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GLEANINGS

IN BEE CULTURE

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GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS.

ILLUSTRATED SEMI-MONTHLY

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“for thickening green honey” in a vacuum. Machinery will hardly do it as cheaply, and I don’t believe machinery can be trained to make as good honey as the bees.

YEARS AGO I used brood-combs in the same super with sections, and the bees used some of the black comb in sealing the sections. If extracting-combs are to be used in the same super with sections, the combs should not be at all dark. [Very likely. Years ago, when the old-fashioned double-tier wide frame was used in the brood-nest, there were many reports to show that a dark or black comb next to such wide frame was quite liable to cause a discolored capping in the sections. There is no reason why the same principle would not apply on the Townsend plan in case of a one-tier wide frame or section-holder next to dark shallow extracting-combs. — Ed.]

ISN’T PAGE 601 a beauty? I don’t know whether our Eugene or Rob Murray has done the best job.

WHAT AILS YOU, friend Townsend, to use dirty bait sections? page 594. In this locality we prefer clean ones.

“BY AID OF the government-bred bacteria,” says Prof. Cook, page 586, alfalfa is now grown in the Eastern States. It may be no harm to say again that such bacteria are not needed if alfalfa is sown on land where sweet clover has grown.

THE NEW DIBBERN queen-trap is on one of my hives, and now it will be just like that colony to refuse to swarm. But any queen ought to feel that her wants were carefully consulted when she sees how easy is made the passage up into it, and also the passage down out of it.

YOU DIDN’T REPORT, Mr. Editor, the size of the larvæ the bees selected for queen-rearing when you made a colony queenless. [Why, I thought we did report that last summer, and in doing so acknowledged that your contention on the point was well taken. What more do you want?—Ed.]

I’M AFRAID some may think, upon reading that footnote, page 584, that formalin may be intended as a cure for foul brood, to take the place of the McEvoy treatment. Hardly that; it’s only a question as to whether we can save melting up the combs after using the McEvoy treatment.

RIGHT YOU ARE, Stenog, in saying that more attention must be paid to having extracted honey well ripened, page 587, but I doubt the wisdom of fooling with machinery

MY EXPERIENCE is like yours, Mr. Editor. I get more stings on my wrists than on my fingers. But that’s not so much the case when I wear tight wristbands, as I generally do in the working season. Doesn’t the dark cavern made by the loose wristband invite stings? [Yes, you are exactly right. It is the dark cavern that seems to invite the onslaught of the bees particularly. But the backs of the hands are also sensitive as well as the insides of the palms. Detachable sleeves can be easily made in a short time that will protect these parts as well as the wrists, whether wearing a coat or an open-sleeve shirt. I will send you a pair of fingerless gauntlets that I believe you will like, and continue to use.—Ed.]

THAT A QUEEN acquires the scent of the bees is a doctrine that has worked in its way within recent years, isn’t it? The tradition of the fathers was just the reverse. A queenless colony protects itself poorly against robbers. Isn’t that partly because, having no queen to give them a distinctive odor, they can not distinguish their foes? Workers eagerly hunt over your fingers where the queen has been. How’s that unless the

queen gives the scent? [I don't agree that a queenless colony "protects itself poorly." At least they do better than that in this locality. If we throw largely out of consideration colony odor, it will be hard for us to understand many of the phenomena that now seem easy of solution.—ED.]

"THEY WOULD CROWD every available cell in the brood-nest, and very often swarm before going into the sections," page 596. I've read that several times, wondering why your bees should act so differently from mine. I never had a colony swarm before working in sections. Did you use any bait? I think my bees begin in a baited section—super as soon as in extracting-combs. I don't mean they'll begin as soon on the foundation, but on the bait. Just one bait-section for each colony is all I use. [Yes, we have had them swarm before going into the sections, even with baits; and we have had them loaf in front of the entrance and not swarm, jamming full every available cell in the brood-nest for several days. The Townsend plan puts up something more than a bait—a real coaxer in the shape of shallow extracting combs. When the bees get started to going above they will keep on going there, even when conditions are not so inviting as before—at least that was my personal observation, and it seems to be in line with the Townsend practice.—ED.]

FRIEND WEAVER, you say, p. 596, "if the package contains 3 or 6 pounds they will buy just as quickly" as they would a pound package. Locality again. Thousands of people that would do without it if they had to buy 3 pounds at a time buy frequently if it's offered a pound at a time. The National Biscuit Co. evidently think they increase the amount sold by putting 5-cent packages on the market. [If a customer is allowed his choice without solicitation, he undoubtedly in any locality would select the smallest and cheapest package. Well, suppose he did, and liked the honey, and came to buy more, and so on every Saturday night. Suppose our bee-keeping friend or the grocer should say to him, "Say, Jones, why don't you buy 25 or 50 cents' worth like this, and get it for very much less money per pound than in that small package?" I have been told that the sellers of proprietary medicines soon discover that customers find it more economical to buy a large dollar bottle than a 25-cent one that does not begin to contain a fourth the amount in the large package. I think our friend Weaver had in mind the matter of personal solicitation on the part of the seller.—ED.]

"THE GROWING scarcity of suitable section lumber may force all comb-honey producers to adopt some other plan of marketing in the future. If so, we may as well begin to face the problem now," page 587. Now look here, Mr. Editor, you may as well face the fact that there isn't going to be any such problem. We used four-piece sections before one-piece sections were ever

heard of, and would be still using the four-piece with satisfaction if the one-piece had not come in. Why can't we use the four-piece after the one-piece go out, just as satisfactorily as we did before the one-piece came in? Surely there's no scarcity of four-piece lumber. [You forget, doctor, that lumber for four-piece sections would also be expensive. The scarcity of one would affect the price of another. I know of no lumber that would be available except hard wood; and the expense of cutting lock-corning at each end of four pieces of wood comprising the sections, or eight lock-corning joints in all, to make one section, or 8000 lock-corner cuts to make 1000 sections—well, you see it would be a question of labor. But that is not all. It is a big job to box up and prepare for shipment 4000 pieces to make 1000 sections. If you were a manufacturer for a time, and had made both kinds of sections, I think you would conclude that the four-piece kind would not materially relieve the situation. While it is true that we had the four-piece sections before we had the one-piece, the lumber was soft, and cost only about a fourth what it does now.—ED.]

"LET ME SEE," says ye editor, page 583, "if my recollection serves me right, there used to be a chap up in Northern Illinois who argued strenuously for sections holding a full pound because the public expected a section to weigh that much." That chap, Mr. Editor, hasn't changed his views in the least. Neither did he at that time believe the production of a crop of sections weighing an exact pound each was other than a myth. Possibly you may recall that he viewed with some favor the idea of producing sections weighing so much less than a pound that no one could possibly be deceived into believing them full pounds. What he then protested against, what he protests against now, is the dishonesty of selling a light-weight section for a full pound. Not the slightest objection to selling sections by the piece if there's no deception as to weight. But I'm afraid there is deception, even yet. On what *honest* ground can you explain quotations that make a case of sections weighing $11\frac{3}{4}$ pounds sell for more than a case weighing $12\frac{1}{2}$ pounds, the quality being the same in each case. [There is no difference of opinion between the Illinois man and the editor, and never has been, on the question whether it is right or wrong to palm off a short weight for a full one with intent to defraud. That point does not admit of argument. The weights have been shorter, not to deceive but to get within a *certain price*, say 10 or 15 cents as the case may be; and in such cases sections have been sold by the piece, like oranges. When sold by the pound the price is figured accordingly, whether it was short weight or a full one, like cheese. The Colorado bee-keepers have for years sold their honey at so much a case—not to deceive, but for convenience. Where do you find specific cases of intent to defraud?—ED.]



San Antonio, Texas, is the next meeting-place for the National.

A few breeding-queens should be procured for your yards each year from which to improve your stock of bees.

Rains, downpours, cyclones, floods, and a dozen other things we have had here in Texas, and yet prospects are promising.

There has been a great demand for Southern queens so far this season, which I gather from letters from some of our breeders.

The Texans are at last glad to know that the National will come to San Antonio this fall. It is about time, too, that this decision were made. It will be only several months until the meeting, and preparations for the occasion are well under way.

My first crop of this year's honey was taken May 10 from my home yard at Hunter, Texas, and sold at 7 cts. per pound. It was extracted honey of good quality, gathered from various spring flowers. How does this compare with bee-keeping in the North?

I am indebted to Prof. Frank Benton, in charge of apiculture, Bureau of Entomology, Washington, D. C., for a complimentary copy of a revised edition of Farmers' Bulletin No. 59 which treats on bees and bee-keeping, especially for farmers. All who are interested in bee-keeping should be in possession of a copy. It is free.

The bee-keepers of the Southwest will confer a great favor if they will send me news items on apiculture from all over our part of the country. I shall be glad to receive and answer all letters that are sent me, and I should like to keep posted upon all topics relating to bee-keeping. Crop reports especially will be appreciated.

