapels, mosques, and convents have sprung up at such points, still held partly by the Franciscan friars, partly by the Greek church, and many have fallen into the hands of the Mohammedans since the retreat of the Crusaders. At the spot you call our attention to, no art has been used. A rough altar of stones is built up, and pointed out as the very place on which Elijah called down the fire. It is called "Muhraaka," "the burning place," and is still visited yearly by the natives, Christians, and Mohammedans, and probably this custom has been kept up ever since the great event. Four hundred and fifty prophets were beheaded on the banks of the river; the Israelites kept up their yearly visits; the Christians followed their example when they were masters there, and the prophet Elijah is held in great esteem by the Mohammedans also, by the name of "Chadder," the living, on account of his translation to heaven; so the custom was probably kept up, and is so to this day. Sheep and goats are taken there and offered in remembrance, or to fulfill vows made in illness, or for any kind of relief. The animals are killed, and eaten by all partakers of the feast. The big Carmelite convent which is located here gives one a very good idea of the buildings scattered about here and there in Palestine, mostly built with pilgrims' money. This is also a place where like festivals are held in remembrance of Elijah's being fed by ravens. The sanctuary of the convent is built over a cave, which is still pointed out as the identical cave of Elijah. The newly established apiary is about two miles back of the convent.

In warm climates, honey-bees eat a good deal more honey, when they can get it, than in the North. I think a colony needs fully 40 lbs. from the end of September to the end of February or middle of March. The warm days in winter are not scarce, and bees fly out in search of pollen and water, and take their stores in passing. Thus the mild winters are a nuisance, inasmuch as they cost us Southerners a good deal more honey than you Northern people. The most in-

telligent and progressive bee-keepers live in the North; but it is just this that made them start up there, while Southern bee-keepers depend a good deal on the let-'em-alone system. The few there are invent nothing, or next to nothing, leaving that honor to the busy Northern heads. We then buy your articles ready made, and use them gladly and profitably.

Mr. E. France, on page 649, talks about bee-moths. Although our Eastern bees keep the moths at a distance, yet old combs and want of bees greatly favor the breeding of the moths. If we do not take away, during the autumn, the surplus combs, the moths do away with them in the shortest time imaginable. We therefore take a hive with 13 combs at the bottom, and tier up in supers five or six stories high, and sulphur them once a week to begin with, and once a month later on. Camphor put in between the frames will also preserve them.

The "full-blooded" Cuban apiary, Sept. 1, p. 651, is just as much a genuine North-African apiary. Laying the hives down horizontally, and a few square hives, with one or two of cork oak, round, is just the thing you meet with in Algiers. The Spaniards probably got the idea here, and carried it to Cuba centuries ago. I think it would be very interesting, especially for Southern bee-keepers, to hear more about migratory bee-keeping, and the way of doing it at the least expense. Of course, in this country a different system will have to be used. In the old country I used camels to carry the bees where I wished. I wish I could have such animals here for carrying hives some little distance up the mountain-paths into the Alps; although I think with horror of the time of our greatest trials in getting the hives loose from the camels' backs, the cordage being very much in the way (see p. 627, 1890). But we used to pay only 20 to 50 cts., according to distance, sometimes a dollar, to carry eight hives.

I have never seen bees fly back to their place when removed  $1\frac{1}{2}$  miles from their original stand, in the height of the season; and do the big queen-breeders really mean to say that drones will fly 7 miles away from their homes, or, say, only  $2\frac{1}{2}$  miles, the queens meeting them half way, thus also flying  $2\frac{1}{2}$  miles? I shall try this next season here in the Alps, where I can easily tell black from yellow bees. I always thought, from the way bees acted and drones congregated in Palestine, that it was next to impossible to have queens mated at such distances. I left ten nuclei with virgin queens in the home apiary in Jaffa, one apiary being two miles away, some very considerable apiaries about four miles, and an apiary of about ten hives about one mile away. Well, not one of my virgins was mated. This was in June, 1889. I then concluded that, unless hives with drones were in the immediate neighborhood, they would not be mated, and consequently that queens can be mated pure, provided no other apiaries are within a radius of one mile. Again, as I am writing I remember that, in 1883, I was raising queens in Beirut, at the Lebanon Apiary, for Mr. Frank Benton; and having young queens continually, by June I had no more drones in the apiary, and I could not get my queens fertilized. In my trouble I wrote to Mr. Benton, then at Athens, Greece, to ask him how I could induce my queens to lay drones. They were all given up entirely to queen-rearing. He wrote some directions; but I had already bought native bees, with plenty of drones, a few miles away, and brought and transferred them into bar-frame hives. That helped me out of my trouble.

Your description of the "big Injun," p. 741, reminds us of our Arabs, in their haughty and indolent way; and the further you go among

the tent-living Arabs, the more you will find that the description of the red Indian agrees with the Arab or Bedouin, except that a real Bedouin will never work in towns or villages. If he does any thing at all, it is only in his tribe. The Bedouins, as a nomadic race, never keep bees, though they are very fond of honey and sweets.

What were the results of your slumgum experiments, p. 771. Oct. 15? I came here with 58 lbs. of cappings from extracted honey. These cappings were dripping with honey. I had no time to wait till all the honey had dripped out, so I proceeded to put them at once into two small solar wax-extractors. We had none of the huge California description. Our results were as follows: 14½ lbs. of pure yellow wax; 24 lbs. of brown honey (by the sun); 11 lbs. of residue; 8½ lbs. had evaporated. Total, 58 lbs.

We use the residue for the fire. It gives considerable heat, and goes a long way. I tried a smaller lot of cappings, which were put on a sieve; and after several days, when all honey that could possibly get out had run off, I had 1 kilogram (38½ ounces) of cappings, and the results were: 9½ oz. of pure yellow wax; 4½ oz. of brown honey; 12½ oz. of residue; the rest had evaporated.

A North-African drone was enjoying sunshine at about 11 o'clock, marking 64½° Fahrenheit in the sun, Dec. 12, in my Nice apiary.

PH. J. BALDENSPERGER.

Nice, France, Dec., 1892.

[We were not aware that any one claimed that drones would fly 7 miles to meet queens. If there is such a one, let him speak up. We have recorded instances of where worker-bees have flown 7 miles to an island in search of honey. We have had reports also of how bees were crossed with other bees 7 miles away. Or perhaps it was this way: That it was not safe to count always on pure races of bees when another and a distinct race was within six or seven miles. Perhaps Doolittle can help us. The results of our slumgum experiments were given on page 884 of our Dec. 1 number.]

## HEREDITY.

### IS IT THROUGH THE QUEEN OR THE WORKERS?

The question of heredity is an important one; and of late, in more than one quarter has there been some discussion as to traits inherited by bees. The matter is practical and important, else I would not touch it, for I am not capable of dealing with it as a scientist; but if I go astray I have little fear but some one competent will pick me up and set me back in the right path.

Probably all are agreed that it is important to have bees with certain characteristics, and that, by careful breeding, something can be done in the way of weeding out, fixing, or increasing qualities possessed by colonies under treatment. For years almost entirely the queen (the mother) has been considered in breeding. All agreed that the drone (the father) had perhaps an equal influence upon the offspring; but the difficulty of controlling fertilization made the queen practically the main one to consider. If at times some one ventured to ask, "Is an Italian queen raised by black nurse-bees as good as one raised by Italian workers?" he was promptly answered that the nurses had no influence on the character of the young queens fed by them.

Now, however, there are those who advance the opinion, that from the workers, rather than from the queen, come inherited traits; and

these opinions come from such respectable sources—notably among those who advance them stands the able editor of the *Revue Internationale*—that they are not to be lightly set aside.

Mr. Bertrand, the editor mentioned, argues somewhat after this fashion: The young bee begins to feed the brood without taking lessons in feeding; later she produces wax, and builds combs without any apprenticeship therein; finally, some fine day she starts out; and, having marked the location of her home, goes to seek water, honey, or pollen. These instincts are possessed by neither father nor mother; the queen has the single function of laying eggs, and the role of the male is still more restricted in spite of its importance. How can the worker transmit these marvelous instincts, since she never has any descendants?

Then he asks if the worker does not transmit traits of character through the food given to the larvæ. This food is the product of her organs, secreted by certain glands, somewhat as the milk of the nursing mother is produced among the mammalia.

Mr. Bertrand fortifies his position by saying that he and others have observed colonies which, through a long course of years, have preserved the same good or bad characteristics, in spite of the introduction from time to time of queens raised in other colonies. In this case these characteristics must have been transmitted by the nurse-bees. As to the practical bearing, he says that, if this influence of the nurse-bees upon the progeny really exists, then, 1, the introduction of a new queen will not of itself succeed in changing the good or bad characteristics of a colony; 2, the nursing of royal larvæ should be entrusted to those colonies whose workers show desirable traits.

Careful practical observation ought to help us to reach the truth in this matter. I think most of us have been in the habit of thinking that an impregnated egg would produce the same queen, no matter in what colony reared. At the same time, we know very well that external influences have much to do with the quality of the queen raised. Hardly any one would expect as good a queen from a very weak nucleus late in the fall or very early in the spring as from a powerful colony in a heavy honey-flow. Moreover, we know that the food is the main factor that makes all the difference whether an egg produces a queen or a worker. We know, too, that in the human race the child is affected by the milk of the nursing mother.

Besides, how can a queen transmit qualities that she never possessed, and that none of her ancestors ever possessed? Here is a colony remarkable for the great amount of nectar gathered. Do they get that trait from the mother? She never visited a flower in her life. Here's a hardy race of bees from a cold, mountainous region, made hardy, you say, by the endurance of hardships and the survival of the fittest through many generations. The hardness is an inherited trait, and it will take generations to breed it out. Let us see how that hardness could be gained, on the ground that all transmission of traits must be solely through the queen. On this inclement spot first settled a swarm from a milder region. Hardships, such as they had not previously known, are met by the workers, but the queen is kept in the same comfortable warmth in the hive that she enjoyed in the milder region. How can she become any harder? And if she is no harder, how can she transmit increased hardness? Or, suppose a colony becomes unusually vicious, can the queen transmit that viciousness, when she never uses her sting? But, as I said before, practical observation ought to help



settle the question. Let me suggest an experiment that is easily tried, and can be completed in two or three months. Suppose A is a colony remarkable for its vicious disposition, and B a colony equally remarkable for its mildness of temper. Remove the queen of each; let A raise a queen from an egg taken from B, and let B raise a queen from an egg taken from A. If inheritance is through the queen, then we may expect, at the end of three months, that the two colonies have exactly changed characters; but if through the nurse-bees, then each colony should remain its former self.

In spite of the difficulty of answering some of the questions asked, especially the one raised by myself as to the hardy bees in the mountain region, I confess that I am loth to make an unconditional surrender.

There are everyday facts on the other side that are hard to get over. Take the very case that I last supposed. Does not the experience of all practical bee-keepers teach them to expect a change in the disposition of the two colonies when the queens are changed, provided, of course, the young queens meet the same kind of drones? In that case it seems pretty clear that the principal factor in the case is the queen herself.

But it does not prove that the nurse-bees may not have some influence, however slight that influence may be; and if we are to raise the very best queens, it may be worth while to institute careful experiments to try to decide. It seems to me that here is an important field of inquiry for our experiment stations.

Marengo, Ill., Jan. 2.

C. C. MILLER.

### HIGH-PRICED QUEENS.

DOOLITTLE DISCUSSES WHO SHOULD AND WHO SHOULD NOT INVEST IN THEM; VALUABLE HINTS.

If fathers Langstroth and Quinby had been told, in the fifties, that a trade in queen-bees would have sprung up within forty years to such an extent that, during the year 1892, fully 30,000 queens would have been reared and sent by mail to nearly all parts of the world, it would have been hard for them to believe it; yet such are the facts, as we find them in the history made last year. This wonderful traffic in queens has sprung up for two reasons, the first of which is a desire for the improvement of stock; and the second, the call for queens by those who do not wish to raise their own, but wish queens to keep as a reserve force, ready to use in case of queenless colonies, or in giving to the queenless part of a divided colony, whether divided by the apiarist or by natural swarming. This latter class have in view only one object, that of procuring fairly good queens at a minimum cost, expecting no more of them than that they will produce plenty of good worker-bees to secure a bountiful harvest of honey, and preside over their colonies as all good queens should. The first, or other class, buy queens, or should do so, with a different object in view; that is, they want queens which have a value beyond being "fairly good queens," as they wish them for "breeding purposes," with a view to the improvement of the stock they now possess. The greater the improvement which can be obtained by rearing young queens from the one purchased, and crossing them with drones from the bees we already have in our apiaries, the greater the value of the individual queen; for therein lies nearly all of the extra value there is in such a one above those of the other class. Mr. Alley told us, a year or two ago, of having a queen worth \$100; and A. I. Root has

told us in the past of his red-clover queen, while others have spoken of queens of extra value as giving bees which were hardy for winter, giving bees capping their combs so as to present a snowy whiteness, etc.; but had you asked any of these if they considered there was \$100 worth in such queens to place in a box hive, or in a frame hive which was worked only for the honey which could be obtained, they would have told you at once that their worth did not consist in the amount of honey the bees from this individual queen would produce, but in the good qualities she possessed as a breeder, which good qualities were expected to be perpetuated in her progeny, and in this way multiplied by 10, 25, 100, 1000, 10,000 or 100,000 times, just in accord with the number of queens reared from her. No one queen can be worth even five dollars for what extra honey her bees will produce over the ordinary run of queens; hence it comes about that a costly queen should be procured for only one purpose; which is, the *improvement of stock*.