Cleaning the inside of the hives and the frames of burr-combs and propolis, and replacing crooked and drone combs with good worker combs, or foundation, in the spring, when there is very little honey and brood in the way, has been found very profitable. Besides, it makes future manipulations very much easier and more pleasant, while the better combs result in less worry, fewer drones, and more workers. This, I feel sure, is worth thinking about.

That "brick" of honey has partly melted down now; but the center and the upper portion of the cake are still firm. The extreme moisture of our season this year may have had some effect upon the honey getting soft, for a thin watery fluid has penetrated through the carton, which would show that moisture was the cause. The brick is still being kept for further observations.

"Spring cleaning" in bee-keeping is very much like the spring cleaning with the good housekeeper, and it is one of the things very much neglected by too many bee-keepers. It should include the cleaning-up of every thing in and about the apiaries, and putting all in apple-pie order for future work. This will make the work more pleasant, and, at the same time, more profitable.

The spring honey crop has been very light this year. In the greater part of the country there has been practically no crop so far, and there has been no honey on the market for several months. Even the larger dealers have had none to supply demands. I have been trying to get several hundred pounds for our boys here at college, but I could not obtain it. This is mainly due to the excessive and continued heavy rains which still prevail frequently to this date.

Very few bee-keepers really know the value of a Manum swarm-catcher for hiving swarms until they have tried one. I say this from my own experience. Before, I used to think it was just so much saved if the swarm-catcher were left out of the order for equipment, but not so now. In fact, I do not know of any thing better, especially if swarms settle in tall trees. To let the swarm cluster on the suspended basket while the hive is prepared to which the swarm is then carried, makes the hiving much easier and less disagreeable than the old ways.

The control of swarming has been a problem this season here in the College Apiary. The great abundance of spring honey-yielding bloom produced overpopulous colonies before they could be controlled. Once the swarming fever was on, and the most favorable conditions existing, nothing would keep them from swarming. Colonies that were divided artificially would swarm, even if they were on only half the number of combs in a large hive. With such existing conditions, all our pet-hobby non-swarming ideas are knocked far and wide, and we begin to wonder how we *might* control something for which we had a "sure thing" before.

SHORT APICULTURAL TERMS.

What shall we have next? A shorter term, "expressive, which would never lead to any confusion, and I would suggest that our correspondents adopt the term"—edito-

rial, p. 471. The term referred to is "one brood" to be used instead of one frame of brood; but I am just a bit afraid that there might be some confusion. Suppose a swarm is given "one brood" or "a brood," how many combs of brood will "a brood" contain? Really the term "one brood" or "a brood" would apply to the whole brood of a colony, would it not? If "two broods" are given to a swarm, then two colonies must be deprived of their brood to supply the swarm. And, again, in some apiaries in Southwest Texas, "bottom-board" and "floor" are two entirely different things. Bee-keepers with large apiaries have "floors" under their hives, yet no "bottom-boards." Their hives rest on rims three inches high, placed on the hard soil, and filled nearly level with dry earth. The floor of the hive is the bare earth. There is a *floor* but no *bottom-board*.



WATER FOR BEES.

An ideal watering-place for bees we have made here at the College apiary. A line of small water-pipe was laid to a shady and sheltered spot on the edge of the oak grove near the apiary. A small faucet is placed eight inches above the ground. Under this is placed a shallow trough made simply of a piece of lumber 2x12 inches by 2 feet long, with several longitudinal grooves $\frac{1}{2}$ in. deep and $1\frac{1}{2}$ in. wide, running the length of the board, but two inches shorter at each end. These grooves are connected by several transverse grooves to allow water to run into all of them. A piece of gunny sacking is tacked over the whole surface close down in the grooves, and the faucet is turned on so it will drip just enough to keep the cloth wet and not allow it to run over. The bees take readily to such a watering-place, and there is no danger of bees drowning. Several arrangements have been tried, but none as successfully as this one. The trough is placed close to the ground. The bees seem to prefer it, and the winds do not disturb them as they did with the troughs placed several feet above ground.



A FLOODED APIARY.

One of our experimental apiaries, owned by Prof. R. F. Smith and myself, is located on the Brazos River, fifteen miles from College Station, where the country is low for miles around. This "bottom" is a good one for honey-production, as the extensive woods are filled with honey-yielding flora, besides the great cotton plantations that afford a good crop from that source. Alfalfa is also grown extensively. This whole area, however, is subject to floods whenever Texas is blessed with abundant rains and downpours, and at such times crops and life are endangered. Such a flood spread over this country in the first week of May, and people, stock, cattle, etc., were removed to places of safety where the land was higher. The bees, however, were the last to receive proper attention, for, after several attempts

by inexperienced persons, the saving of them was given up in disgust on account of their stinging. The method of procedure as dictated over the phone was to place them on scaffolds of some kind, out of the water's reach, smoking the bees while doing this. The scaffolding was soon made out of an old heavy plantation wagon, and several other structures that were handy, but the work of placing the bees thereon was not an easy task. It was even given up by some of the faithful plantation darkies who had often helped me at the work with the bees. The bees seemed to have become infuriated at the approach of the flood. Perhaps the weather or the atmosphere may have had an effect on them. A Mr. Simpson later put the bees up at 25 cents per colony, finishing the work late at night when the water had already entered some of the hives. A trip to that apiary a few days later revealed a pitiful sight with the yard and the former stands all washed up, and the colonies all piled in one great heap several feet off the ground, with the entrances turned in all directions. A heavy honey-flow was on, and the combs dripped with new honey when handled. Some of the supers were nearly full and the combs sealed over, therefore disgust gave way to a turn of enthusiasm well known to the bee-keeper, and the yard was again restored to order after several days of hard labor. Since the first flood it has repeated itself twice, each subsequent flood coming a week after the preceding one; but these did not reach the point of the first.

Now for the questions. Is it profitable to keep bees in such localities, and how can it best be done? It is really the only country here where honey-yielding flora is productive, as the surrounding higher upland country is poor for bee-keeping. Profitable honey crops can be obtained in these "bottoms." The only question is, how to overcome the danger from the floods. These happen every few years. The surrounding high locations are out of reach of this area, so that the apiaries can not be located there. To place the colonies permanently on high scaffolds has its objections. To work on them is quite unhandy, and the bees do not do as well as when the hives are close to the ground. Therefore the building of suitable scaffolds upon which the colonies can be placed at the approach of a flood seems to be the most satisfactory. Such can be easily made out of stout posts and two pieces of scantling placed far enough apart to set the hives across. These scaffolds may not be needed for years, and then, again, several floods may come in a season as in this one. The only trouble that might arise is to find a suitable person to put the colonies on the scaffold, for it will be well to remember that none but negroes are kept as laborers on these "bottom plantations;" and the overseer, who is a white man, has too many other things to look after at such critical times, for every thing is done on a large scale on these plantations of several thousands of acres.



WE are glad to note that the *Rural Bee-keeper* is showing a healthy progress. Its editor is an up-to-date bee-keeper, and appears to be able to pick out as well as write good bee-matter himself.

THE HOFFMAN FRAME A STEP BACKWARD.

A VERY readable article on the subject of Hoffman frames appears in the *Rural Bee-keeper* for May, written by our old friend L. Stachelhausen, of Texas, well known to our readers. He believes its adoption was a mistake, and a step backward, and his opinion is well worthy of careful consideration.

Strange how differently people look at this frame. Mr. Harry Lathrop, in this issue, is only one of a thousand extensive bee-keepers who use and prefer this frame to any other; and yet it is, perhaps, true that there are a thousand others who would not have it. It is the old question again, that not every one can be induced to use the same device. The users of the old-style closed-end Quinby frame could not be persuaded to adopt the old-style Langstroth unspaced frame; and I presume our friend Stachelhausen would feel that he would have to get out of the bee business if some power were to compel him to use any form of frame with closed or half-closed uprights.

We sell four styles of frames, and are willing to supply whatever is called for.

BABY NUCLEI; SOME IMPORTANT REQUISITES IN ORDER TO MAKE THEM WORK IN THE HANDS OF A BEGINNER.

We have been trying these baby nuclei with and without brood. Our experience is that, in the *forming* of them at least, there should be brood, and, if possible, a queen of some sort—a virgin will do just as well. Without both, the bees are quite liable to desert. As a general thing the bees will remain if they be given a virgin, even if they do not have brood providing she is accepted. But there ought to be brood to supply young hatching bees to replace the few bees that may desert. When the virgin gets to laying, her brood will be converted into hatching bees again. Another factor that contributes toward the success of these baby nuclei is to distribute them in shady places remote from the entrances of strong colonies. In some instances we found that a big stock two or three feet beneath, with flying bees going in at a fast rate, will attract the bees out of the newly formed baby nucleus above. You see they hardly know where their home is; and, when once in the air, they will join the crowd or the stream of flying bees going into the big hive.

There are many things an expert can do

with a baby nucleus; but a beginner, at least, had better follow the suggestions given above.

THE SHAKE-SWARM PLAN AT VERNON BURT'S YARD.

AS I looked over Mr. Burt's bees the last few days, and saw how they were piling in at the entrances, I said, "You will soon have swarms at the rate they are storing honey."

"I have not had any yet," he answered.

"But you will have," I said, "and then what are you going to do?"

"I do not think I shall have very many swarms, because I practice the shake-swarm plan."

"Now, Mr. Burt, please tell me exactly how you do it, for every one seems to have some modification of this method."

"I carefully watch for those colonies," he said, "that are *preparing* to swarm. I put an empty Dazzenbaker hive with frames of foundation on the old stand, removing the old hive to one side, and take out a frame of brood and the queen, and put them in the new hive. Then I shake a large portion of the bees from the old hive in front of the entrance of the new one, give it the super from the old one, and then move the old one to a new location, which will still further give up of its flying bees to the shaken swarm now on the old stand. The bees will go right on storing in the supers just the same, and there will be no further trouble for that season."

This is the same plan Mr. Burt pursued last year and the year before that with such success.

"But, say, Burt, why don't you try the Sibbal plan?"

"Too much work, and too slow," he replied. "Then I know how flying bees will find their old entrances, and this would, to a great extent, defeat the object of the manipulation. But why should I change," he continued, "when the shake plan is so satisfactory, and so little work?"

There is scarcely a honey-producer in the United States who, with so little labor, produces finer or more comb honey than our friend Vernon Burt, of Mallet Creek, O. He is never in a hurry, seems to take things very easy, winters his bees outdoors in Dazzenbaker hives and winter cases, and then uses those same winter cases for honey-production.

A KINK IN COMB-HONEY PRODUCTION.

But I came very near forgetting one important secret to Mr. Burt's success, and that is, that he puts several thicknesses of burlap on top of the super for comb honey. Over the whole he slips down a large wintering-case. Said he, "I have observed it over and over again, that a comb-honey super without these several thicknesses of cloth and winter-case over it will not be filled as rapidly as one that is protected. Why," said he, "without protection the bees will desert the super entirely on cool nights, and all work will stop for the time being."

THOSE TWO EDITORS—SEE PAGE 662.

The enlarged view of the two bee-journal editors, as seen elsewhere, is a very natural pose of both personages, especially of A. I. R. during chilly or cool weather. It is then his wont to wear a fur cap as if he were cold. Indeed, in the house or in the office he will, in the spring or winter, have his coat collar turned up just the same, and very often his fur cap on. We laugh at him a little, telling him it is a habit; but he insists that they feel comfortable, and that they ward off a cold. It is possibly true he is as much inclined to catch cold in the house as outdoors, especially if sitting down. But the "cabin in the woods," remote from business and letters, has been almost a panacea for those chills, necessitating so much bundling in summer in and out of doors. He has since shed his fur cap and overcoat. As to the other editor shown in the picture, I received a letter that said he was taking a much-needed "playspell;" that he had purchased nine colonies, and was keeping bees again; that somehow letter-writing was irksome, and outdoors inviting.

That both may be spared many more years and "playspells," I am sure is the wish of many of our readers.

THE ADULTERATION LAW ENFORCED IN NEW YORK.

A FRIEND of mine who lived for several years in Medina transferred his business to Plattsburg, N. Y. As he and his wife know what good honey is, they concluded to see what they could find in the markets of that place. On inquiry at the grocery they were met by the response, "Oh, yes! we have honey for sale," and a package, or, rather, a tumbler containing glucose and honey and a piece of comb was handed out. Near the top of the jar, in very large black letters, is the following:

75 per cent Corn Syrup. White-Clover Honey Compound. 25 per cent Honey.

My friend wrote me, sending the label, complaining of the vileness of the stuff, and said that the same was not like the real honey he used to buy here in Medina.

But the very conspicuousness of the wording is sufficient to show just what the customer is buying, and he therefore has a right to ask for the pure article if he can obtain it. Certainly there is plenty of it in the country.

I assume that this wording is strictly in accordance with the law of New York, which provides that all mixtures and adulteration shall show in plain letters the exact proportion of each ingredient.

It can not be for long that such goods can be sold in the State of New York. It will be and must be that 100 per cent pure honey, even at a considerable advance in price, will run the other article out entirely.

Honey-producers do not object to adulteration or mixing, providing the per cent of said adulteration or mixing is properly placed in conspicuous letters on the bottles or pack-

ages. It is the misbranding, or masquerading under false names and colors, that provokes the wrath of the bee-keeper.

Do not forget that three-fourths of the States have pure-food laws; and we hope the day is not far off when the other fourth will fall in line.

I see in a few stores, even in Ohio, occasionally, packages of honey compounds, each package labeled a certain per cent of glucose and a certain per cent of honey. But I note with much pleasure that these packages are getting to be soiled, dirty, and fly-specked; and the grocer is beginning to learn that such stuff will not sell unless it is labeled pure honey. But misbranding in Ohio has come to be a *crime*; and under our present law, which is none too strict, the evil can not grow to any great extent; and I apprehend that the new-fangled name "Karo" will soon be recognized for what it is—glucose, or corn syrup, which under those names won't sell.

WILLIAM RUSSELL INSPECTOR OF APIARIES IN MINNESOTA.

THE Minnesota Bee-keepers' Association, headquarters at Minneapolis, have been putting forth strenuous efforts to get a foul-brood bill through their legislature, patterned something after the one in force in Wisconsin. Several times they seemed to be on the eve of success, and at one time went even so far as to announce that the law had been passed; but this, it seems, was a little premature; and now we are compelled to state that it just failed of passage. But the efforts put forth by the Association were not without good results. It appears that Mr. William Russell, of 4810 Thirty-eighth Ave., South Minneapolis, has been appointed inspector of apiaries, and his commission takes effect August 1, and continues for two years. While not clothed with authority to destroy infected colonies, as he would have been had the foul-brood law passed, he doubtless will be able to do a great deal of good.

I am not informed whether some law did pass in amended form or whether there was some separate provision under an existing law by which the inspector could be given a certain amount of jurisdiction in stamping out foul brood.

The way has been paved, at all events, probably, to secure a satisfactory foul-brood law at the next session of the legislature. Mr. Russel is popular and diplomatic, as well as an experienced bee-keeper. He is such a genial old Scotchman that he can get what he wants without force, so that the Minnesota bee-keepers, under existing circumstances, are peculiarly fortunate in their man.

WHY ADULTERATED COMB FOUNDATION COULD NOT BE SOLD IN THE UNITED STATES.

REFERRING to our editorial of some time ago, stating that there was no adulterated comb foundation sold in this country because the bee-keepers would almost instantly de-

fect the fraud, if there were any such, Mr. E. E. Hasty, in the *American Bee Journal*, in view of the fact that ceresin foundation is sold in Europe, suggests that the reason why paraffine and ceresin foundation can be sold across the water and not in America is due to the *difference* in climate. He says that, with our extremes of temperature, impure foundation would be sure to melt down; while in cool climates without our extremes the breakdown is only occasional — not frequent enough to stop the use of the article.

Some years ago A. I. Root tested ceresin and paraffine foundation, and in every case the results were but a little short of the disastrous. The first hot day resulted in all the combs built from that article melting down in one shapeless mass, destroying brood, drowning bees, and the honey escaping from the entrance. Other experiments were tried by others at about the same time, with precisely the same results, and these seem to have been enough to satisfy American bee-keepers for all time that the *only* article that can enter into foundation at all is *pure* beeswax, the *purest* of the *pure*.

THE SIBBALD AND SHAKE PLAN OF SWARM CONTROL TESTED AT MEDINA.

I HAVE been testing both the brush and shake-swarm methods as well as the Sibbald plan of keeping down swarming. I find this to be true: That the returning-bee scheme is a little slow, while the shake plan gets immediate results. Still I can see conditions under which the Sibbald would be perfectly satisfactory, and save the bother and nuisance of stirring up a whole colony of bees, and getting them in the grass and up one's trowsers legs, resulting in more or less stings and inconvenience. In the generality of cases I have found it more convenient to use a combination of both methods.

I tried the Sibbald plan without a frame of brood, in some cases using only foundation, but in most cases the bees would find the old entrance, even when I carried it away several feet. Mr. Sibbald makes it emphatic that the new hive on the old stand must have one frame of brood and the queen, and I believe he is right. But even then I noticed the bees were loath to go into the new hive, though it was exactly in the old location. The changed condition of the brood-nest seemed to indicate to the incoming bees that they had made a mistake, and they would hang around on the outside until they found the old entrance, two or three feet to one side.

In the case of dark hybrids I had no end of trouble, for, be it understood, we had one yard made up of bees which we had bought from several different farmers. The black strains would find their entrance, in spite of me. Indeed, it is a well-known fact that black bees will find their hive much more readily than the Italians, and this one fact will make this race and their crosses difficult to handle on the Sibbald plan. My present impression is that the average bee-keeper

will succeed better on the brush-swarming plan pure and simple, then carry the old hive to an entirely different portion of the apiary; but even then it is essential to put the queen with the shaken or brushed bees; for in some cases I found that, without the queen, especially if no brood were given, the bees would desert, going into the other hives here and there.