I have been led to write this article because many, apparently, do not seem to understand this, especially those just entering the enchanted field of bee-keeping. Why I say "enchanted field" is because many go wild over the pursuit when they first begin, paying out money earned in other lines, that is needed in the family, for high-priced queens, when such queens are of little if any more value to them than would be a queen costing not over one-fifth to one-twentieth as much. Nor is this thing confined wholly to beginners. To illustrate: Two parties in California ordered queens of my \$6.00 class, one ordering a single queen, and the other three. Not knowing anything of either party I filled their orders without a word of advice to either. About a year after, I got a letter from each, one writing that he had kept the queen I sent him from laying all he possibly could, keeping her in a nucleus hive similar to what friend Alley does his choice queens, so that her life might be lengthened to its utmost limit, having reared about four or five hundred queens from her. These queens were giving him much pleasure, and they were not only the best queens for business he ever had in his apiary, but he was satisfied that the amount paid for the mother of them was the best investment he ever made. The other party wrote me that he thought I was unreasonable in charging \$6.00 each for such queens as I sent him; that he had tested them side of the queens which he already had, and that he could not see that they produced enough honey above what his own queens gave to compensate for the large price he paid for them. Further correspondence brought out the fact that he had not reared a single queen from either of the three; and as one of them was not very prolific, he would not breed from any of them, for he believed they came from an unprolific race.

I might give many other instances somewhat similar; but as all would only illustrate the same thing, I will not, further than to state that a party in Australia took all the risk on queens of this class, getting only one there alive, and allowed her to die some months afterward, without rearing a *single queen* from her. If parties are not going to rear queens from those which they purchase, the lower-priced queens are just as good for them as any; and the purchasing of those of the costly grade is simply throwing away their money; and I am sure that friend Root and all other queen-breeders desire that all should understand about this.

One other point I wish to notice is the fact that some queens, after being shipped to dis-

tant places, are not as prolific as they were in the apiary of their birth. Some doubt that shipment ever injures the prolificness of any queen; but scores of us are convinced to the contrary. I have shipped queens to parties, requesting their return, had them returned as not being mailable to foreign countries, etc.; and while some were not injured as to their prolificness, others never came up to the standard of egg-laying afterward which they did before; yet, so far as I could see, their daughters were fully equal, reared after shipment, to those reared before, when they gave a maximum number of eggs. Therefore I would say to all, don't buy high-priced queens unless you expect to breed from them, and do not hesitate to breed from a purchased queen because she is not as prolific as you wish. G. M. DOOLITTLE.

□ Borodino, N. Y., Jan. 16.

[Nearly all practical bee-keepers and queen-breeders will admit the truth of your statements. We have often been pained to see beginners order high-priced queens when we felt pretty certain that they did not know really what they were doing, or what they wanted them for. But as it is our rule to fill orders promptly, and send what a customer orders, so far as we can, we have no right to ask questions. Once we ventured to suggest to the intending purchaser of a \$7.50 imported queen, that he had better get a few cheap queens first, as the letter plainly showed that he was a beginner. We received quite a sharp response, to the effect that, if we would mind our business, he would mind his. We have a number of times had complaints because the honey-queens which we sold a couple of years ago did not produce bees that would bring in from 25 to 50 per cent more honey than the other bees in the apiary, and that, therefore, the queens were a fraud. The only thing that we have ever expected of the honey-queens was, that they would produce a little more honey than the average. What we sold them for was for breeding purposes, in the hope that the daughters bred from them would be crossed with a new strain of drones, and thus make an unusually active lot of bees. We have had a good many letters showing that, in the hands of a careful and intelligent bee-keeper, such results have been obtained; and on the other hand we have been scored pretty severely by well-meaning but ignorant bee-keepers because no marked results were secured. We always advise beginners to purchase *cheap* queens first.

With regard to the egg-laying of queens being impaired on account of long journeys, we have always held that such long shipments had little or no effect one way or the other; and we do not believe that it does in a majority of cases. On the other hand, we have had many excellent testimonials of strong egg-laying on the part of queens after forty days' journey *en route* to Australia. As some of our good friends differ with us, it may be well to admit that a few queens may be so injured.]

### THE CANADA (ONTARIO) BEE-KEEPERS' CONVENTION.

A CONDENSED AND INTERESTING REPORT FROM  
W. Z. HUTCHINSON.

*Friend Root:*—I have been over to the Ontario Bee-keepers' Convention. I went by the way of Stratford, and stopped and took tea with our friend Gemmill. His bees are all in packed hives out of doors. They are not chaff hives, but there are outer cases filled with sawdust, I believe. The cases are used in the summer to

give shade, the packing being removed. I find that quite a number in Canada prefer this style to the permanently packed chaff hive. The chaff hive is too heavy and clumsy for manipulation. Mr. J. B. Aches was also the guest of Mr. Gemmill. In the evening we started for Walkerton, where the convention was to be held. Mrs. Gemmill went with us. I wish that more bee-keepers' wives could go with them to these annual gatherings. All along the way we kept picking up bee-keepers. I soon had for my companion that jolly, thorough-going bee-keeper, Mr. J. B. Hall. He is a splendid talker. I wish he would write, but he won't. At the Brantford meeting of the N. A. B. K. A. he said very little "in meeting." I wondered why, when what he said was so good. At Walkerton he was the life, or one of the "lives" of the convention. Perhaps he felt a little more free to talk at the Ontario convention—that it was a little more "his own folks."

By the time that we reached Walkerton, one car was pretty well loaded with bee-keepers. The convention was not to begin until the next day, in the afternoon; yet these Canadians have a way of getting there on time—they don't come straggling in one or two at a time after the convention is half over.

Walkerton is in a valley surrounded by hills and terraces. There were two or three feet of snow. The thermometer was below zero. As the sharp jingle of the sleigh-bells greeted my ear, and I looked upon the quaint snow-covered buildings, and felt the crispness of the air creeping through my overcoat, the words, "a stern Canadian winter," kept running through my mind. Never before did I see so many men clad in big fur overcoats and caps.

Before saying any thing about the convention itself it might be interesting to say a few words about the Ontario Association.

In the first place, it is incorporated. It is incorporated that it may receive aid from the government. It receives \$500 per annum, and there are no hard and fast restrictions as to how this money shall be used. The Association has to report to the government how the money is used, but it can be used for the good of apiculture, as the Association sees fit. The Illinois State Association receives a similar grant from the State, but it can use the money only in getting out a report and mailing it. This is more than is needed for this purpose, and it could be used—that is, some of it—to a great deal better advantage. The society has a board of thirteen directors. The expenses of these directors are paid when they attend the conventions. In choosing these men there is an attempt to secure the best men. It will be seen that the attendance of this many representative men is assured. Then there are affiliated societies that receive an annual grant out of the government grant; but before a society can be affiliated with the parent society, said society must have five members that belong to the parent, or Ontario Association. It will be seen that each affiliated society means five more members added to the parent society. Each year the Ontario Association makes a present, or gives a premium, to each of its members. One year it is a smoker, another a book, another a bee-journal, etc. All these things help to keep up the membership and attendance. I may also say that the Ontario Society pays its secretary \$50 a year, and the treasurer \$25. So far as organization is concerned, the Canadians are away ahead of us.

I might also add, that they have, in the person of Wm. McEvoy, a most efficient foul-brood inspector. While he is not exactly orthodox in his views of how foul brood may originate (that is, if I understand him correctly), he knows

how to cure it, and is doing a great work for Ontario. The government allows \$500 a year for this work.

Another thing: They seem to be able to secure almost any legislation that they ask for. I suppose that one difficulty is that our whole United States is so large, and so many interests are clamoring for recognition, that bee-keeping is lost sight of. Another thing, we have been lacking in united effort and organization.

The first session was partly used in transacting routine and official business. After this the subject of making an exhibit of honey at the World's Fair was discussed; or, rather, the manner in which the honey should be sent and exhibited. Mr. S. T. Pettit stood up stoutly for having honey shown in the candied state. He said that that was the shape in which it would reach foreign markets, and that was the shape in which foreign visitors should see it. They ought to see it in the shape in which it would reach them when they bought it. Mr. McKnight contended that the first thing that the majority of purchasers of extracted honey do, is to liquefy it, and that is the shape in which honey ought to be sold. J. B. Hall said that most people would not know what candied honey was. There was nothing attractive about the appearance of candied honey. It resembles lard. The way in which to show honey is in the liquid state. It was finally decided that each exhibitor should be asked to send at least a sample of candied honey, so that the attendant in charge can show visitors the state in which honey may often be found. The government will pay all the expense of getting the honey to Chicago, putting it up in glass vessels, a man to take care of it, and will pay the expense of returning it if the exhibitor does not wish it sold. When it was asked how many intended to send honey, almost every hand went up. Unless some of the States bestir themselves, Canada will get the persimmons at the World's Fair, so far as the honey exhibit is concerned.

In the evening Mr. McEvoy read a paper on "How I Prepare Bees for Outdoor Wintering, and Care for them in Spring." The bees were crowded upon six combs of solid honey, and then the hive packed with dry leaves. He placed great stress upon what he termed the "constitution" of the colony. By this he meant the condition of the colony itself instead of its surroundings. He considered this of greater importance than the manner in which it was packed or the manner in which it was wintered. A colony in excellent condition in the fall as regards queen, populousness, stores, etc., he felt was almost certain to be in similar condition the next spring. Mr. Corneil called attention to the fact that a board was a very poor covering for a colony. It is a good conductor of heat. Wool and cork dust are excellent packing material. Where the hive is out of doors, and the entrance left open, but little is to be gained by packing beneath the bottom-board. Those who wintered their bees in the cellar testified as to the superior results obtained when the colonies were near the top of the cellar. Losses nearly always were heavier in the lower hives. McKnight and others put no hives nearer the bottom than about fifteen inches.

Mr. Corneil read a paper on "The Density of Honey." He showed how greatly honey may vary in density. That which is very dense is not sold at a higher price, but it is worth much more. There ought to be some standard of density. To test honey by inverting a bottle of honey and seeing how rapidly the bubble of air will rise, is not at all reliable. The variation of the temperature alone is sufficient to destroy

the value of this plan. An instrument (hydrometer, I believe it is called) is needed to make a test; or, rather, this is one reliable and simple method. It is like a long slim little bottle. In the bottom is some lead. When put into liquid, the depth to which it settles into liquid shows the density, or specific gravity. There is a graduated scale on one side of the tube which shows the degree of density.

In the course of his remarks, Mr. Corneil said that, when thick\* and thin honey were mixed thoroughly, as when part of a comb contained thin honey and the other part thick, and the honey should be extracted, the honey would remain mixed. That is, the thick would not settle to the bottom and the thin rise to the top. He gave examples of allowing honey to stand a long time in tanks, and then taking some from the top and bottom; and a test showed both samples of the same density. Almost the whole convention took issue with him. S. T. Pettit had found the honey so thin on top that he had used a long-handled dipper to stir up the contents of the can and make the honey all alike. J. K. Darling had found a thin stratum of water on top of his candied honey, and the remainder of his honey seemed to be thicker after this. Mr. Corneil said that this water might have been absorbed from the atmosphere. Mr. McKnight had found a stratum of water two inches deep on the top of his cans of honey. The thick but liquid honey could be felt below it as easily as a board could be felt with the finger. Mr. Corneil thought that this might be a sort of separation of the honey, or of its component parts; that the thin substance was levulose. Mr. McKnight thought it too thin for levulose. It was simply sweetened water. Some other member had kept one can in which he dipped off the top of the honey from the other cans, and the honey thus dipped off was "pretty poor stuff."

Here the discussion drifted off into crystallization, or, rather, the cause of crystallization. While it is admitted, even by scientists, that all about crystallization is not yet understood, there seemed little doubt that the crystallization of honey is caused, or at least aided, by light, air, change of temperature, the presence of water, and by agitation. The honey from which nearly all of the water has been driven off by evaporation is slow to crystallize—may never do so. Honey that would remain liquid, if left in the comb, crystallizes upon being extracted, even if immediately sealed up in a bottle. The same honey, if left undisturbed in the combs, might be uncapped and yet remain liquid. The agitation of the extracting, and the more thorough exposure to the air, may be what starts crystallization. Some even went so far as to suggest that the "germs" of crystallization came from the air, the same as in the case of fermentation; but Mr. Corneil promptly "called them down." Instances were given where honey left at home in the fall remained liquid, while that taken away over railroads, and exhibited at fairs, soon candied as the result of agitation. W. Z. Hutchinson had some that candied in three days at the Detroit Exposition, where placed over the dynamos that generated the electricity. There was a constant jarring. The Dadants turn their honey from one barrel to another to start granulation.

Referring again to the matter of heavy honey settling to the bottom of the can, Mr. Frith suggested that honey might be ripened, possibly, by running it through a "separator," the same as butter is separated from milk. Mr.

\* In making this test the honey must always be of a certain temperature—60°, I believe.

Corneil's plan for ripening thin honey was to expose it in shallow tanks, covered with gauze or wire cloth, and very appropriately he advised that this be fastened on in such a manner that the bees *can't* get in.

While on the subject of crystallization, I might say that, while on the train going home, Mr. Pettit exhibited some crystals of honey that had been washed free from all stickiness. That is, some honey that had crystallized in large crystals had been washed in water until the small amount of uncrystallized honey had been washed away, leaving a handful of clean crystals that looked like a very light brown sugar. I could not resist asking, in a joking way, if it was quite right to be making sugar from honey. And right here I may say that the matter of sugar honey was thoroughly discussed, both in convention and out, and, as a result, a committee was appointed to secure legislation prohibiting the raising, importation, and sale of sugar honey. Some thought this action hasty, uncalled for, and ill advised; but as GLEANINGS is closed to any further discussion of the subject, I will not repeat the arguments of either side; but I should like to say a word in regard to the kindness and consideration with which I was treated in regard to this matter. After the session was over, quite a number came to me, some of them even laying their arm over my shoulder as they spoke, and said they hoped I was not offended by the action taken. It was a matter of principle, and not personality, and they were very glad that I came over; that to see on a bit of paper what a man had said sometimes gave a different impression than to meet him face to face. Of course, I explained that, so far as the *Review* was concerned, the discussion was at an end; that I had only the good of bee-keepers at heart; and if the majority said that I was taking the wrong course. I was more than willing to abandon it. This was all they asked; and to show their sincerity, quite a number subscribed for the *Review* right then and there. I came home feeling that I had been treated right royally, and wondering if we tried as hard to make it pleasant for the Canadians when they come over here. And right here, if the editor will allow, I should like to thank not only my Canadian friends, but *all* my friends for their kindness in this "latter-day" discussion. While they did not agree with my views, and even believed that their promulgation was working an *injury* to them, yet they stood by me as a *man*, and even upheld the *Review* as a model journal. This has given me a greater charity than ever for others. I even have a kindly feeling for the few who in moments of strong feeling have said harsh things.

I carried over a Crane smoker and a Bingham smoker. Mr. Corneil requested that I do so. He had a smoker in which the barrel was perhaps three inches from the bellows, and this allowed the introduction of tubes through which outside air could be induced to enter and join the original blast. With a lighted taper it was clearly shown that air was thus drawn in with the original blast. It was also shown that, even with only the nozzle put on the smoker, there would be some reaction—some air that would "bound back," so to speak, from the opening in the fire-barrel. With the closed tube of the Crane, it seemed to me that this reaction would be avoided; but Mr. Corneil agreed with Mr. Bingham, that the friction of the air in the tube and in the turns would rob the air of its force, so that the blast would be weaker than in the cut-off. He is going to take all three of the smokers home, and he thinks that he will be able to secure the use of a machine for testing the blast of air, and thus give all a

test. I told him that I thought they ought to be tested when filled with planer shavings; but he said that that would bring in an element of uncertainty, as they could not be filled *exactly* alike. I admit this; but it seems as though the force applied to the bellows might also be an uncertain element, although I do not know how he intends to compress the bellows. Filled, is the way in which a smoker is used; and, even though it would be impossible to fill them *exactly* alike, it seems to me that the results, so far as actual practice is concerned, would be sufficiently exact if they were tested when filled. I think the verdict would be more satisfactory. Mr. Corneil believes that the arrangement that forces the most air into the base of the fire-barrel will also discharge the most from the nozzle, regardless of the obstruction caused by the fuel; but he admits that he *may* be mistaken.

The subject of incorporation of the North American and the non-affiliation of the Ontario Association was about to be brought up for discussion, when I told them of the action taken at the Washington meeting, and the probability being that incorporation would be dropped another year; hence it was not thought worth while to take up any time discussing the matter. In conversation with the members it was plain to be seen that the great mass of bee-keepers in Canada have no other than friendly feelings for the bee-keepers "this side the creek." As one man said to me, "When we meet we find that we are all human, and have the finer feelings that belong to humanity; and it is a pity that any outside official ripple can not be smoothed out." So far, I can not see that incorporation has done one cent's worth of good. If it will *eventually* do good, there may be some sense in retaining it. If it is to be of no more use in the future than in the past, and it causes useless friction between us and our neighbors, why not drop it? In addition to this, it seems to me that it would be a very graceful thing to do to hold the meeting of the North American, next year, in Canada, with a Canadian in the chair. W. Z. HUTCHINSON.

Flint, Mich., Jan. 21.

## RAMBLE NO 77.

IN SAN DIEGO AND NATIONAL CITY.

While attending the bee-keepers' convention in Los Angeles I made the acquaintance of Mr. Arthur Hansen, of National City. From his appearance and language I supposed he was a New Englander, and was quite surprised to learn that he came from under the flag of Germany, and was born on the little sea-girt island of Fehmen, in the Baltic sea. Eleven years in this country, and several years on this coast, had transformed him into a thorough American, and an enterprising bee-keeper. While enjoying the many stirring scenes of the Cabrillo celebration I met Mr. Hansen again. The sweetness and harmony of our occupations led us to the renewal of our acquaintance. Our conversation naturally fell upon bee-keeping and bee-keepers in San Diego Co. San Diego is the shipping-point for a great share of the honey of this region, and the headquarters for bee-men is found in the supply and honey house of Mr. J. T. Lovett. Of course, we naturally gravitated to this great center of the honey business, and found that Mr. Lovett had been largely engaged in bee culture, owning and operating several large apiaries; but at present he devotes his attention to buying and selling honey, and dealing in supplies. His dealings in honey run up into the millions of

pounds. Large shipments of this honey are sent to foreign lands, and he has made many journeys to the old country in the interests of his honey business.

Mr. L. has a wide acquaintance with the bee-keepers of this country, and is doing good work in introducing a good line of supplies to his customers. I noticed that he sold only new 60-lb. tin cans and cases. The latter are made extra strong by the insertion of an extra board partition in the center of the case. The cans and cases were thus adapted to rough handling and long shipments; and, above all, the honey is never tainted with the suspicious odor of kerosene. In the long run, I think bee-keepers would be benefited by using such excellent packages; for, as a prominent bee-keeper remarked, it goes from bad to worse in the following ratio: If gasoline-cans will do, then kerosene-cans can be used; if good kerosene-cans are used, then poor ones will be used; and

When two such bee-keepers as Mr. Hansen and the Rambler get together it may be surmised that some magnificent scheme is brewing. To further the scheme, it became necessary for me to go to National City, five miles from San Diego. Mr. Hansen here happily keeps bachelor's hall, without a hitch in his household affairs. From his cottage we have a view of San Diego harbor and its surroundings; and at night the electric lights of the two cities enliven the darkness; while from the light-house, away out at Point Loma, the red and white lights give alternate flashes, warning the mariner of the danger-points.

I found that, like all great bee-keepers, Mr. Hansen possessed a hobby in the shape of some fine, pure-bred water-spaniel dogs. When properly trained, the pups were sold for a good price; and one was under special training that would be sold for \$100. This feature of the hobby appeared very profitable; and that our

friend is an adept at dog-training I will demonstrate further along.

I made the intimate acquaintance once of another class of pe(s)ts, very plentiful in all coast towns, and especially plentiful and very neighborly in National City—the festive flea. I can not describe him; for when I wanted to get a good look at him he had just stepped out. Like the voracious Chicago bedbug, their fine work is performed in the night; and in the morning, judging from the thousand crimson spots on the under-garments, they had been very industrious. In relation to the muscular development of the flea, good authorities say that, if a man had the same development and power, he could jump 25 miles and eat several tons of provisions. As to the eating capacity of fleas, I can corroborate all that has been said about them, with the additional fact that, when a person becomes a pasture for fleas,

dreams of the most horrid nature are induced. The most terrible dream I experienced on that first night with a flea was the sudden and startling appearance of that old Stray Strawing Matrimonial Bureau of Dr. Miller, with seven old maids and eleven widows. Dr. M. appeared in the dress of a Mexican desperado, on a grand hunt for California bachelors. The vision was so realistic, and the idea of being lassoed and brought face to face with such an array of curls and sharp noses gave me such a despairing sensation, and a desire to escape, that I suddenly awoke; and while I mopped the perspiration and fleas from my brow I rejoiced that it was all a dream. Thinking, in my half-awakened condition, that Bro. Wilder was in bed with me, I thrust my hand over to see if he was safe, and punched Mr. Hansen in the ribs. It seemed that he was also in the last stages of a flea dream, for he sprang bolt upright in bed, and shouted, "Well, who's a kicking?" This dispelled the last stages of our dreams, and we compared notes, rejoiced, and happily arose



HANSEN'S PETS.

in the latter, the contents of the can become as degraded as the can itself. It requires much patience and care to clean a kerosene-can; and even after a thorough cleansing there is more or less trace of a kerosene odor.

In Mr. Lovett's bee-keeping days, the results secured in good seasons were truly marvelous. Twenty colonies could be easily increased to one hundred, and some surplus honey secured. His colonies had often brought in 15 lbs. per day, while single colonies had gathered as much as 785 lbs. in a season.

There are always more or less bee-keepers at this headquarters, and loads of honey arriving in those large wagons, with four or six horses attached, and which had come from the mountains, sixty miles away, and perhaps even further.

Among other bee-men at Mr. Lovett's I found Mr. I. A. King, of Vineyard, San Diego Co. Mr. King is a relative of A. J. King, of Arizona, and, like his kinsman, is interested in bees, and is the owner of several hundred colonies.

while the dew was on the pumpkin-vines. With all the fervent, ecstatic hopefulness I possess, I do enthusiastically hope that Dr. M. will stay at home and attend to that straw-patch.



SCRATCHING.

Mr. Hansen's apiary is at present near his cabin, and consists of about sixty colonies. A great portion of them were obtained from houses and out-buildings in the vicinity. There is probably no portion of the country where there are so many wild swarms as on the coast of Southern California. The houses in every city and town are more or less infested. In a charming location, fittingly named Paradise Valley, Mr. Hansen showed me a dwelling, from the rear portion of which he had taken eleven swarms. The house was well stocked, for there was a swarm of bees under the shaded portions. Mr. H. writes me later that he has cleared the Bonnie Brae ranch of about as many more, therefore increasing his apiary. Mr. H. is an expert at this removal business, and can cut into a house and get the bees, and then replace the siding so that you would scarcely know where the swarm was taken from.

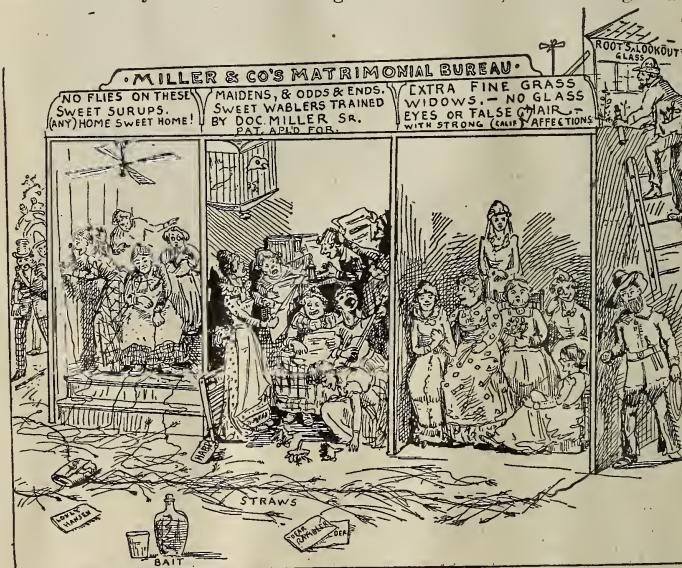
There is ample room in many buildings for the storage of large amounts of honey. The style of architecture, with many dormer windows and heavy cornices, favors the bees. One of these buildings, with many gables and towers, was erected for a sanitarium; but now the fine building is vacant, except for the accommodation of bees; and we saw very strong colonies busily working through crevices in the cornice.

Mr. Rowson has charge of the building, and has a small and growing apiary, which he has started from bees he has taken from the building. In his first efforts at removal, a colony was taken from above a closet. In removing the boards from under the colony, the combs became loosened, and down came a sweet and stinging mass over the head and shoulders of Mr. R. From his vigorous remarks in relation to his flight, I think he prefers an inside rather than an outside application of honey. As Mr. H. is a veteran of the G. A. R., he now operates against such colonies by the more safe method of a flank movement.

When with Mr. Hansen in October, there was an average of four swarms per week coming to his apiary, and were found on vines or bushes around the house. These were evidently starvation swarms coming from the surrounding dwellings. That stray swarms are numerous may be inferred from the fact that a boy hived sixty swarms in one season, in various nondescript boxes, and made quite a profitable venture of it by selling them to bee-keepers.

Mr. Hansen's apiary is established in the city only temporarily, or for building-up purposes; but if here for only a short time, his apiary has attracted the attention of certain fruit-men, and the harrowing commenced. His plan of dealing with the harrower was first to join the Union and send for a number of court decisions. One was posted in a prominent position in the postoffice; another in the city-council rooms, and copies were given to the city attorney and others. Since this judicious distribution of documents he has heard nothing from the fruit-men.

While some are anxious to get rid of the bees, others are indifferent about it. Messrs. Kimball, next neighbor to Mr. H., have a large raisin



vineyard, and conduct their business without injury from the bees, and, of course, without harrowing anybody. It is more and more evident that it is only ignorant and prejudiced persons who make this war upon the interests of bee-keepers. If the so-called depredations of bees were such an unmixed evil, the fruit-growing associations would have much to say about it; but in meetings of pomological societies in every county, not a voice is raised against the bees or their owners; but many

times their value as fertilizers of fruit-bearing blossoms is referred to. That all might become thus enlightened is the wish of every bee-keeper, including the

RAMBLER.

### CHEAP BEE-ESCAPES.

GOOD ONES THAT ANY ONE CAN MAKE.