I got into one mess by shaking about a dozen colonies all near together. There was a general mix-up. Some of the hives secured most of the bees, while others were entirely deserted; but in every case where I gave a queen with a frame of brood just long enough for the bees to get used to the new conditions at the old stand they stayed nicely and went to work.

THE HONEY-CROP PROSPECTS FOR 1905.

THERE has been an unusual amount of rainy and chilly weather everywhere. All through the Northern States in the clover and basswood belt the season has been very backward. But the weather has apparently changed for the better just in the nick of time. There is an unusual amount of red, white, and alsike clover this season. In our locality I never saw such heavy mattings of it. The fields are fairly white. The bees that have been on the verge of starvation are now just beginning to bring in honey. But the nights have been a little too cool to insure a good secretion ready for the bees in the morning. As the atmosphere warms up the bees begin to get in their work.

Desiring to get the very latest information from two or three of the great honey-producing centers of the United States, I wrote to the managers of two honey associations and one representative bee-keeper, requesting them to wire us on the 12th regarding the honey-crop conditions up to that date, and the prospects. The following telegram from Mr. H. J. Mercer, Manager of the California Honey-producers' Association, of Southern California, speaks for itself:

Sixty per cent of bees died; continuous cold cloudy weather has greatly reduced crop. I estimate total crop 100 cars, mostly extracted. H. J. MERCER, June 13. Mgr. Cal. Honey-producers' Ass'n.

As Southern California has a capacity of 500 carloads or more in a good year, the 100 cars estimated will probably be somewhere about a fourth of a crop. Northern California will probably produce its usual amount of honey. Taking it all in all, California may be able to produce 200 carloads. This amount will not be enough to affect materially the prices of Eastern honey, because not a large portion of it probably will find its way to the Eastern markets.

Mr. Udo Toepperwein, who is in touch with nearly every portion of Texas by reason of his business connections with the beekeepers' of that State, wires us as follows:

Too much rain this spring. Horsemint crop only fair. Mesquites budding. Fair crop expected from mesquite flow soon. UDO TOEPPERWEIN. San Antonio, Texas.

If this indicates any thing, it shows that the season has been backward, but it does

not signify that a large crop may not yet be obtained, although in all probability the aggregate amount will be less than formerly, but not enough so the surplus of it will seek the Northern markets, probably.

I have been expecting a wire from Mr. Frank Rauchfuss, of the Colorado Honey-producers' Association, but up to date, June 14, have not heard from him. It is perhaps too early yet to give any kind of a guess of what the alfalfa regions will probably afford in the way of honey.

The next ten or twenty days will tell the tale of whether clover and basswood will do any thing this season. In the mean time we request our subscribers everywhere to send us postal cards containing not more than twenty or thirty words, telling of the crop conditions. Now, please *don't* write long letters, nor mix these reports up with something else.

Later.—Honey from clover is coming in strong, and the conditions for a good honey-flow from this source were never better.

THE DIFFERENCE IN THE HONEY-GATHERING QUALITIES OF DIFFERENT BEES.

I WENT down to see neighbor Vernon Burt with his 200 and more colonies all in one location. Nearly every one of them is strong, and in prime condition to go into supers. As stated elsewhere, the weather has been very unfavorable until the last two or three days; but now the bees are piling in honey. I arrived at the yard about five o'clock, having come from one of our outyards, and was gratified to see how his bees were piling into the entrances—perfect streams of them—faster than one could possibly count.

Mr. Burt let me take a look into several of his colonies, one of which started from the foundation, in sections with one bait. They were then preparing to cap over 32 one-pound Danzenbaker sections—all *this within three days!* There were several others that were doing as well, and a lot of others that were falling far short of that performance. Of course, Mr. Burt will use the first mentioned as breeders. In fact, if I understood him correctly he has already been doing so.

Thirty-two one-pound sections in three days, from clover alone! That practically means ten pounds a day. The country has all been soaked with heavy rains. The clover has for weeks back been storing its pent-up sweetness ready to give it forth almost as freely as basswood.

THE *American Bee-keeper* has lately added to its editorial staff, in the position of associate editor, Mr. Arthur C. Miller. That journal was already strong editorially; but its late acquisition will make it still stronger, as Mr. Miller is an enthusiast on bees, an old experienced bee-keeper, and a careful observer.

A NEW FOUL-BROOD LAW; LEGISLATION IN GENERAL.

A SHORT time ago I asked for information in regard to any State or Territory that had recently secured foul-brood laws. New Mexico has lately come into the list. The following is the full text of the law:

NEW MEXICO FOUL-BROOD LAW.

HOUSE BILL NO. 99.

Introduced by Hon. Granville Pendleton, Feb. 20, 1905; read first and second time by title, ordered translated and printed, and referred to Committee on Internal Improvements.

AN ACT entitled an act relating to foul brood and other contagious diseases among bees.

SEC. 1.—*Be it resolved by the Legislative Assembly of the Territory of New Mexico*, that hereafter all bee-keepers, owners, and possessors of bees, apiaries, bee-hives, and apparatus pertaining to bees, bee-keepers, apiaries, and bee-hives shall keep the same properly protected and disinfected, and free from all foul brood or other contagious diseases, and shall be required to keep all bees, bee-hives, bee-houses, apiaries, comb, honey, and apparatus free from all foul brood or other contagious diseases.

SEC. 2.—That any person or persons having in their possession or under their control any bees, bee-hives, bee-houses, combs, or apparatus pertaining to bees or apiaries, and who shall allow the same to become infected or diseased with any foul brood or contagious diseases, and who shall willfully and knowingly permit them to remain in such condition shall be deemed guilty of misdemeanor, and upon trial and conviction before any justice of the peace may be fined in any sum not less than ten dollars or more than fifty dollars, or by imprisonment in the county jail not more than 30 days or by both such fine and imprisonment.

SEC. 3.—That any person competent to testify as a witness may, upon information and belief, make complaint before any justice of the peace in any county in this Territory in which such foul brood or contagious disease among bees is found to exist; and, upon such written complaint being made in writing, and duly sworn to as required by law, the justice before whom such complaint is made shall issue a warrant for the arrest of the offender and shall fully inquire, examine into, and try said cause as now provided for the trial of misdemeanors before a justice of the peace.

SEC. 4.—That upon the trial of said cause that any bees, bee-hives, combs, honey, or apparatus connected with said apiary or bee-keeper, that may be found by said justice of the peace before whom such trial is had, to be diseased or infected with foul brood or any other contagious diseases, shall by such justice of the peace be declared to be a nuisance, and shall be condemned as such, and an order or writ issued for the destruction of such nuisance; and upon the issuing of such order and such writ directed to any constable or sheriff of such county such constable or such sheriff to whom such order or writ is directed and delivered, shall forthwith execute the same by burning, destroying, and putting out of existence all such bees, bee-hives, bee-houses, comb, honey, or apparatus so declared to be and condemned as a nuisance.

SEC. 5.—Justices of the peace in their respective counties shall have jurisdiction in all causes arising under the provisions of this act, and their costs in cases under this act shall be taxed up and assessed as in other cases of misdemeanor before justices of the peace.

SEC. 6.—All acts and parts of acts in conflict herewith are hereby repealed, and this act shall be in force and effect from and after its passage.

This makes in all, so far as I have heard, 13 States and Territories, including Ontario, that now have foul-brood laws. We came very near having two more. I refer to the law that was passed in Missouri, but which was vetoed by the governor, and the measure that came very near passing in Minnesota. But as the latter State has a foul-brood inspector we might also include Minnesota, making 14 in all. Let the good work go on.



STOMACH-MOUTH OF BEES.

I think there is no other animal in the world that has such a marvelous variety of functions as has the honey-bee. This complex physiology implies an equally marvelous anatomy. Once to think what the bee can do! It can gather nectar in three ways, and digest it. It can gather in the pollen and other forms of proteid food, and convert them into assimilable aliment. It can separate the pollen from the honey in its honey-stomach. It can bear the wax scales from venter to mouth, knead them, and then fashion them into the marvelous comb. It can prepare food, and administer it to queen and larvæ. It can gather the propolis. We need not wonder, then, that the anatomy of the bee is something surprising. The wondrous tongue and other complex mouth-organs; the antennæ, which answer as delicate sense-organs; the great compound eyes and much smaller simple eyes; the colossal glands, which are surpassed only by those of the well-known silk caterpillar; the wax-glands; the varied compound hairs; the antennæ-cleaners on the front legs; the pollen-brushes on the middle legs, and the pollen-baskets and wax-jaws of the hind legs—these together, with the stomach-mouth, give us an anatomy that challenges comparison in all the realm of animal life. To-day I wish to speak only of the stomach-mouth.