I was considerably interested in that cheap bee-escape that "doesn't cost a cent," described on page 23. I have tried almost every form of bee-escape that has been suggested in recent years, as well as many devices of my own that have never seen the light; but I will admit that this idea is new to me. I have but little doubt that it will work, just as the writer says; but the material (common newspaper) is of such a flimsy nature that it is not likely it could be used more than once. Even then it is probable the super would have to be removed as soon as the bees were fairly out of it, or they would soon eat holes through it. That empty super under it is also a serious drawback. Still, the idea is a valuable one, and may often serve us in an emergency.

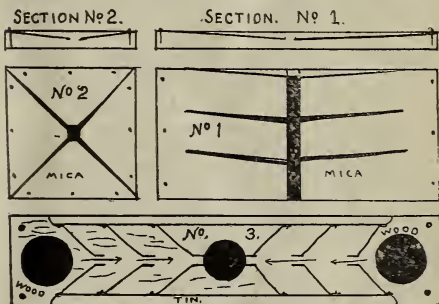
During the past season I have experimented a good deal with delicate springs made of mica, such as is used in stoves. Some of the designs which I made and tested worked nicely, including two patterns illustrated in the December *Review*. My aim has been to make a more rapid-working escape than any now known, and in that I was not fully convinced that I had entirely succeeded. I have about a dozen patterns, all of which work about equally well; but as we want better rather than more escapes, I have refrained from publishing them.

I have now got an idea from this paper affair, that may lead to valuable results; at any rate, I shall give it a fair trial another year. Now, suppose that, instead of using paper and punching X holes through it, we make a substantial escape-board, and cut from two to four square holes through it. Bevel off the upper edge, and to this tack or glue little V-shaped pieces of very thin mica, making a sort of hopper, with a hole not quite large enough for a bee to get through in the center. If this is rightly made, the springs will readily allow the bees to pass down, but will not allow any to return. Another plan is, to make the holes in the board oblong, say  $1 \times 2\frac{1}{2}$  in., using two pieces of mica, slitted to make four separate springs, each about large enough for a bee. This will allow several bees to pass through at the same time; and springs can be made of any length desired to make them work easily. These springs should be about half a bee-space apart at the ends. Of course, it can be made removable from the boards by making the escapes in small pieces, and fitting in the larger board. To prevent any danger of propolizing or gnawing by the bees, a little kerosene can be applied to the mica springs. It will be necessary to have a full bee-space under the escapes when the board is in position, so as to allow the bees to get out. I make no claim to originality, and, of course, have not tried it; but I am quite certain (from numerous tests with other devices) that it will work all right, and it will be quite permanent too.

When I started out it was with the intention of describing quite another escape, that I know, from thorough trial, is not excelled by any escape ever made, and can be made by almost any one, at a cost of about two cents each. The cut will fairly illustrate the device. To make the escape, take two sticks,  $\frac{1}{4}$  inch square and 8 inches long, and on one side tack six little strips of perforated tin, pointing to the middle, at an

angle of about 45 degrees. Accurate work is required, that they may be equally far apart, so they will be just opposite when in place. Tack a piece of perforated tin on one side, with a half-inch hole in the center for a bottom, and turn up  $\frac{1}{4}$  inch at either end. This piece should be  $2 \times 8\frac{1}{2}$  inches. Tack another piece of the same material, or green wire cloth will do, with a  $\frac{3}{4}$ -inch hole at both ends for a top piece, and the escape is done. To place it in the escape-board, cut a hole in it  $2 \times 8$  inches, and tack pieces of tin on the under side, allowing it to project  $\frac{1}{4}$  inch. The board cut out can be replaced when the board is wanted as a "sealed cover."

It is best to make one escape first; and when one gets the hang of it, any number can be



DIBBERN'S NEW BEE-ESCAPE.

made up. The material can be had at almost any tinshop, and ought not to cost more than two cents for each escape. That price certainly ought to bring them within the reach of all, even in a poor season.

All wire-cloth escapes, such as suggested by Mr. Larrabee, have proven to be unsatisfactory with me. Somehow the wire cloth, being so open, the bees do not seem to realize that they are cut off from the main hive, and usually make but little effort to leave. I have used from two to four escapes in a board at once, and something is gained in time; though, as bees act so differently, it is not easy to decide just how much. These escapes are not patented. All can make them; the cost is trifling; and if all are not supplied soon with good escapes it will be no fault of mine.

C. H. DIBBERN.

Milan, Ill.

### MOLDED COMB-GUIDES VERSUS THICK TOP WITH NO COMB-GUIDES.

TESTIMONY PRO AND CON.

Some time ago we asked for reports as to how the new molded thick top-bars were keeping off burr-combs as compared with the old-style thick tops. Our own experience has shown no difference, although we have had one of the heaviest honey-flows in years. But some of our friends seem to have had a different experience. Here is what a few write:

*Friend Root:*—Some men are born bee-keepers; some achieve bee-keeping, and some have bee-keeping thrust upon them. In the season of 1891, three swarms of bees alighted upon my premises, and I was forced to take care of them as best I could, having never had any work or experience with bees. I hived them all in box hives, and then I got a severe attack of bee-

fever. I read every thing I could get hold of on the subject of bee-keeping, especially the A B C, perusing it over half a dozen times. In the fall I put two of the colonies into a large box and packed them with chaff (the third I had lost by robbers). The bees wintered well, and were in excellent condition in the spring. They had several cleansing flights during the winter. Their stores consisted of white-clover honey. During all this time I looked about for a good hive, and determined upon the Dovetailed hive as the simplest and most easily handled. In the spring I transferred the bees to these hives with success. The first honey they gathered was dandelion. Next came white clover; and last, but not least, buckwheat. These two colonies I increased to 9 by natural swarming, and they gave me 400 lbs. of good comb honey, besides filling their brood-chamber with enough honey to winter them. I packed them in the same manner as last winter, except two colonies which are in Dovetailed chaff hives. All my bees are good at this date.

In regard to the Dovetailed hive, I wish to say that it answers its purpose perfectly. It is the hive for general use, being easy to manipulate, and perfect in all its parts. The only discrepancy I have found is the slotted bars of the section-holders. These should be a trifle thicker. When the super is full of honey they have bent down for me, and thus take away the bee-space underneath. I had plenty of burr and brace combs in my hives, all my bees being on Hoffman frames. I like them very well; the V edge is good.

I. W. HOFFMAN.

Roselle, Iowa, Jan. 19.

[The next one reads as follows:]

In GLEANINGS of Jan. 1, page 21, I see you ask for reports of burr-combs on different frames. I had 100 frames,  $\frac{3}{8}$  inch thick by  $1\frac{1}{8}$  wide, that did not have any burr-combs on; but the 100 frames of the same dimensions, only a molding off for comb-guide, were badly burred together, top and sides.

T. C. DE CLERCQ.

De Soto, Iowa, Jan. 13.

[These two, taken together with the testimony of Dr. C. C. Miller in favor of the old-style thick-top bar, might seem conclusive. Here is a letter just at hand, which confirms our own experience:]

*Friend Root:*—I see in last GLEANINGS you ask for reports concerning the improved thick-top-bar frames, in regard to burr-combs being built above them. I have both kinds, and can see no difference in them. Both kinds are free from burr-combs so far, and some of them have been in use two seasons. Don't think of going back to the old thick-top frames—no, never. Bees are gathering pollen from cedar and mistletoe. Prospects are good for a big honey crop.

L. B. SMITH.

Lometa, Tex., Jan. 14.

#### HOFFMAN FRAMES.

We have given the new improved Hoffman frames a fair trial this season in our apiary, and I think they are a great improvement over the old style. We have had no burr-combs built on them, and my combs are not all braced together as they were with the old L. frames—so much so that, when I was manipulating them, the honey was continually running down from where the brace-combs were fastened together. I shall discard all other old-style frames, and have all my combs built on the new Hoffman frames.—*M. H. DeWitt in American Bee Keeper.*

[The comb-guide is almost a necessity with a good many bee-keepers because they think

they can not afford foundation. To add an extra comb-guide to the bottom of the  $\frac{3}{8}$  bar is carrying things a little bit too far the other way. We seriously question whether, if the bee-spaces are correctly maintained, there would be any trouble with burr-combs on new molded top-bars. By way of a compromise we are preparing to make a slight change, so that the side of the bars will be nearly if not fully  $\frac{3}{8}$  inch wide, and yet leave a sufficient comb-guide for the fastening of foundation in the regular way, or for a guide to comb-building in the old-fashioned way. This is a change which will not interfere in the least with any thing already in use. So far as our own experience is concerned, we would just as soon, and perhaps rather, have the molded top-bars the same as we have sold for the last year and a half.]

## HEADS OF GRAIN

### FROM DIFFERENT FIELDS.

#### HOW TO MAKE A SUN WAX-EXTRACTOR WORK WITHOUT ANY SUN.

"Necessity is the mother of invention." In the winter of 1889 we made a business of taking bees out of buildings, churches, schoolhouses, dwellinghouses, etc. Dr. Finegar's house turned out 18 colonies and 1300 lbs. of extracted honey. The weather was cold and wet, and the large sun extractor was of no use, and some larvae in the honey had commenced to sour. "What shall we do?" Lewis George said. We went to the tinshop and had a hot air furnace made that cost \$2.00. This was connected by a hot-air pipe,  $3\frac{3}{4}$  inches in diameter, to the sun extractor, the pipe being attached to the lower end, under the screen. We made a hole for draft and ventilation on top of the screen, in the other end. Into the extractor we put a thermometer, built a fire, and stopped looking for the sun. We could heat that mass into a pudding, stir it up, breaking all the cells, and take it out as dry as chips; most of the pollen went through the screen; most of the honey was candied; but the heat was so intense that the bottom dropped right out of it. The honey and wax came out together, and wax caked on top.

EMERSON BROS.

Santa Ana, Cal., Jan. 3.

#### THREATENED CONFLICT BETWEEN FRUIT-RAISERS AND BEE-MEN.

The relation between the fruit and bee men is becoming critical; threats of poisoning are resorted to by the former, and no doubt, to my mind, have been carried out to some extent. I thought I would try to educate some of the progressive fruit-men in regard to the great value of bees as fertilizers, and help matters from this quarter; so I sent GLEANINGS, No. 18, 1891, with Prof. Cook's article on "Bees as Fertilizers," to Prof. Hilgard, State University, for his indorsement, which would have great weight with the fruit-men here. It was referred to a Prof. C. W. Woodworth, who replied as follows: "Prof. Cook is an authority on bee-keeping, and I think what he says can be relied upon; but we must not forget that there is in California a very different problem in the case. It is the injury to ripe and drying fruits that the fight against bees is based upon."

I replied that we must not forget nor underestimate the great value of bees as fertilizers; how much fruit would set if it were not for the busy little bee? and is it not ripe fruit opened by birds and yellow-jackets, and in a fermented



state, that the bees are found to mostly work upon? Has the experiment station experimented any to determine the relation of bees to fruit?

I am afraid we shall not get much aid from this source; but I am going to use Prof. Cook's article to the best advantage, if you have any of the leaflets left.

ARTHUR HANSEN.

National City, Cal., Nov. 20.

[Yes, that is the thing to do; give each a copy of Prof. Cook's article on bee-fertilization, and in addition tell them that, in that progressive State of Michigan, the bee and fruit men have met together in convention, and each side acknowledged their dependence on the other. The fact is, the fruit-men of California should be willing to put up with a little annoyance from the bees during the ripe-fruit season, for the sake of the good the bees do earlier in the year while the trees are in blossom. If the bees were taken all away for a year or so, the fruit-men would be very glad to get them back again, just as they did years ago in Massachusetts. History repeats itself.]

INTRODUCING QUEENS—KONIG'S METHOD: DIRECTIONS FROM A CORRESPONDENT IN NORWAY.

Among the many methods of introducing, the following affords some advantages: No hive is to be made queenless; no waiting 48 hours, nor even 24 is needed, for the new queen can be immediately introduced to a strong colony, etc. All this is of interest with a valuable queen. The method here described I call the "Konig," as I have it from Mr. Konig, of Lodz, in Poland, to whom I sent some Norwegian queens this summer.

When a queen arrives, prepare a hive for her with one honey-comb *without* brood, and two empty combs and a drone-trap before the entrance. Put the queen into a wire cage on the honey-comb; take one comb with bees from a hive (look sharp for the queen; if she is there, take another comb instead of it); brush the bees off before the entrance of the new queen's hive. In like manner go to another and a third hive, etc., and take a comb as before, and brush the bees off. The drone trap will catch a queen if such a one by mistake should follow the brushed bees. The new hive will then contain bees from three or more hives mixed together; the queen is set free after 24 hours, and is always cordially accepted.

ENGVALD HANSON.

Aamli, Norway, Oct., 1892.

GOLDEN'S SALT CURE FOR BEE-PARALYSIS CHALLENGED.

I read the discussion and experiments of T. S. Ford and J. A. Golden on the subject of bee-paralysis. Please allow me to ask some questions in regard to the subject. First, might not the bees have been poisoned by visiting fruit-trees that had been sprayed too soon? If not, might they not have got the poison from later spraying, where honey-dew was abundant? Might not the cure of Mr. Golden have been a success on account of less poison in vicinity, in the solution used in his case? Is salt an antidote for mild poisons? Do not bees go out of the hive to die?

ALLEN BARTOW.

Milan, O., Dec. 5.

ANOTHER AND SHORTER WAY TO KILL SKUNKS.

Mr. France's method of killing skunks is amusing. To kill a skunk, take a stout stick, of convenient length, not over two feet. Walk slowly to within reach of the skunk, and kill him by a blow on the head. You can then carry him several hundred yards before the slight involuntary discharge of "smudge," which always takes place about five minutes after

death. Young skunks can be taken alive by hand, without danger. I give all of the above from experience.