This is a small spherical organ situated in the hinder end of the honey-stomach. Picture, if you please, the honey-stomach as a small horizontal bag, which, as we pull the head from the thorax or the thorax from the abdomen of the bee, often comes out so that it is plainly visible. In this case it is usually full of nectar. Can we not picture a minute apple-shaped body, at the very hinder end of this little bag? Imagine the apple cut into quarters, and imagine these quarters slightly reduced, and the skin not cut, except a small opening at the stem end of the apple, which is forward, and a second small opening at the blossom end, which, of course, is at the extreme hinder end of this little sac. Picture again numerous hairs on the inside of these quarters, all pointing back. It is easy to demonstrate all this if we kill a bee and at once separate the thorax and abdomen, pulling out the honey-stomach. If we put this in a warm saline solution, say of common salt, and open it under a good dissecting microscope, we shall see the four quarters of the stomach-mouth constantly open and shut, or pull apart and then close together, thus enlarging and reducing the space between the four sections. It is obvious what the effect of these mo-

tions will be. As the quarters recede, honey from the honey-stomach will push in; as they close, they close first back, and the honey is again thrown back into the honey-stomach. The pollen, however, is caught by the hairs, and can not return with the honey. Thus, all the time that the bee is gathering, this little stomach-mouth is actively engaged in straining out the pollen from the nectar. We understand, then, why the nectar goes into the cells of the comb so free of pollen. It may not, usually will not, be entirely eliminated, though we may expect very little and will rarely be disappointed.



THOMAS W. COWAN.

We are glad to know that Mr. Cowan has again returned to our country and State. Those of us who know Mr. Cowan can not but appreciate his great ability and equal courtesy. It is good to know a man who is so thoroughly and invariably the gentleman. As editor of the *British Bee Journal* he has great influence, and has done very much for our art. Like all great men, Mr. Cowan is an example of modesty. He never pushes himself to the front. His book, "The Honey-bee," is one of the very best ever written by any one. Though small, it is yet wonderfully complete, as it is an example of conciseness. It is a model of accuracy, so that no one need question any statements of facts taken from this work. Mr. Cowan has also inventive genius, as indexed in his automatic extractor, which, so far as I know, is not excelled by any similar machine in the market. It only remains to be said that Mrs. Cowan is as delightful as her husband. To know such people is to be enriched, and we may all rejoice that Mr. Cowan is with us again.



THE WHITE SAGE.

This incomparable honey-plant, *Ramona polystachya*, is responding to the splendid rains of the present season. In all the eleven years of my sojourn at Claremont I have never seen such a wide and vigorous growth of this plant. This is not strange; for, as we all know, all plants respond quickly to abundant moisture. The present season has been one of the finest, in the way of rain, that California has experienced for long years. We have had well nigh four inches of rain in the last week, and the rainfall of the season is now double the average. This not only touches the bee-keeping industry with energizing stimulus, but it also helps powerfully our entire agriculture. California is bound to have an exceptionally prosperous year. The white sages are already many feet high, and the light green of their foliage, and the similarly colored stem, is a pleasing mark on the landscape. In the past week I have ridden for miles through avenues formed by these beautiful shrubs. The plants are already in bud, and the long racemes will soon throw out their wealth of bloom, which will not only attract the bees,

but will rejoice the bee-keeper. Like most of our native plants, this white sage has a long tap-root, and so it reaches far down to drink in moisture and other food elements which serve to push its vigor and growth. It blossoms centripetally—that is, from below upward, and is a long time in bloom. Often for five or six weeks the blossoms will be throwing out their bid for bee attention. This fact of long-blooming period is what makes this flower so famous among bee-plants, and what gives to California its pre-eminence as a honey-producing section. I long ago volunteered to be ever ready to act as a “honey-tester.” I think I know good honey. I have enjoyed that from basswood, from linden, tulip, mignonette, fruit-bloom, including orange and alfalfa; yet in all my experience I never had any honey that, for flavor and body, surpassed that from the white sage. The sage, then, may be regarded as pre-eminently superior. It gives an exceptionally long season and the best honey. Often, in California, apiaries of hundreds of colonies have secured from two hundred to five hundred pounds per colony. Of course, such extreme records are rare, but they come with all our best seasons. The white sage is largely responsible for these exceptional harvests.

In closing I will say that the black sage is a close second to the white, while some apiarists claim that it is fully equal. It also gives a very superior article and a very long harvest. Its blossoms are in heads rather than racemes, and the shrub is by no means as attractive as the white sage.

HONEY-DEW.

Dr. Miller's suggestion regarding honey-dew for bees, like all his words, are worth consideration. I presume it would be no advantage to most of us to give us food already wholly digested. Our stomachs are better to do the work. Yet if the stomach is weak or overworked, I think the doctor would speak from his learning and urge food easy to digest, or, better, already digested. We know the bee is always hard-worked in the honey season. We know that, at this season, the bee is short-lived. I did not speak *ex cathedra*, but stated that possibly the bee might be the gainer in gathering honey-dew which was already digested and required no effort on the part of the bee. I still think this is more than probable. I have always felt sympathy for any movement that would lessen the labor of the hard-worked. I have always felt happy when I saw bees gathering freely from aphid secretion. I knew that the honey would be first-class, and I felt that there was a little let-up for the hard-worked bees.

In my article for GLEANINGS, May 1, the word *Gilia* is made to read *Gilio*. May be the *gilia*s would be as beautiful, and as full of nectar, with a new name; but, as with the rose, we prefer the old name.



MEGAPIS, THE GIANT BEES OF THE FAR EAST.

Our Government After Them.

BY FRANK BENTON.

In Charge of Apiculture, United States Department of Agriculture.

A quarter of a century! How time flies! On the 21st of January last, just twenty-five years had rolled past since the first journey to the Orient after Eastern races of bees was undertaken. As the huge Atlantic liner Italy swung out into the broad Hudson on that pleasant winter noon, the good wishes of many of the bee-keepers of Canada and the United States went with a certain little group of three that stood on the main deck, interested observers of the excitement around them—the quick orders of officers, the sound of slipping cables, the hurried footsteps and heaving songs of the agile sailors as they tugged at the great ropes that had just been cast off, the hurried good-byes, and the cheers of crowds on the wharf. The man of large form and good-natured face was none other than our friend D. A. Jones, of Canada. Near him was a “blushing bride” claimed by Frank Benton, of Michigan, who stood opposite the two. “Th-th-ther she goes, Benton!” shouted Mr. Jones, his well-known tendency to stutter just a bit when excited getting the better of him. Fortunately he didn't mean “the blushing bride,” but the bride of the Atlantic—the good ship Italy. No wonder he was excited. We had had a great run up Broadway. Mr. Jones had spent the night with our friend Mr. A. J. King, editor of the *Bee-keepers' Magazine*, which was then published in New York city. Mrs. Benton and I had come over from Brooklyn; and, leaving her at a store on Broadway, I had gone with Mr. Jones to the steamer office to make some final arrangements for our journey. Coming out I said to Mr. Jones: “We've no time to lose if we get that steamer,” and a dash was made up Broadway toward Wall Street, where our valises had been left and we were to change some money.

“S-s-say, Benton, d'y'e know where you're going?”

“Yes, come along, Jones.”

We made our legs move. Whenever I turned I saw his solid form swinging ahead; he was puffing, and the crowds made way. Jones averred that, when a tall man didn't give me the right of way, I never stopped, but simply dodged between his legs, jumped over the boot-black sitting on the curbing,

and scooted on. But, of course, all such claims were due to a lively imagination and the excitement of his mind at the moment. The money was changed, and, with queer-looking pounds, shillings, and pence in our pockets we were again on our way up Broadway.

"D-d'ye know where you left Mrs. Benton?" asked Jones, still excited.

"Yes, over in that drug-store."

Her own anxiety had been not less than his; and it seems, too, that the drug-store man had begun to think that a couple of sharpers, anarchists, or something of the sort had "skipped the country" and left an unprotected lady on his hands. A hurried pull for the elevated train, then we were whirled to the steamer dock. As we left the train a street musician struck up a lively tune on a hand-organ more musical than the majority of them, while his comic little companion did queer antics. Mrs. Benton, with a *penchant* for both the music and the monkey, might have made us miss the steamer, but I got her away, however, by saying:

"Come along, Harriet; Europe's full of them!"

Then followed the days on the great rolling Atlantic. I must pass by much that might interest and amuse—how that worthy gentleman, Mr. Jones, braved the deck when the seas dashed nearly from stem to stern; how he braced himself against the sides of the cabin, holding fast to the rail, and smiled at the awful majesty of the towering billows, then suddenly, growing pale, let go his hold, slid to the ship's rail, and sadly parted with a comfortable roast-beef and plum-pudding dinner he had just enjoyed. All of us paid our tribute to the exacting sea-god Neptune, and were glad when the 15th day saw us safely anchored in the Thames with London's towers in sight.

Then followed the interesting meetings with noted bee-keepers in England, Germany, and Austria, with visits to their apiaries, especially all such as contained bees of any Eastern races, the Cyprians particularly having been cultivated for a number of years previous to this on the continent of Europe. From Trieste, Mr. Jones and myself (having parted company for the time being with the third member of our party) went by way of Egypt to Cyprus, and later both of us visited Syria and Palestine. The older readers of the apiarian journals will recall accounts of the establishment of a queen-breeding apiary in Cyprus and another in Syria, as well as the purchase of colonies of bees in Palestine.

Then, some three months later, Mr. Jones returned to America, bringing with him the first fruits of our Eastern work—queens of the Cyprian, Syrian, and Palestine races, while I remained in the Orient during the three years following, making, one winter, the long journey to India, after the giant bees, which, although obtained, were afterward lost because of serious illness in the jungles. Then followed four years' resi-

dence in Germany, with several trips to the East and two down through Italy and over to the North-African coast (Tunis) after bees. Four years more were spent in Austria, devoted chiefly to the Carniolan race. At last, after eleven years in foreign countries, we again saw our native land and heard the good mother tongue spoken, which during many of these years we had so sadly missed outside of our own little family. There were with us a couple of immigrants who had joined our company—one in Greece, the other in Germany—and whom we had named Ralph and Zoë.

Again, after the lapse of a quarter of a century from the time this first journey was undertaken, I find myself on the eve of embarking upon a still longer one, with similar work before me, not, as before, as a private undertaking, but for the United States government. I am by no means as young, yet enthusiasm remains, and, I believe, sufficient strength to do the work. On the third of June I shall sail from Philadelphia for Liverpool, and, after visiting several apiarian establishments as well as museum collections which will be in the route of a journey southeastward through Europe, I shall proceed from Constantinople to the Caucasus, in Southeastern Russia. A stay of a few weeks in this Russian province will enable me to secure, I hope, a quantity of queens for the department apiary. The race native to this region is most remarkably gentle, and possesses an industrious, hardy character, as well as being a fine builder of white combs. Queens will be mailed direct from the Caucasus to the Department for testing in the Department apiary and at various State Experiment Stations.

Crossing the Caspian Sea, the route will lead eastward some seven or eight hundred miles by rail to Bokhara, thence southward an equal distance over a less known region, where no railways exist, and only travel by caravan is possible. This is across Afghanistan, through the Hindu Kush Mountains, to the Northwest province (the Punjab) of India. The general route eastward will be pursued near to the mountain region, until Calcutta is finally reached. From the time the Caspian Sea is crossed until this last point is reached there are great possibilities in the way of new and remarkable types of honey-bees which are as yet little known, including, of course, the giant bee of India, *Megapis dorsata* (*Apis dorsata*). From Calcutta by sea some ten days are still required to reach (via Singapore) the Philippine Islands. Here one may look for the other species of the giant bees, *Megapis zonati* (*Apis zonati*), with, very likely, also a number of smaller bees.

Along with the search for possible valuable types of bees the securing of seeds or cuttings of valuable honey-producing plants, especially such as have an economic value in addition to the production of honey, will be followed up closely.

Some account of what progress is being

made will appear from time to time in the various apiarian journals, and likewise some possible publication of the Department. Meanwhile the apiarian work of the Department will be in suitable hands, and all inquiries such as have hitherto been addressed there for information should be sent to the Department of Agriculture, Bureau of Entomology.

Washington, D. C., May 19.

UNRIPE HONEY.

This Subject, until a Few Months ago, Considered Quite Unimportant; Now More and More of Our Intelligent Bee-keepers are Seeing the Folly of Such a Practice.

BY DAN WHITE.

Now, Mr. Editor, if you will give me room I will say something again. You know I have from time to time been making strong pleas against unripe extracted honey getting into our markets. I have tried to show the benefits to be derived if every bee-keeper in the land would do his part in this line; but before going any further I will be honest, and tell you that I've been getting quite a bit of free advertising out of my articles. You remember the article that came out last June, headed "Quality or Quantity." Well, sir, orders came all the way from six to eight hundred miles from here for some of that "Fancy No. 1" honey I claimed to have. I wish you could see the compliments and good words received after these far-off customers got their honey. But I *will* tell you this much: In every instance the second and third orders came back with the understanding that they look to me for their honey supply in the future. Then, without any solicitation on my part, families club together, as they can get 100 pounds by freight as cheap as less weight. But, hold on! if I tell much more you will never allow this in print, giving away all this good advertising, so I will switch off and tell my excuse for writing at this time. GLEANINGS, for April 15, is before me. On page 416, an article headed "Unripe Extracted Honey," by E. D. Townsend, inspired me. Say, how I would like to shake hands with Mr. T.! Then here comes Virgil Weaver, on page 297, with his article, "The Production of Extracted Honey," and how to get *quantity and quality* at the same time. I am just as ready to shake hands with Mr. Weaver—yes, and give him credit for being the first one ever to refer or say one word about my article, "Quantity or Quality." You see I have always been so enthusiastic over *quality* I lost sight of every thing else, and actually tried to be so outspoken, and almost say mean things on purpose to see if some one would not come back at me. Think of it! GLEANINGS has been coming to me ever since its second year of existence. Think again! has there

ever been much said through *any* of the bee journals concerning this nefarious practice, as Mr. Townsend puts it, of throwing out the unripe stuff, and by some hook or crook palm it off at the regular market price? What I mean by much never being said, the subject has been one, as I take it, of so little importance, or considered so by the mass of bee-keepers, that they have simply kept still. If we go back twenty years, when, I believe, everybody extracted unripe honey (we seemed to know no better), I was one of the number, but soon learned to know I was doing injustice to myself, was dishonest to my customers, and helping to give extracted honey a reputation that would not only deprive me of a home market but do a lasting injury to the business all over the land. I was just as outspoken some twenty years ago as to-day on this subject, and tried to say something through the bee papers; but, sir, they came back at me by the dozen with arguments in favor of thin extracted honey, and various ways of *ripening*, evaporating, and curing the stuff ready for market. Was there any one to take sides with me at that time? No, sir; I tell you, the way I was handled caused me to feel for years after like a kernel of wheat in a bushel of cockle.

The very first encouragement from any one was a few years ago when the editor of GLEANINGS was ready, and has been outspoken on this line. Now, here come two new recruits in print, and I believe we are about ready to prove to everybody interested in extracted honey that it is their duty to do every thing in their power to help repair the most radical wrong that could possibly happen to the industry.

Much has been said in print and at bee-keepers' conventions about educating the people to buy and eat honey. Are we going to keep on talking and trying to educate the millions whom we expect to consume our products, or shall we turn our attention to the few thousand honey-producers and try to educate them? How different it would be if honey were a food that people *have* to buy, like meat, milk, and many other articles of diet! The authorities would have looked up the dishonest part of it, and enacted laws to protect the people long ago. Supply and demand make the price on almost any thing. If people buy honey that just suits them they not only buy again, but they take special pains to speak of it to their friends and neighbors—yes, and even if it is the right quality, and *extracted honey*, they will put it on the table for their visitors. But if they buy honey they do not like they can hardly be persuaded to buy again; and if any thing is said about it to neighbors and friends it will not be words that will persuade them to buy. Can any one imagine the damaging effects on the one side that have been going on for years? Then, on the other hand, had nothing but a high grade of honey ever got into our markets, I for one can imagine, at least, that the supply of today would not equal the demand, and our product would be bringing better prices. I

could refer to hundreds of instances to prove the stand taken in the matter. There is no end of positive proof; but for the benefit of our friend Weaver, and I hope others, I will say something in the way of production of extracted honey. All that friend Townsend tells us is true. He has learned from experience. He says we must have a good supply of surplus combs; and I will say the best investment I ever made was to get stocked up with plenty of combs. Without them I could not get quantity or quality. I have my own way of manipulation that came to me as circumstances demanded, and I do not feel satisfied unless I think I am working my bees for every ounce of honey possible.

My first work in the spring, before bees are too numerous, is to see every queen and clip her wings; and as the season advances I make the strong help up the weak by stealing, I call it—hatching brood-combs from the strong ones, and giving empty combs in place of them. In this way I have my colonies well evened up and all strong ready for business through the honey-flow. Honey is what I want, and not swarms; and I am quite successful so far as swarms are concerned. As soon as surplus commences to come in I begin to put in my surplus combs, using a division-board, and from day to day I put in combs until my chaff-hive chambers are filled with 12 or 13 combs. If honey is coming in rapidly, the critical time is at hand; and if I could not look back and see plenty of empty combs I should say the time is both serious and critical. The critical time is at hand because swarms are liable to issue—no room for honey in the hives. It would be serious to commence extracting, you know. I won't do that, so in this case I commence to get my increase by simply taking a few combs of best brood from No. 1, with enough bees to care for them, putting my empty dark brood-combs in place of those removed; then pass on to No. 2 and do the same.

I actually like to have swarms commence to issue. I can then simply cage the queen, and can go on as before; and the swarming tells me the ones that need my attention first, and I have the queen and a flood of bees out of my way while doing the work. Now, I don't make a new hive of bees from each old swarm, but put them in from different hives, until I get the required number of combs. I try to use good judgment in just how little and just how much to take away from each colony, and leave them in the best possible shape to store lots of honey.