GEO. M. WERTZ.

Johnstown, Pa., Jan. 7.

[Your plan will surely work if you can get within hitting distance. Still, if you have "been there" you know.]

HOW PAPA SHIPS EXTRACTED HONEY.

I will try to explain how papa ships extracted honey. We usually ship in tin buckets holding 12 or 25 lbs. We punch a hole through the lid, to give the air free passage. Then we stretch a thin wire tightly across the lid, to keep it from getting off, and to strengthen the bucket. We have shipped honey in this way for years, and it always arrives in good order. Our honey crop is very poor this season.

FRED H. GRAEPER.

Westphalia, Ind., Dec. 5.

[Good! let's hear from more of the little folks. If your papa doesn't like to write, and he has something good and useful, tell us about it.]

A NOTE FROM OUR SPECIAL ARTIST; THAT WILDER MAN; WHIRLWINDS, ETC.

A. I. Root.—Say! Is Hutchinson or Hasty, or any of the other bee-men, inquiring after my address? Don't give it them. After reading that Wilder letter, and seeing the way Rambler wiggles out from under the tub by a distant whack at his poor artist confederate, I am beginning to feel alarmed; and as my means of defense are extremely limited, I confess I don't know what to do. Perhaps the whirlwind is coming this way. May be some of the others will be after me now that Rambler has *sicked 'em on*. I didn't think that of him. If he "pours oil on the troubled waters" in the way that Wilder man says he does, well, what's to become of me? I am stationary, while he is skipping all over this beloved country. I can hardly bear my own load; yet he wants to lighten his so he can skip out still faster. But really as to that tongue, I expect soon to write a book on tongues, and with, perhaps, the assistance of the GLEANINGS people, we will explain something in regard to Wilder's tongue.

In haste,

GOLDENROD FROM FLORIDA.

Mr. J. Pierpont Murdock, Oxford, Fla., sends me specimens of goldenrod — *Solidago tenuifolia*, with a small bottle of the honey from it. He says that in October or November, some colonies gathered 65 lbs. from it; and that it grows two feet high, and bears a profusion of yellow flowers. The prairies are covered with it. He thinks the honey the finest he ever saw. The leaves of this goldenrod are very narrow, as the specific name indicates. The honey is *very white*; indeed, it has no more color than water, and is of excellent flavor. We are used to seeing golden honey from these flowers, and so this is very interesting. Is all goldenrod honey from the South so light? A. J. Cook.

Agricultural College, Mich., Dec. 19.

YERBA SANTA.

Mr. Root.—In your issue for Dec. 15 our friend Rambler spells "yerba santa" "herba santa" — a change in the first letter of the name only, and one which does not affect the pronunciation to any extent. This herb, or bush, grows all over the State, so far as I know, and is plentiful hereabout. I have not undertaken to write at this time to correct Rambler's spelling of the word, but I have taken this occasion to connect this plant with San Francisco's original name. The city spoken of was called by the

first white settlers—the Spaniards, or Mexicans—Yerba Buena, which, when translated into English, means “good herb.” Yerba Buena was also given to the island now called Goat Island, which lies between Oakland and San Francisco, and almost in the track of ferry-steamers plying between the two principal cities of the State. Unlike “yerba santa,” or “holy herb,” yerba buena is a trailing vine of the mint species. It is much used by the early settlers (the Spaniards) as a medicinal plant—principally, I believe, for curing headaches. I would also remark that they use, for the same purpose, the skin shed by snakes, placing it inside their hat-band; but with what efficacy I am in doubt. Yerba santa, according to the Spaniards, is also a wonderful healing herb. Yerba buena is also used as a condiment in cooking, by old and new settlers. It grows everywhere in the hills and mountains, and is quite a honey-secreting plant.

Temescal, Cal., Jan. 4. W. A. PRYAL.

#### THE OHIO BEE-KEEPERS' EXHIBIT.

A few days ago, noticing that other States were preparing for the World's Fair honey exhibits, we were wondering what Ohio was going to do, if, indeed, she would do any thing. Shortly after, a card came from Dr. Mason, asking whether we would be at home during the next few days, as he wished to talk over World's Fair matters with us. We promptly notified him that we would, and that it would give us great pleasure to see him. He came and thoroughly canvassed the whole situation, and the result is, that he has prepared a statement for print, that will fully explain itself:

#### OHIO'S WORLD'S FAIR.

*Friend Root*.—The Ohio Board of Commissioners for the Columbian Exposition at Chicago has requested me to collect, and put in place for exhibition at Chicago, Ohio's wax and honey exhibit; and I should like, through GLEANINGS, to ask such Ohio bee-keepers as have either comb or extracted honey, or nice beeswax, to spare, and are willing to help make the exhibit, write me *at once* for particulars. If any of those who read this know of others who have honey to spare will kindly give me their names and postoffice address they will confer a favor on our industry. It does not matter what kind of honey it is, for we want all kinds that may be produced, such as white, alsike, red, and sweet clover; basswood, buckwheat, strawberry, raspberry, aster, goldenrod, etc.; but if we wish to show sugar honey we shall probably have to go out of Ohio to get it.

Parties furnishing honey need be at no expense in the matter, except to send me a postal for further information. Please don't put this matter off for a moment, for we have no time to spare; and don't think that others will attend to the matter and furnish the honey, etc. I have personally made some effort to secure honey from bee-keepers, and find but little to be had.

Space for our exhibit has been secured, and our State Commissioners are not only willing but anxious to do all they can to aid us; and it now rests with us as bee-keepers to make our exhibit an honor to the State. We don't want to “take a back seat,” but be at, or *very near*, the head of the column, in just the place to which we are justly entitled. We need not be afraid nor jealous of California bee-keepers, with their splendid and diversified honey product; nor of Canada, with her splendid honey-producing area, nor of any other State or country, but aim to do the best we can for Ohio, and do honor to ourselves and our industry by honestly placing on exhibition a correct representation of our products.

Now, please let me hear from you at once, and tell me what you have to spare, and ask all the questions you may desire. Address me at Auburndale, Ohio.

A. B. MASON.

It gives us great pleasure to know that the doctor has charge of the Ohio exhibit, and we are very sure that, if bee-keepers will only do *their* part, Ohio will stand pretty near the front, if not actually in the lead. We availed

ourselves of his knowledge and experience in the preparation of our own special exhibit of bee-keepers' supplies. We set it up in our establishment, and this afternoon, after all had been arranged satisfactorily to him and ourselves, photographed it. Now *any one* can arrange it by simply following the photograph.

#### GOOD TIMES.

I suppose you are always pleased to hear of good times. The past season in Hastings Co. has been a good one. I increased from 22 to 42, and got 2600 lbs. of extracted honey; 1200 lbs. of clover, 1000 lbs. of basswood, and the rest buckwheat and goldenrod. Season closed September 15. Extracted clover and basswood sells at 9 cts.; buckwheat, 7. I put my bees in the cellar Nov. 20.

JEREMIAH W. WILSON.

Roslin, Ont., Can., Dec. 21.

#### PECOS VALLEY GOOD FOR A HOOSIER.

I am going to move to Pecos Valley. I spent nearly ten months of last year there, and do not agree with Mr. Craig, of Abilena, Texas, about its not being any place for a poor man, as I belong to that unfortunate class. I think I was there long enough to know something about the country. It may not do for a Texan, but it will do for a Hoosier.

Hillsdale, Ind. C. F. BASSETT.

#### SCARLET CLOVER.

One of our implement-dealers in this place is offering for sale scarlet clover (*Trifolium incarnatum*). They say it is an excellent honey-plant. Please tell us what you know about it, as many farmers and bee-keepers will be anxious to know.

W. G. FILLSWORTH.

Avoca, Ia., Nov. 5.

#### THE TWO KINDS OF GRANULATION.

Mr. Hutchinson says that honey will granulate the same as sugar fed to bees. I say it will not, as the sugar granulates hard and flinty, the same as it did before it was fed, while all the honey I ever saw was soft when candied.

Clinton, Ill., Dec. 26. HENRY WILSON.

“Lovely GLEANINGS” is what we said after reading the number for Dec. 15, which was something of a holiday number. It well deserves to be called the illustrated bee-paper of America, as almost every issue contains such beautiful pictures. May its subscription-list become longer and longer, and its “shadow ne'er grow less,” is the New Year's wish of the old *American Bee Journal* for our Brothers Root.—A. B. J., Jan. 5.

[Many thanks, Bro. York.]

#### A CELEBRATED ACTRESS-FARMER.

A few days ago we ran across the following paragraph, which appeared in the *Agricultural Epitomist* of the current year. We do not know how much truth there is in it, but we reproduce it here in the hope that some of our subscribers may enlighten us further.

Madame Modjeska, the famous actress, lives on a ranch which lies at the foot of Santiago Peak, in California, 15 miles from a town or railway. She is an enthusiastic farmer, and takes great pride in her live stock, of which she has a large number. Her herd of shorthorns numbers over 400, and she has a singularly proportioned flock of Angora goats. These animals she has found to be very profitable.

Having invested in the ranch a large part of her savings from her theatrical earnings, she naturally looks closely after it to see that it pays a proper dividend on the capital.

Another branch of her undertaking is bee-raising. She has 600 hives of Italian bees, and sells a great deal of honey every autumn, the mountain meadows around her homestead being carpeted with the flow-

ers of the white sage, which are credited with producing the finest-flavored honey in the world. Madame Modjeska rises at six o'clock in the morning and is out all the forenoon superintending the management of her cattle and bees.

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## OURSELVES AND OUR NEIGHBORS.

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Blessed is the man whose strength is in thee.—Ps. 84:5.

It was about seven o'clock Saturday night. Ernest and I were alone in the office. All the rest of the busy workers had gone to their homes. The office was still and quiet, and even the machinery was still. Ernest and John are much in the habit of choosing these still hours for their correspondence. The former sat at the phonograph, with a handful of letters, while he dictated in loud clear tones the various answers to many correspondents. In order to have the phonograph come out clear and distinct, one needs to speak slowly and plainly, pronouncing the words very distinctly. I had finished looking over a seed catalogue, and listened a little while to the replies made by Ernest. It almost made one think of the farmers' institute, where the speaker answers the inquiries one after another, but makes his answers so distinct and clear that all can hear them, even when he speaks to a crowded audience. Saturday night I always take a bath before retiring, and I started down leisurely to the engine-room to open a valve, that steam might go over to the house. There are some little Roots to be bathed besides myself, so we generally commence rather early. As I went through the different rooms, so warm and comfortable, I reflected that, although it was below zero outside, no pipes had yet been frozen enough to do any damage, and we were well fortified in every direction for even more cold. An immense heap of coal lay in front of the boilers; steam pressure was up to 60 or 70 degrees; the wind-mill tank was full of water; the great cistern was full, and an iron pipe ran down to Champion Brook, where we find we get the best water for running our boilers. The huge steam-pump, with its massive pipes and cylinders, stood all ready to spring into action if an alarm of fire should be given. I was thinking about all our appliances, how nicely they work; and the thought came into mind, that perhaps some time I should look back to this period of my life, and possibly feel sorry that I did not thank God oftener when I had so much reason to be grateful. Yes, besides all these other things, I am enjoying a degree of health that I think I never knew before; for my diet is still by preference new milk, graham gems, and honey. By the way, I am gradually losing the desire for and the need of sleep just before dinner. I have tried to take my accustomed nap for several days; but I feel so bright that it seems to be no longer needed. "What is the reason you can not sleep?" asked my wife; and I replied, "Why, the trouble is, I am getting too healthy." "What a simple, insignificant medicine—new milk right from the cow! But let us get back to that Saturday night.

I had just opened my valve; and as I passed out of the door leading into the engine-room my eye glanced almost involuntarily to the three pressure-gauges attached to our sprinkling system and waterworks. Two of them are simply air-gauges. The pipes in our main buildings are filled with air instead of water, and no water ever gets into these pipes until some sort of fire opens the air-valves; then the water follows instantly. The air-valves indicated the right pressure of between 30 and 40;

but the middle dial—the one that registers the water pressure from the great tank on the hill—to my surprise and consternation showed only about 15 lbs. of pressure, instead of 22, its normal state. What in the world did it mean, that this pressure should be so much reduced on this icy-cold night? I hastened to the stairway, where I could call Ernest. He dropped his phonograph pretty suddenly, and hastened downstairs to examine the gauge. It seemed that it had fallen a little more by the time we got there. We got a lantern, and with nervous haste began making examinations. Every thing seemed to be all in perfect trim, and we could discover no trace of escaping water anywhere. After looking all over inside, we visited the hydrants by wading through the drifted snow to the points where they were located outside. The clean white snow covered every thing, and no sight or sound betrayed running water. Then I made a visit down to the new railroad. This is below all our grounds, and escaping water must sooner or later come over the bank down into the ditch beside the track. Nothing of the kind was seen. I went back and reported. Ernest suggested that it came from the tank on the hill, and that the water was so cold it froze up before it could get an eighth of a mile from the top of the hill to Champion Brook. I felt sure that this was impossible, but finally made a pilgrimage through the snowdrifts up to the tank (expecting every minute to find a flood of water and ice), and walked clear around it. That, like the rest of our apparatus, seemed to be in perfect trim. Then we went back to the boiler-room. The pressure-gauge showed that at least 500 barrels of water had got away while we were making our investigations, and it seemed to be going faster and faster. We had been hard at work for an hour. We were both sweaty, and I was tired out and beginning to feel symptoms of my old nervous troubles. The anxiety had much to do with it. But how could one avoid feeling anxious when the last drop of water must soon be gone from our tanks, and our water-pipes, on which we depended, would soon be empty and useless? Ernest directed me to watch things while he took a lantern and went for the engineer. He came, but was as much puzzled as ourselves. Once before, the pipe leading down to Champion Brook was, by some misunderstanding, left open, and the big tank on the hill drained off into the brook during one night. It seemed as if there was no other place in the world where the water *could* get away; but the valve was closed securely. I insisted it was broken; and, as a further proof, I was sure I heard water gurgling through the pipe. The engineer and Ernest said it could not be broken; and to demonstrate their belief they unscrewed a union that separated the pipe, and let me look inside. I was becoming more and more nervous, and incapable of using what little sense God has seen fit to give me. Just then it came into my mind with such vividness that it sounded as if somebody were speaking:

"Look here, old fellow. Does it not look a little inconsistent, after all your preaching and teaching, to see you in this fluster and worry? yet during the whole past two hours you have not even thought to ask for God's wisdom and for his guidance in a matter where you all seem to be inadequate to the occasion."