I now think you can understand so far. You see, I have made quite a number of new colonies by the time I get over my apiary. With the hatching brood I gave them they will be strong with bees in a few days. With our usually short honey-flows I can't expect them to carry in much, so I call them my honey-ripeners by going from hive to hive as I am called, and taking combs first filled from the old hives and putting them over the new hives, using judgment as to how few and how many to take

from each, putting in place enough empties to give them ample room. I should say I brush bees off all combs of honey before carrying to new colonies. In case I have any colonies that, for any reason, they never call for, their surplus room quite filled with combs, I use the room for combs filled by other bees for them to cure or ripen. This manner of manipulation has been very satisfactory. It has almost stopped all swarming after I got to taking away honey and putting empties in their places. I have fixed it so I can have nothing but perfectly ripened honey to extract any time after the season is over.

I am not claiming my manner or way of manipulation is the only one. I have no dictations to make on this line. If any one has Simplicity hives they can be tiered up according to the strength of each colony. If you have the combs at hand, that is all that is needed. If you have not the combs, get full sheets of foundation on wired frames, and set your bees to comb-building. If you are one of the many who extract from the brood-nest, stop it; get the extra combs, and your wife will not ring the bell or send the children to the field to come and hive the bees once where she now has to a dozen times. Let the extractor rest until the honey is thoroughly ripened; then take out some and you can always be proud to mention the quality of your honey to your neighbors and friends. Tell them they can always depend on getting this good quality of honey from you. Then never disappoint them. It will take time and patience to get their confidence fully. You see it is hard to forget that they at some time had paid their money for poor thin honey—some, may be, that actually soured. Take my advice, and you will see the people asking for your honey. You will eventually have a good home market and get a lasting reputation all over the country. Your ancestors and the coming generation will remember you as one not only interested in the welfare of the bee and honey industry during your life, but as one who had done all in his power to educate everybody in the right direction.

New London, Ohio.

[While it is possible that our friend Mr. White may get a little free advertising for his good honey, we are willing to give advertising of this kind to any one who is willing to make a hobby of letting honey ripen on the hives, and ripen thoroughly, instead of extracting it before it is ripe. Our readers will remember that, some years ago, I came to the conclusion that honey that was left on the hives a month after being capped over had a richness in flavor, and a body, that honey just capped did not have. It may be that, in some localities, honey can be extracted the minute it is capped over; but in most of the Northern States, I will venture to say, there will be an added flavor if the honey is left on a while longer. The first-gathered honey can be extracted to supply first orders, of course; and it should be un-

derstood, too, that the first new honey, like the first strawberries on the market, usually brings the highest price, even if it be not ripened down to the fine point described by our correspondent.

Mr. White's method of manipulating his combs to let them ripen is one that he is compelled to follow by reason of the fact that he uses the old chaff hives, which can not be tiered up. When a colony is supplied with thirteen or fourteen combs, instead of extracting, as many would do to get more room, returning the combs, he takes those same combs and puts them on another colony which he has made up as he describes, where they will continue the process of ripening. If he were using hives such as we are using, tiering up three or four high, he would be spared this trouble.

Mr. White speaks of the fact that, when an article is *really first-class*, purchasers of it will be inclined to tell their friends about it. There is such a thing as getting so much goodness or value into a thing that it sells itself. As an illustration, I think that at least a dozen people have recommended to me the Gillette razor that does not need to be sharpened. I was urged to take one on thirty days' trial. I did so, and now I am recommending it to my friends—not because I am interested in the sale of it, nor because I get a commission, but because I like to help my friends by telling them about a really good thing. The Gillette people do not advertise in our columns, so there is no ax to grind in making this statement.

To illustrate again, we have a few customers who send here for maple syrup of a certain brand. There is a certain farmer near here who never has to find customers for any of his maple syrup. The scramble is to see who will be able to get some of his fine goods, for everybody tells about this man's syrup.

Well, to come back to our subject, our friend Dan White is one of those men who produce a strictly fancy extracted honey that is *in a class by itself*. Why is it fancy? Because he lets it ripen on the hive. He has never complained about having trouble in selling honey. The fact is, he can never produce enough to take care of his trade.

For years Mr. White made his boast that the uncapping-knife goes over every inch of his combs before he extracts. I have been in some extracting-yards where not all the combs were capped over; and I have heard complaints concerning the honey coming from those same yards, that it was adulterated because it tasted queer, when, as a matter of fact, it was pure honey, but not ripened as it should have been.—ED.]

A FEW OF THE HONEY-PLANTS OF CUBA.

BY LESLIE BURR.

PAMAROSA.—The greatest honey-producing plant, if you count the individual blossoms, is the pamarosa. It is a tree that is found quite generally along our mountain

streams, and has a heavy dark-green foliage. The blossom is a fuzzy-looking ball about the size of a woman's fist. The center of it is a cup, half to three-quarters of an inch in diameter. You look into one of those blossoms (a bee has just left it). All you see is the smooth shiny cup; but look again in a minute and there are two or three drops of nectar at different points inside the cup. This the blossom continues to do all through the day. As one bee leaves with a load another takes its place. Each blossom is continually worked from morning till night.

MANGO.—This is a tree that has a habit of blooming at all seasons of the year. Some trees bloom every month in the year. But it matters little to the bee-keeper how many general periods of bloom the mango has, he can count on getting honey from but one of them. That is generally in February or March, at which time the bulk of the fruit is set.

ALGAROBA.—Besides being a honey-plant this is one of the grandest shade-trees in the world. The trunks of those trees, "fifteen or twenty feet above the ground," branch out into several large limbs which form a giant umbrella, giving a dense shade all through the summer.

BLACK MANGROVE.—This grows on swampy land near the sea, "which is also the home of the hungriest mosquitoes in the world," which is one reason why I know but very little about it. But I can say this much: I have seen it in bloom, and a bee-yard but a short distance away, and not a bee to be found on the blossoms.

ROYAL PALM.—This is one of the most valuable plants to the bee-keeper. Plenty of royal palms, and the problem of summer pasturage is solved—that is, if they are of the right kind, for there are two. The Cubans call them "palma real" and "palma creolla." The first grows very tall, with a spindling trunk, "which, as it grows taller, shrinks in diameter." It seldom blossoms, and when it does the clusters are small and bear but very little fruit.

The "palma creolla" grows but about half or two-thirds the height of the first kind, and the trunks average about twice the diameter. It blossoms regularly, there generally being two bunches of berries that can be cut at the same time. The buds are great green pods four to five feet long, and six to nine inches in diameter. I have seen bunches of these palm berries that, when cut from the tree, were all that a man cared to lift off the ground.

Then, again, the royal palms do not grow to a great extent all over the island. There are plenty of them in the provinces of Pinar del Rio and Havana; but by the time you get to Santa Clara they are few and far between—so much so, in fact, that the natives tatch their houses with grass.

Puerto Principe is a land of woods and jungle, just one solid mass of vegetation, but lacks the royal palm for summer and the bellflower for midwinter. If it had those it would be a bee-keeper's paradise.

Santiago de Cuba has a few royal palms, but they are mostly of the kind that are of little or no value to the bees.

COCOANUT PALM.—This is classed by both English and Spanish writers as a good honey-plant; but what I have seen of it (and I have something like a hundred of them near by) the bees pay but very slight attention to it.

VINES.—The principal vines are the bell-flowers. I think the bee-keepers in general have a wrong impression of those plants. For instance, in GLEANINGS for last August a writer speaks of introducing the aguinaldo into the North. This might be done with the campanilla marada, or, as some call it, the aguinaldo marado; but the white bell-flower, or Christmas pop, or, as they call it in Spanish, "campanilla blanca" or "aguinaldo blanco de la Pascua," is a different thing. You might just about as well talk about growing cocoanut palms on the shores of Lake Michigan. It is a plant that keeps its foliage every month in the year, and lives as long as the trees to which it clings. I have a vine here near my door, a taffy-colored twisting thing, which I find, on measuring, is eight inches in circumference.

"Bejuco tortugo" is a vine that can not be depended on to blossom every year; but by blooming the year that the Rambler was at Taco-Taco it made it possible for him to do what he did. The vine in appearance is like a heavy ribbon that has had threads drawn on each edge, causing the center, which is longer than the edges, to alternate back and forth in a series of cuplike hollows, and on the bottom of each cup is a thorn. It blossoms in the fall, causing the bees to breed, swarm, and every thing else.

I will also add, for the benefit of those who advocate thoroughly ripe honey, never fuss with tortugo honey. If left any length of time in the combs it ferments, causing the combs to look as though they had "taken a trip on the hog," and after you get it in barrels you are still not sure of it, as there is danger of its breaking loose when you handle the casks.

Casanova, Cuba.

HIVING SWARMS ON COMB OR FULL SHEETS OF FOUNDATION A FAILURE IN IDAHO.

Plain Sections Not Popular.

BY E. F. ATWATER.

"With many there isn't one chance in fifty of a swarm swarming again any way, whether hived on combs or foundation."—Stray Straw, page 531, 1904. May be; but here in the arid West it is decidedly unsafe to hive a swarm, either forced or natural, on combs or full sheets of foundation, for comb-honey production. For three years I have persistently tested this on a large scale, and I know that a large part of the swarms hived on either combs or foundation will soon be ready to swarm again.