I felt ashamed of myself, and began to pray. The fact is, our system of water and steam pipes has so accumulated from year to year that it takes a man with considerable brains to keep in mind the uses and purposes of this vast complication of pipes and valves, little and big. Why, right around the steam-pump, where we

were standing, the pipes were so numerous that the whole engine-room from floor to ceiling, almost, is filled with a literal network of them. There are pipes innumerable, from the size of your finger to the great water-pipes connected with the steam-pump, as large as your body. Then there are valves, from the size of a silver dollar all the way up to those as big as the wheel of a Daisy wheelbarrow. Some of the latter it takes the full strength of a strong man to move. There are the live-steam pipes and the exhaust-steam pipes; then there are the water-pipes connected with the sprinkler system, and another distinct system of water-pipes to convey water all over the premises. No wonder we became demoralized. There seemed to be a sound of rushing water, but no one could find where it was. I remember of fearing that if Ernest, the engineer, and myself could not tell where the trouble was, it was not likely that there was a living being in the *whole wide world* who could help us any. Some of the pipes had been put in before Ernest and the engineer knew any thing about it; therefore it depended on my memory alone. There we stood, helpless. But the faithful, unfeeling pressure-gauge kept steadily falling, and in a little time more it would reach zero. My prayer was something like this:

"O Lord, we are weak but thou art mighty. We are helpless, but thy strength and wisdom are infinite. We come to thee acknowledging our need. Give us wisdom that we have not of ourselves, and help us to care for our property."

Of course, the prayer was only in my mind. No word was spoken. As soon as it was finished, the thought came into my mind, "Now, if help *should* come right off it would be only *another* instance of similar answers to prayer during the years that this business has been building and growing up." Then my faith began to rise. I had not found the text at the head of this talk just then; but the feeling came into my heart, very strong and vivid, "Blessed is the man whose strength is in thee."

Just at this crisis the engineer declared, "There is no leak at all."

Then Ernest added, "Why, look here! Put on the big steam-pump and see if you can get the accustomed pressure and hold it there."

The necessary valves were opened and closed, and in a moment we were ready to move the great pistons just as we would do in case of fire. All eyes were fixed, and we stood with breathless suspense as we watched the pressure-gauge attached to the pump. My heart began to sink, when the engineer said:

"Look out, boys! there is a tremendous pile of water getting away somewhere." But he added almost immediately afterward, "No! hold on a moment! All right! There she is!"

He let the pump work until the gauge showed a pressure of nearly 120 lbs. to the square inch, then stopped, and there it stood. The whole entire sprinkler system of all our buildings, and the hydrants over the whole of our grounds, were tight and sound. This located the difficulty somewhere between the tank on the hill and the factory. Said the engineer, "Your pipes are frozen up."

"Well, I declare!" suggested I. "If the pipes are frozen solid, the effect *will* be almost exactly the same as if the *water* were getting away."

And then we all drew a breath of relief. But where could they be frozen? They were deep under the ground, and the ground was deep under the snow. Then Ernest suggested, "It is the pipe under the big tank on the hill. We must get in there and build a fire at once."

Now, I shall have to explain, that, as the overflow-pipe was not sufficiently protected during the excessively cold weather, it had

frozen up about two weeks before. The consequence was, the tank had become full, and had run over. Icicles as large as an ox hung over the sides of the tank, and the water had run down before the doors, and frozen *them* fast. It was a critical time, however, so I hastily decided what to do. One of us got a big sledge to open the door. Of course, the door had to be opened so it could be closed again quickly. The engineer took the hand-sled, with a couple of baskets of kindling, and neighbor H. was summoned to lend a hand also. I started on ahead with a sledge, for I preferred to smash the door in myself. I looked back and saw the engineer in a huge snowdrift, with his sled and kindling turned over, and neighbor H. just coming to his relief. As I expected, the bottom of the door could not be moved—not even with a sledge. Somebody suggested that the door would have to be broken; but I declared not so. The zero air must not get in there many minutes at most. The top was loosened. Neighbor H., the engineer, and the rest, with strong arms sprung the door in until I thought I could squeeze through. I got half way through and stuck fast. I imagined to myself how it must feel to be a rat in a trap, and I *was* in a trap, sure; but after a little more exhortation to my comrades to bend every nerve and muscle, I wiggled through. Of course, the zero weather was getting in to freeze the pipes up harder, and they might burst.

"Pile in your kindling, boys," I sang out; and by the time they got it through the crevice I had lighted a piece of waste saturated with coal oil. I threw it against the big iron pipe, piled on the kindlings, and then we had blaze enough to see that every thing was frozen up solid, sure enough. After I had got a big fire to going (as it was on the bare ground it was perfectly safe) I chopped away the ice from around the door, so as to let in the rest of the crowd. They were about as anxious to get out, however, as they were to get in, because of the smoke. The ice soon began to give way. Ernest thought it would take nearly all night to thaw out the ice; but I had faith to believe that the pressure-gauge in the factory was taking a back track already. I thanked my helpers, and told them they could all go home, except the night watchman who sleeps in the factory. He volunteered to see the pipe was thawed out. I was a little behind when they reached the innocent piece of mechanism which had caused such a hubbub; but the joyful news was soon proclaimed, "Hooray! hooray! the pressure is right already!"

We sat down and rested a little, and then went home. I was wet with perspiration, notwithstanding the low temperature. In our search we had been obliged to be first outdoors and then inside, in such rapid succession that we did not dare to take off our overcoats, overshoes, and fur caps. I had my bath after all, and went to bed a little before midnight, rejoicing in another sharp and clear evidence of the truthfulness of the many Bible promises, to the effect that the great Father above is "a very present help in trouble." The next morning, at our responsive readings at church, my eye and ear caught our opening text, "Blessed is the man whose strength is in thee," and you may be sure my heart echoed an emphatic amen.

Let us now look at another picture. Some time ago an old acquaintance got into trouble with a neighbor in regard to a division-line fence. It ended in a quarrel, and in a fit of anger my friend transgressed the laws of our land. Although a man of many excellent qualities, he has, like the rest of us, peculiar individual traits. One of these is, that he has

always been exceedingly independent. From childhood up, he has seemed to have a special fancy to take care of himself, and he has lived to be nearly sixty years old, without "asking any odds of anybody." I have often talked to him about this trait of character, and have told him that it would get him into trouble; but he seemed to think he was sufficient for any occasion that might come up. After the quarrel with the neighbor, he told me what he had done. I felt pretty sure that he would have to go to prison for it; but he flatly declared that he *wouldn't* go. I labored with him long and earnestly, and finally was rejoiced to hear him say that, if his lawyers were disappointed, he would be a law-abiding citizen as he had always been. I think his lawyers did very wrong in telling him that there was not any danger at all, and that they would get him clear, without any question, provided he could furnish the *requisite means*.

I now want to make some extracts from a letter he wrote to me while in prison. He does not know that I am going to do this; but I am sure he will pardon me when I tell him that his honest confession may be the means of helping many others who have got into trouble just as he did; and it may be the means of *helping* many others out of trouble in just the way he has come out or is coming out. You will readily gather from his letter that he has heretofore been an unbeliever. In fact, were it not for the fact that I know his handwriting so well, and his way of speaking, I might think it almost impossible such a letter should ever come from him at all. Of course, I have exhorted him again and again to say, "Thy will, not mine, be done," and bow in submission to Him who holds our very lives, and each breath we draw, in the hollow of his hand. Here is the letter that brought tears to my eyes as I read it:

Dec. 10th I lay in my cell, sick and discouraged. I said to myself, "I have always been independent, and relied on myself, and now I do not know what to do." I knelt down and offered to follow God hereafter, and leave every thing to him, if he would tell me what to do. Immediately he said, "Get back into bed and stay there." Pretty soon the cell-tender came along and said he would have to take my name and number to the doctor. After a while the doctor's assistant came and gave me some medicine for my cold and cough; and during the day they sent me some crackers and tea. Next morning I was told by the Lord to stay in bed; and the cell-tender reported me to the doctor again. He sent word to me to dress myself and come over to the hospital. I got upstairs into a warm room, with a good big coal fire, rocking-chairs, and good beds. I undressed and went to bed. I had not been by a fire for months, and needed good nourishing food. I lay there for several days, but finally got able to be up Christmas. The doctor and some others got up a fine dinner for us; and after dinner I felt so grateful that I could not keep still, so I got up and expressed my gratitude, and ended by giving the donors a vote of thanks. My breath was short, and it was with great exertion; but I was listened to with respect.

You may think it a little strange, the expression he uses, where he speaks of the guidance of the Holy Spirit; but knowing him as I do, and having had many similar experiences of my own, I think I can help our readers to look at it as rational and reasonable. Perhaps for almost the first time in his life he has decided to put his own will and judgment aside; it is not to be *himself* any more, but the *great God above*, who *directs* what to do. *God* is to be the teacher and *he* the pupil; and all alone by himself he makes that, perhaps, almost his first prayer. He promises to follow the teachings of the Holy Spirit. Now, what would the Holy Spirit be most likely to direct under such circumstances? Some of you may perhaps think it

hard to believe that he would get any direction at all; but we have plain Bible teachings for it. "Him that cometh to me, I will in nowise cast out." This poor penitent soul had got back, like the prodigal son; he is *waiting* for orders. Our friend tells it as though verbal orders were given him. Perhaps I may add, the quotation-marks are my own. The first command of his new teacher was very simple—"Get back into bed and stay there." That was all God wanted him to do for the present. My experience has been with many like cases, that the first thing a new-born soul is called upon to do is always very simple and easy. He obeyed as well as he knew how, and then commenced the workings of the vast machinery of the universe to bring out the full answer to that brief, simple prayer, and lead that new-born soul from the darkness of unbelief, into the light of a Father's love. First a humble servant of the government comes and looks after this particular patient. He decides, and it happens the decision comes for a wonder on this particular morning. No, it did *not happen*, either; neither did it *happen* that the doctor's assistant came soon after with some medicine, and then with some simple refreshment. The next morning, you will notice, he again asks for orders for the duties of the day; yes, even if you are on a sick-bed, God is pleased to have you come to him with the opening of a new day, saying, "Lord, what wilt thou have me to do?" The directions are plain and clear, as they were the day before: "I was told by the Lord to stay in bed." He obeyed again, and in a little time he was rewarded by a summons from the doctor to come upstairs into a warm and cheerful room. Oh how many times I have seen a new-born soul invited to step up and out of the miry clay, and put his feet upon the rock, as David speaks of in the second verse of the fortieth Psalm! After this there followed almost three weeks of confinement to a sick-bed. By Christmas time, however, the doctor and others concluded it would be safe to give him, with some others, doubtless, a good dinner. His gratitude for this kindness is just what we might expect. One of the best evidences that a soul has come from darkness into light, is a feeling of gratitude and thankfulness to the world about him, as well as thanks to God. No doubt, all present at that little dinner were touched by his few words spoken in weakness. Perhaps this incident indicated that it would not be too much of a *test* and *task* for his Christianity to invite him to ask a blessing at the table. See the following:

New Year's day we had another nice supper, and I was requested to ask the blessing. I shall never forget it, and I guess the other prisoners will never forget it either. With the tears running down my cheeks, and in a trembling voice, I said, "May the blessings of Almighty God rest on this bountiful repast, and the get-up of the same; and may the workings of Providence so shape things that each of us, before the close of another year, may be free, and become good and law-abiding citizens of the United States, and be with our friends and families."

I wonder if all the prisons in the land are so fortunate as to have such wise and *godly* officers as the ones mentioned here. Like a true soldier he did not flinch, nor think of evading duty. It must have been a great trial for him to ask this blessing; for, if I mistake not, he would hardly have consented, a few months ago, to *permit* a blessing to be asked at his table; but we may be sure he felt happier and better for a good while afterward. God honors those who are not afraid to acknowledge him before men. "Whosoever shall confess me before men, him will I confess also before my Father which is in heaven."

Now, here comes in another peculiarity of this friend of mine. He has always been ready to take care of himself as I have told you, and, as a natural consequence, it is very hard for him to own up that he has been wrong. From what I know of him, I should expect it to be hard for him to let go of all his unbelief at once. He has read so many books and papers published by unbelievers that his sympathy still hangs with them, and probably will. Never mind. It is not so very strange if he is prepared to give a good many of us a just and right reproof. Read the following:

It hurts me to hear a man abused because he is an infidel. It hurts me to hear a Christian quote men as *infidels* because they are bad men. There are very few infidels in this prison.

The next is exceedingly characteristic of him:

I do not feel like a man yet, but like an infant feeling its way. But one thing is sure; and that is, I have made a promise to God to give one-tenth to him, as he shall direct, as soon as I get out of here, if I ever do.

He has always been liberal, even to a fault; and it was just like him to pledge a tenth of his income; but, true to his nature, he insists that God, and God only, shall direct how that tenth shall be used. No human wisdom is to say to what church or to what Sunday-school, or whether, in fact, it is to go to *any* church or Sunday-school; but the Holy Spirit is to guide and direct. The very best part of his letter, to me, is that point where he says he feels like an infant feeling its way. He is a child yet, and must be led and directed as a kind parent leads and directs a little child. I wonder whether he has found it in his Bible where it says, "Except ye become as little children, ye can not enter the kingdom of heaven." I am sure I need his kind reproof, where he speaks about harshness and lack of charity toward infidels. I have sometimes thought I would try not to use the word "infidel" any more. Now, then, let us go back to this brief little sermon that comes from one of the prisons in our land.

And now, dear friends, let us not abuse others because they can not see as we do. Remember kindness and charity. May the blessing of God rest upon you all in the prayer of your old friend.

Truly, "Blessed is the man whose strength is in the Lord."

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## NOTES OF TRAVEL

FROM A. I. ROOT.

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### WASHINGTON, CONTINUED.

There was so *much* to see in the city, and the bee-keepers, like myself, were so anxious to see the sights, they crowded the business along on the evening of the second day, and, by universal consent, devoted the next day to sight-seeing. Our good friends Benton and Danzenbaker volunteered to go as guides. Our first point of interest was the Capitol building. I was somewhat disappointed that none of the crowd seemed to find as much to hold their attention in that one piece of statuary as I did. It is not to be wondered at, because statuary and wonderful paintings abound everywhere in and about the Capitol building. There is no use in trying to describe the Capitol of our United States. There have been many criticisms, no doubt, in regard to the amount of money expended on the edifice. But we may philosophize a little, I think, as the boy did when he said the Fourth of July comes only

once a year. There is only one Capitol building in the United States, and surely no child of Uncle Samuel would want to see it a shabby affair, or very much behind the State buildings at the capitals of many of our States. The dome is visible for many miles in every direction, and no wonder; for it is 180 feet in height. The rotunda is 96 feet in diameter. As you go inside and look up it seems almost like the starry heavens above; but here, in place of the stars, is a magnificent painting, or collection of paintings. I have been told how many thousands of dollars this single painting cost, but I can not remember now. Artists are still at work, and nobody knows when it will be finished. All about this great central room are also wonderful pictures commemorating different events in our nation's history. Our guides kept admonishing us that, if we stopped to look so long at some single piece of work or statuary, we should never get through it all; and as we passed from room to room, whenever we happened to come back into the room we had visited before, we found just as much of interest and wonder as we did the first time. We were a good deal like a pack of innocent juveniles. We kept looking and staring everywhere; and our comrades kept admonishing us. "Oh! you need not stop there, for you have been there already. Come over this way." And so it was. I am not politician enough to give the names of the different rooms. I remember something about the Senate Chamber and the Hall of Representatives; marble stairways without number; wonderful pieces of architecture, besides the paintings. The part of the building devoted to the library was of interest to me. The books and periodicals have now accumulated in such vast quantities that a new library building of gigantic dimensions, as it seemed to me, is being rapidly pushed forward to accommodate the volumes. We did not go into the White House, because somebody was sick there, and a card was turned so it showed, "No Admittance to Visitors." This White House was partially burned by the British troops in 1814; and to restore its blackened walls, they were painted white—hence the name, White House.

I was greatly interested in the greenhouses and the botanical gardens, as a matter of course; and the sight of pine-apples growing and ripening, even though we had an intense freezing temperature outdoors, was a novelty indeed. This particular greenhouse was built, it seems, to test new varieties of pine-apples. Now, I had always supposed that a pine-apple was a pine-apple, and that that was all there was to it. But how many kinds do you suppose the government is testing? Why, there must be forty or fifty—may be a hundred. What is to become of us if every thing is to continue to develop and amplify itself, and spread out after this fashion? We have been condemning seedsmen's catalogues because they had thirty or forty varieties of peas, as many of tomatoes, and so on with every thing else; and other fruits have got to be put through a similar course of training. Pine-apples, oranges, and even lemons, are to have new varieties until their names are legion; and just now there is not only talk about having oranges and lemons, without any seeds, but apples and pears, and even persimmons. It is too much trouble, you see, for Young America to get the seeds out and throw them away. But, "Here! come on!" I imagine I hear the guide saying, because we speculate too long on some one art or industry.

Somebody asked if I wanted to see the fish. To be sure, I did. I always want to see fish. Fishes come next to flowers. But even when I expressed my willingness, I did not dream that

we were going to be treated to a glimpse from the depths of the sea. A room full of the aquariums, and the usual accessories of fish-hatcheries, first enlisted my sympathies and interest. Then somebody suggested that we should go down into a sort of cave or grotto. This cave is under ground, and all the light that comes in comes through the aquariums arranged around the sides of the room, up near the ceiling. The sunlight strikes the surface of the water, and then comes through the water to light up the low darkened room. This seems to be something new in the line of aquariums. It was new to me, any way. The fishes and the marine plants came out in that subdued and refracted light through the water, with startling distinctness. I thought I had seen beautiful collections of ferns before; but I never saw any vegetation in the open air that could compare in beauty of form and coloring with this vegetation of the mighty deep. Most of us have admired the colorings and markings of various gold and silver fishes; but the fishes collected here are wonderful beyond description. In some of the museums we saw birds of paradise; but here were *fishes* of paradise, promenading and sailing about among the gorgeous fernlike mosses and shrubbery. To add enchantment to a scene that seemed almost a dream already, soft fleecy clouds were floating through the briny deep—I mean the salt water in these glass cages. When I asked for an explanation of those clouds that rolled so leisurely through the water and among the fishes, I was told that it was simply small globules of air in fine subdivision. On a foggy morning, microscopic particles of water float through the air we breathe. Well, in the ocean—at least so it seems—similar microscopic particles of air float in clouds through the water; and the effect I admired so much was produced very simply by letting a fine stream of water, under pressure, shoot down into the aquarium. The slender stream, in shooting down to the bottom of the glass tank, carried minute particles of air along with it, and these floated away in cloudlike bodies as they slowly came to the surface. I made up my mind that such an arrangement must be very soon a sort of annex to that wonderful new greenhouse that works for nothing and boards itself across the street from where I write. Well, I have not got at it yet.

Most of the crowd kept expressing a desire to visit the Treasury of the United States. Somebody said that Uncle Sam was kind enough to let his children handle a million of dollars just a little while, to see whether it would make them feel happy, you know. Well, I was not very anxious, for I knew beforehand that the million of dollars would not make me feel happy a bit. The trick I had learned, of how to make an underground aquarium, was worth more to me than holding the million of dollars. Nevertheless, we hustled off to the Treasury. We saw smart, nice-looking girls counting out sums of money so rapidly that it looked like a sleight-of-hand performance. Then we saw them printing bank notes, with great numbers of beautiful clean printing-presses. And, by the way, the biggest part of the work of making money, and handling it, in the Treasury department, is in the hands of the women-folks. I almost had a mind to feel hurt about it, for it looked to me as if Uncle Samuel was just a little partial to nice-looking girls, or else he was afraid to trust his boys with so much money.

By the way, I want to say right here that I was exceedingly gratified to see how much pains is taken in Washington to let every American, or anybody else, so far as I know, go everywhere and see how every thing is man-

aged. It reminded me of the words of our Savior, who said to his enemies, when they tried to make up some charge against him, "In secret have I done nothing." And it looks to me as if it were just that way in Washington. Placards were put up in various places, to the effect that visitors must not offer fees of any kind to any of the guides or employes of the government, for they would not receive them, even if offered. Those who talk loudly of the extravagance and trickery of our government should go and see how every thing is open to the eye of Columbia's children.

In the Treasury department it was very much as it was in the Capitol—there was so much that was curious and wonderful, the guide could not get us to "move on." Finally I began to think I would rather see less, and understand it, than to see so much and not know what I had seen. I felt as did Josh Billings when he remarked, "What is the use of knowing so much, when so much you know *isn't so*?"

Just at this time Mrs. Root began to admonish me that we were getting behind. "Oh, no!" said I, "we are not. There they are." But she insisted that that was not our crowd. You see there were a great many other crowds of "innocents abroad," like ourselves, but I saw friend Hutchinson, of the *Review*, following in that crowd, and I concluded he was wise enough and big enough to know what he was about; so we just rested our faith on him; but it transpired that he was following a lot of strangers instead of our own people. Then there was a quandary. We looked here and there, up and down aisles almost a quarter of a mile long; ran upstairs and downstairs, and then W. Z. H. very kindly volunteered to find the crowd and bring them back if I would just "stand right there by that post." Then he dived down into a dark-looking stairway, and that was the last of him. When we got pretty nearly ready to feel as if we had been cruelly wronged, they burst upon us, laughing at our discomfiture, and making fun of us because they had had the privilege of walking around the 25 millions of silver dollars, and we didn't. It turned out afterward, however, that they did not see the dollars at all—they saw only the boxes that somebody said contained silver dollars. After that I saw a lot of folks holding a bundle of papers that a white-haired kindly-faced old gentleman was passing from one to another. And then friend Danzenbaker said, "Why, look here; Mrs. Root wants to hold a million of dollars. I know by her looks." One of the bee-men passed the bundle over to her, remarking, "There! that is just my luck. Money has been slipping through my fingers all my life, and this time I have actually let slip a whole million before it did me a particle of good." Mrs. Root seemed to enjoy handling a million about as much as the rest of us. Oh no! it was not *silver* dollars, nor gold either, for that matter. Somebody said a million of dollars in silver would weigh about 31½ tons avoirdupois. You know silver is getting to be cheap nowadays, because Uncle Sam's children are finding so much of it scattered around through the Rocky Mountains and elsewhere.

After our visit to the Treasury building we went down to see that Washington Monument, that I told you about, in the morning. It is 555 feet 5½ inches high. I do not know why they are so particular as to put on that ½ inch, unless it was that some crank on accuracy might want to know just *exactly*. It is 55 feet square at the base; inside, 25 feet square. The foundation is 38 feet deep. The bottom of the foundation is 126½ feet square. The monument tapers ¼ inch to the foot. The elevator will

carry up only 30 or 40 people at once. Ernest could not wait their slow motions, and so he with several others went up on foot. The cost of the monument was \$1,300,000. It takes 9 minutes for the elevator to go up, and 8 minutes to come down. I went up with the women-folks, but they packed us in so tight I decided to go down on foot with the boys; and it did not tire me a bit, either. You see, they have lots of nice new milk there in Washington, as well as here in Ohio. That is why I was not tired. The weather was very cold; and after we had got pretty well chilled, up at the top of the monument, among the crowds of people that are there all the while, somebody found a corner where there was a stove. I can not tell you how one feels when looking straight down more than a tenth of a mile. One of the first things to surprise me was to see a lot of fish-ponds belonging to the hatchery, right close up by the base, while I felt perfectly certain there was no such thing there when we started up; and then friend Danzenbaker explained that, as you go up in the air, things seem to swing up close to the point from where you started. I happened then to look at a little lake that I had not noticed before.

"Why," said I, "friend Danzenbaker, why in the world do they let such little bits of children go out on the ice?" And then he told me they were not children at all—they were big people. Why, as they moved to and fro they reminded one of swarms of bees; and they scarcely looked any bigger than bees.

I am now going to find fault with just one thing I saw in Washington, and I am going to talk plainly too. It is not Washington I am going to find fault with, however, but it is Uncle Samuel's children. A great lot of them ought to be treated as children, no matter how old they are; and if Uncle Samuel would take them across his knee and give them a right smart spanking—every mother's son of them—I think it would be a blessing to our nation. I told you I went down from the top of the monument on foot. I am very glad indeed I did. There are 898 steps and 50 landings. At each landing you walk on a level floor about 25 feet. This rests you for the next stairway. Commencing at the 30-foot landing there are 199 memorial stones. These stones are beautiful pieces of marble, furnished by the different States in the Union. Many of them are furnished by different organizations and different industries. They are not only the finest contributions in the way of beautiful stones, but the carving and statuary are specimens of the finest workmanship from each of the different States. These stones, with their various inscriptions, are a museum of themselves; they also ought to be a source of pride and admiration to each of the different States. Well, now, what do you think we saw? Why, simply because those who planned and built this monument, that cost over a million and a quarter of dollars—because these good people did not see fit to put water-closets at convenient points on these long stairs, our American people have been making a water-closet of almost every corner on those fifty landings; and this disgusting liquid is running from top to bottom of this whole great monument, staining, defacing, and making disgusting these beautiful marble mementoes of the contributions from all over our Union. Perhaps one reason why it passes unnoticed is because people of wealth and influence, as a rule, go up and down on the elevator; but if nobody else has yet lifted up his voice in protest against this piece of vandalism, I for one feel like taking upon myself the responsibility of saying that, if the rest of the States in our republic can stand it, the State of Ohio can

not—at least, there is one individual who is not going to stand it any longer and keep still. I do not know that I ever undertook to speak for my native State before; but I do it now. Just one thing more:

In the Treasury department there is a beautiful park, with trees, shrubs, statuary, etc. All of the trees are named in both plain English and Latin. It seems to be a collection of the forestry found in the United States. I have not time to describe it any further now; but in this beautiful park there is a fine water-closet, for the use of gentlemen. Running water, that even in zero weather pours into marble basins, in order that every thing may be kept clean and sweet, is provided for visitors. How do you suppose they are used? Why, instead of appropriating the marble basins, made at so much expense for the very purpose of teaching us cleanliness and decency, the great public have been making the floors of this little building so nasty that one can not find a place to set his foot, should he attempt to reach these nicely arranged conveniences. I walked on the heels of my overshoes as I went in, and then I afterward cleaned them off on the grass as I went out. Shame on you, ye men and boys of America! I have taken up this subject once before, and there has within a few years been a great reform on the grounds of our State fairs as well as our county fairs; and our exposition buildings and other places are now generally well managed.

In the Smithsonian Institute, which I can not stop to mention here, there were beautiful rooms for the accommodation of both men and women. The guideboard read something like this: "Gentlemen's apartment for public comfort." In the inner rooms were plain directions and requests, so that it hardly seems possible that anybody who presumes to be half way civilized should be guilty of such things as I have mentioned. I believe it is true at the present time, that no hotel can make any pretensions to being first-class unless this thing is kept in bounds; but I have been told that, in many places, they find it necessary to hire a man to watch people constantly, and insist that they behave themselves like educated and intelligent beings, instead of like dumb brutes, that can not be expected to know any better.

Dear reader, you may think that I am more vehement in this matter than I need to be. But please remember that the cholera is now at our doors, and diphtheria has already left its blighting tracks in many a home. Another thing: Filth and indecency are one of the first steps toward immorality and crime. Cleanliness is next to godliness. Let us be more careful than we have been, and let us carefully watch our children, and train them in the ways of decency and order, while they may yet be trained:

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## HIGH-PRESSURE GARDENING.

BY A. I. ROOT.

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The outlook for high-pressure gardening at the present time is very favorable. Potatoes are high, and, in fact, almost all sorts of root crops are bringing good prices. Every thing in garden culture is promising a wider field than ever before; and the Spanish King onions are now readily bringing from three to four dollars a barrel. Yesterday a man came in to inquire about the price of seed, etc. He attended a farmers' institute two years ago, where I gave them a little talk on raising onions. He went home and drained a cat-swamp near his home, that had been an eyesore to himself and neigh-



bors ever since the country was settled. Then he made a rude cold-frame, according to my directions, and raised his own onion-plants. From half an acre of ground he raised 250 bushels of Prizetaker onions. The most of these have been sold at prices ranging from \$1.10 to \$1.25 per bushel. I purchased some of them myself yesterday, Jan. 24, paying him \$1.10 at wholesale. I mention this to show that they are not so bad a keeper after all, when properly handled. He has kept them just below the freezing-point, or as near that as he could without injury. About \$300 cash as the proceeds from half an acre of ground that had never been a particle of use to him heretofore! Who shall say that it does not pay to go to farmers' institutes? Of course, the neighbors laughed at him when he went to draining that swamp; and they made sly suggestions to each other, in his hearing, that onions would not be worth *any thing* after he had harvested his crop. When, however, these same neighbors paid him \$1.25 a bushel for his great big nice solid onions, then it was *his* turn to laugh. There are a great many things about the different varieties that none of us know any thing about as yet. Here is a letter that strikes several of the points:

#### SOME QUERIES ABOUT EARLY ONIONS.

*Mr. Root:*—I see by GLEANINGS, "Tomato Culture," and Greiner's work on onion culture, you are interested in growing onions from seed first planted in hot-beds. As I have a large trade in green bunch onions, I am led to believe the new method would be a valuable addition to my onion harvest. I have about seven acres of the Egyptian, or tree onion, from which I will sell this spring about thirty thousand dozen between April 1st and May 15th. Believing that I could commence pulling the seed onions soon after the last-named date, and thus continue to supply customers, I write to ask what variety you would use for green bunch onions. I shall want to plant  $1\frac{1}{2}$  acres to bunch while green, and one acre to remain until ripe.

I should also like to know whether I should have to use any onion sets (planting them in open ground as early as will do), to fill up any gap that might occur between the last of winter onions and first of plants from seed onions; or will the latter make a merchantable bunch onion as soon as the sets? I have found none of the above questions answered in GLEANINGS or other works. If sets are to be used, what variety would be best—those grown from seed the year previous, or White Multiplier, or other variety?

The information given on high-pressure gardening alone is worth more than the price of your journal. C. W. POTTENGER.

Kankakee, Ill., Jan. 12.

[Friend P., I would use the White Victoria onion for your purpose, and I would start them in the greenhouse right now. Get them as large around as a leadpencil, or still larger, before you put them in the open ground. If you have sash enough, a few of them could be hurried along by putting them, say, two inches apart under sash. Onion-sets will, of course, give you onions earlier than seeds sown in the open air, but not as early, according to my experience, as large strong plants raised in hot-beds or in greenhouses; besides, onion-sets are so expensive that I am quite certain that onion-plants started in the greenhouse are going to take their place very largely. I suppose the White Victoria sets would be about the best for your purpose. I have had no experience with the White Multiplier or White Potato onions. Can some of our subscribers give

friend P. and the rest of us some more points in regard to this question?]

#### RAISING LIMA BEANS UNDER GLASS.

*Friend Root:*—As you have a clayey soil, you no doubt have had the same trouble with lima beans that I used to have; so I will give you the benefit of my experience. After trying all the methods advanced by others to secure a perfect stand, I concluded trying planting in cold-frames and transplanting to patch. The first experiment was with sods cut into cubes 4x4x4 inches, with two beans placed on each sod, and covered with one and a half inches of pure sand. The experiment was so successful that the next season some "new features" were added. The frame is a permanent fixture for the bean-patch now. About the last week in April the seed is placed in four-inch pots: old fruit-cans that have been melted apart; oyster-pails, or almost any portable device by which they can be transferred to the patch.

Trouble? Think how your heart has sunk, as you have looked over your patch after a cold rain, and found, on breaking the crust, that half of the beans had rotted, and half of the other half had broken off getting through the ground. In the cold-frames you can get from one to two weeks' start in the spring; can laugh at a cold rain, or even quite a frost; prepare ground, plant field, stake, and commence cultivating, all the same day if you wish. Fussy? Try a few next season.

Many persons lose a great deal of the "deliciousness" of the lima bean by waiting too long before picking. The proper time to pick for cooking is when the pods are a nice yellow, just before they begin to shrivel. Gathered in this stage for winter they must be allowed to dry in the pod. J. K. McCLURG.

Lima, O., Jan. 22.

#### TILE-DRAINAGE, ETC.

*Friend Root:*—In your high-pressure gardening notes in GLEANINGS of Nov. 15, you tell of Mr. Kraver's tile-drainage, all paid for with a second crop, in a single season. I should be glad to know more of that "highest hill in the county." How many acres? How many rods, and how deep are the tiles laid? How far apart are the drains? Did he employ an engineer?

I wish to tell you a bit of my own experience in tile-draining. In the fall of 1879, while my father was away on a visit, I bought \$10.00 worth of three-inch tile, and spent time to the value of \$10.00 in laying them in a small piece of ground containing  $2\frac{3}{4}$  acres. There were two ponds on this ground, making it so wet as to be almost valueless. When my father came home I told him I thought he ought to give me the entire first crop on this land in payment for the drainage. (He owned the land, and I was renting it of him at that time.) He agreed to my proposition. Well, I got 170 bushels of excellent corn from the  $2\frac{3}{4}$  acres, for which I received 60 cts. per bushel, making \$102, from which take the \$20.00 expense of tile and laying, and this left me \$82.00 to pay for working the ground. I was somewhat of an enthusiast on the subject of tile-drainage before this; but afterward my enthusiasm knew no bounds, and still continues on the increase. About seven years ago I bought a good telescope level, and, besides doing my own leveling for drainage (I own a farm now), I have been assisting my neighbors in laying out systems of drains on their farms, having laid out over 88,000 feet this fall.

I have read with great interest W. I. Chamberlain's book, "Tile Drainage," and will read it again as soon as I get my corn husked.

LaSalle, Ill., Nov. 25. E. H. WHITAKER.

[The above was submitted to our neighbor Kraver, who replies as follows:]

*Mr. Root:*—I think I laid about 1000 2 and 3 inch tile on about one acre of ground, about 20 inches deep, and from one to two rods apart—no engineer employed. I planted part in early potatoes; and after digging them I cultivated the ground and sowed in purple-top White Globe turnips, and a part in cabbage and also turnips. I am satisfied that the second crop paid for the tile and work of laying them.

Windfall, O., Jan. 9.

S. K. KRAVER.



He brought me up also out of a horrible pit, out of the miry clay, and set my feet upon a rock, and established my goings.—PSALM 40:2.

DON'T fail to read what Dr. Mason says, p. 94, about Ohio's honey exhibit at Chicago.

DR. MILLER says he has been president of the N. A. B. K. A. only one term, and not two or three as we stated. We must have been thinking of the Northwestern, for that is almost national in character.

HERE is another definition of "slumgum." As it is a pretty good one, we give it here: ;

Tell Dr. Miller that the definition of "slumgum" is a kind of stubble that some people gather to make brick when they have no "straws."  
Santa Barbara, Cal. DELOS WOOD.

On account of our temporary indisposition, as noticed elsewhere, we have been obliged to defer until our next the continued report of the North American at Washinton. In its place we are happy to give a very excellent condensed report, by W. Z. Hutchinson, of the meeting of the Ontario Bee-keepers' Association that assembled in Walkerton, Ont., Jan. 10—12.

OUR cold weather has been holding out remarkably. The mercury has been playing around zero, a good deal of the time below it, some of the time accompanied with high winds. Our bees are nicely packed all outdoors this year, for Mrs. Root said she must have our front cellar—the place where our indoor bees have been wintered of late. When winters are as cold as this one has been we don't mind having them in the cellar. Still, we do not fear losses from those outdoors.

THE following is a fair sample of the letters we are now receiving, and will explain the apparent apathy bee-keepers have with regard to joining the Union:

*Dear Sir:*—I fully expected to send a dollar and become a member of the Union; but when I read such astounding statements in last GLEANINGS, and from such men as they came from, I hesitated. How are part of the members going to fight the other part? "A house divided against itself can not stand." I am out until things look different.  
Conroy, Ia., Jan. 11.

As this was a private letter, we omit the name. We do not wonder that bee-keepers should hesitate to join the Union when the President, James Heddon, practically sanctions the adulteration of honey with glucose.

#### ARE GLUCOSE MIXTURES WHOLESOME?

SHORTLY after tasting freely the glucose mixtures mentioned in another column, a pec-

uliar kind of sickness came over us. We went home and stayed there two or three days, and haven't gotten over it yet. The doctor called it rheumatism as a result of a disordered stomach. While this temporary indisposition may not have been and probably was not the direct result of tasting the glucose, yet it had *something* to do with it. This morning, as we came before our office desk, there were the glucose honeys, just as we had left them. Whether it was imagination or not, the old feeling of nausea came back, and we turned our eyes to more agreeable subjects. And yet Mr. Heddon says that glucosing actually improves inferior honey! The vilest dark honey we ever saw was, in our estimation, better than glucose. We hope there is no one in our ranks who will be foolish enough to follow out Mr. Heddon's teachings—*teachings*, did we say? That is exactly what we mean. He tries to teach, so we interpret it, that adulteration is harmless to the consumer and beneficial to bee-keepers, because it helps to move off dark honeys, and that, therefore, instead of making any fuss when we hear of adulteration, we must wink at it and keep still. This is, in fact, his position boiled down in a nutshell. Does Mr. Heddon not see that this argument, if believed in by dishonest persons, would cause them to practice adulteration largely? In the first place, he is wrong in all his points. In the second place, we are *not* going to keep still and let this sort of glucose logic be rammed down the throats of any one if we can help it.

*Later.*—While Dr. Mason was here we gave him several of the glucosed samples to test. After tasting No. 2 (half glucose and half honey) he turned to us and said "I don't wonder that you were sick." The glucose, the pure article itself, he pronounced as good as any he had before tasted.

#### ANOTHER MICHIGAN BEE-KEEPER AS A LEGISLATOR.

OUR readers will remember that George E. Hilton was recently elected as a member of the State Legislature of Michigan. A letter which we have just received shows that he is not idle. It reads as follows:

*Friend Root:*—Yesterday we suspended the rules and passed a bill, to take immediate effect, appropriating an additional fifty thousand dollars to assist in making the exhibit at the World's Columbian Exposition. The agricultural departments are to have seventeen thousand of this, and bee-keepers expect one thousand in the subdivision, which will enable us to make a very creditable display. You will be glad to know that I have been assigned the chairmanship of the important committee, roads and bridges.  
GEO. E. HILTON.

Lansing, Mich., Jan. 13.

The following, also, from the House Records, shows that Mr. Hilton is determined to do something in the line of good roads:

Mr. Hilton gave notice that, at some future day, he would ask leave to introduce a bill to amend, revise, and consolidate the several laws of this State relative to the laying out, construction and maintenance, and improvements of highways, and to repeal all acts or parts of acts inconsistent therewith.

We have always known that Mr. Hilton was one of the bright and progressive men of that State; and when he champions the cause of good roads, we have additional assurance of it. One of the most crying needs all through our country is better roads; and in the majority of places the same money intelligently expended in accordance with the latest ideas would secure something far better than we now have. In the State of New York it has been shown that the money now spent is practically wasted; possibly this is true of Michigan. Referring to