"More rapid progress is made" at clog-

ging the brood-nest with honey, even with the prolific Carnio-Italians, while much of this honey goes into the supers when the swarm is hived on starters.

However, if the swarm hived on combs or foundation does not attempt to swarm again, the results will be fairly satisfactory, as a rule. Hiving on combs of sealed brood *a la* Hall and Dr. Miller, is a failure here unless with a ripe cell or a virgin, instead of a fertile queen. Using the forced-swarm plan largely, and hiving on starters, we have no fear of the bees carrying black comb from below to finish sealing sections.

To make a success of hiving on starters, the brood-nest for the new swarm must never exceed eight frames of standard size except for the first few days. About six-frame capacity is very good, though we usually contract by the use of two combs of honey or honey and brood.

The super must be so attractive that work will be resumed in it as soon as the swarm is hived; or, in other words, a super containing several bait combs, or one begun either by the parent colony or any other colony, must be used on the swarm. When Dr. Miller establishes his bees on their summer stands let him place the pairs several feet apart and he will likely secure much better results with the forced-swarm plan. Every year I like the plan better, and every year I place the hives further apart, or in some other way make each location as distinct as possible. I have a new plan to secure this result, which I shall test, and, if satisfactory, will illustrate it early in June.

Mr. W. K. Morrison is badly mistaken in thinking that the use of starters is necessarily a step backward. Let Mr. Morrison tell us how to prevent swarming profitably, for comb honey in outyards, in this locality, if he can; but don't dare to recommend his pet manipulation as outlined in past numbers of GLEANINGS, for such is worse than useless here; "hence any criticism based on the (non) use of starters is worthless." Yes, and tell Mr. Danzenbaker that the Danzenbaker-Root-Morrison plan of reducing to a single story full of brood, with a laying queen and baited supers above, has not been known to prevent swarming in a single instance in this locality; but a surer method to induce swarming can scarcely be devised.

Now a word in regard to sections and supers. I have never purchased a well-made fence separator from any firm except The A. I. Root Co.; but even when properly made they do not please me. I am discarding both the 4½ plain and the 4×5 plain, in favor of the old standard, the much-abused "squatty old woman," the behind-the-times old sections that a writer in GLEANINGS once said should be taken and "stamped out of sight in the mud." Foolish? Never mind; our western markets all specify "no more 4×5 sections," etc., and I have other reasons. The plain section with a plain cleated separator may yet take the preference. You have also taken a step in the right direction by reducing the thickness of the

cleats on the fence from $\frac{3}{16}$ to $\frac{1}{4}$ inch. And my 600 new supers will be single-tier wide-frame supers with the bottom-bar, on which the sections rest, $\frac{3}{8}$ thick, and a top-bar, *not nailed tight*, but only one small nail, not cement-coated, in each end. The little $\frac{1}{4}$ -inch bottom-bars to section-holders should be discontinued, as they are pitifully frail. The largest producers around here are using supers as described above.

Meridian, Idaho.

[We should be glad to have you give your later plans.—Ed.]

ARE SOME OF THE NEW IDEAS IMPROVEMENTS?

Unspaced Frames Resting on Plain Rabbits
Make the Most Convenient Hive; and
Frames Best for Holding Sections.

BY F. GREINER.

Since keeping bees for a livelihood, now about thirty years, I have kept watch for the most convenient form of hive, one that would answer my purpose best, and I firmly believe that the very simplest hive with a common hanging frame, no spacers, is best suited to my wants. Not using metal rabbits, the top-bars of my frames are sufficiently "glued," in that the hives with bees in them can usually be moved about on a spring wagon without taking any precautionary measure to keep frames from swinging, and still they are not glued in so solidly as to interfere materially with the handling of them when it becomes necessary. In the years gone by I have spent a great deal of time rigging up my bees for moving *uselessly*. The half-story hives led me on to try moving full-story hives without securing the eleven-inch-deep frames from swinging against their neighbors. Now the getting ready of a load of bees is a very short job.

During these years I also had an eye out for the most convenient super. All sorts were tried. Our inventive spirit hit on things long tried before by others, and also on some that have never been tried since. The best invention was original but not new. I refer here to the wide-frame super, which I regard as the very best and far ahead of any of the new-pattern supers. Why the Root Co. ever dropped this is not clear in my mind. The few bee-keepers hereabout, who are using the wide frame exclusively, are well satisfied with it. Some other friends near Syracuse are using it, and do not want any thing else. The only objection that is ever raised against the wide frame is that the filled sections can not be taken out as easily as from some other supers; but this objection exists only in the imagination of those who have never used it. Friends who have visited me when I was emptying full wide-frame supers were surprised at the ease and the rapidity with which this work was being done. But supposing sections should come out a little harder, is it not

worth something to have the *tops* of our sections so protected that the bees can not soil them while on the hive?

If it is desirable to have the sides of the sections covered, is it not equally desirable to have the bottoms covered? and if it is desirable to have the bottoms protected against being soiled, as in certain styles of supers, why not protect the tops, the parts which meet the eye of the would-be purchaser above the other parts? It looks to me like a huge mistake that other supers were ever adopted. I have tried a dozen different makes, have half that number in use now, among them 50 T supers, but the wide-frame super is by far the best in every respect, the T super being open to the most objections.

The pleasures of bee-keeping are greatly enhanced by using convenient hives and appliances. The wide-frame super is one of the things which help to increase our pleasures.

In using the wide frame as a section-holder there are no objections against also using no-beeway sections with it. I have fitted up over 200 supers in this way, and have had them in use ever since the no-beeway sections were adopted by others. I also use the beeways, having an equal number in use. The advantages and disadvantages are, as a matter of course, constantly and vividly kept before my eyes. After giving the matter due consideration I have arrived at this conclusion. It is another great mistake that bee-keepers made when they dropped the old-time honored $4\frac{1}{4} \times 4\frac{1}{4}$ beeway section. They have gained nothing by doing so, and produced a deal of confusion. It is said that honey in no-beeway sections brings more money in the market. I ask, "What market?" Not the hundredth part of a cent's difference is made in the markets I am acquainted with. There is no demand for no-beeway section honey *above beeways*.

The expert can handle no-beeways just as readily as beeways; but the retailer spoils many a no-beeway box in handling it when he would not the beeways. Veneering partitions in the shipping-cases are of some help, but do not entirely overcome the difficulty, besides making shipping-cases more expensive.

The cleaning of cleated separators and fences is slower work than that of plain separators; and, while this may not count for much, still it is a point in favor of beeways.

Naples, N. Y.

[When you speak of wide frames I am not sure whether you mean those holding two tiers of sections, that is, eight in all, or one holding only one tier, or four. The latter was never made by us to any extent, and consequently we never abandoned them as a feature of hive construction. The double-tier wide frame was supplanted by the T super; and I know of scarcely a bee-keeper now who favors them, because, to give the bees a double tier of sections at once, is ac-

knowledge almost everywhere to be too much of a good thing; and I therefore conclude that you argue in favor of a single-tier wide frame holding four sections.

We find this question of preferences for frames, sections, and hives is based largely on what one is used to, or has had the most experience with. This is particularly so in all walks of life, especially toward middle life, when age grows conservative. I find it so in my case. While I believe you to be perfectly candid in your judgment of plain and beeway sections, yet the reports that come to our office are about two to one in favor of the former.

Our own market most decidedly prefers no-beeway sections, and, as a rule, pays more. Some two or three years ago Hildreth & Segelken, of New York, very strongly urged a tall section which was also a plain one, for their market—not that they were willing to pay more per lb., but because the honey in such boxes averaged better, and therefore brought more money. In our own experience the plain boxes grade higher. The same comb without the beeways looks to many people fuller than it does when the beeways are present.

I will admit this is largely a matter of opinion, and only time can decide what will be the universal box or section.

But this fact should be taken into consideration—basswood is growing scarcer yearly. The no-beeway box uses *over six square inches less of lumber, one-eighth thick*, per section, $4\frac{1}{4}$ size, than the beeway section for the same capacity. It is also sold cheaper by the dealer by 2¢ per thousand. As the time may come when basswood will have to be abandoned for one-piece sections, shall the bee-keeper or producer hasten on the consumption of this valuable timber by using that section which uses up timber the faster, or to put it another way, waste it? I hesitated very much about saying any thing about plain sections in these columns; but what I have said I have endeavored to give without prejudice. And yet it should be said the plain section and fence is not patented, and can be made by any one. There is, in fact, just as much money to the manufacturer in the one as the other.—ED.]

THE PRINCIPLES OF TROPICAL BEE-KEEPING.

Queen-excluder Boards Indispensable; Strained Honey Cheaper than Extracted Honey.

BY W. K. MORRISON.

Tropical bee-keeping differs perceptibly from that of northern latitudes—at least this is the reason given for the inferior quality of much tropical honey, hence we hark back to first principles. However the conditions may differ, the merchants of London, Havre, Antwerp, and Hamburg are unanimous in demanding first-class honey

from their consignors, hence we shall have to keep this fact constantly in view.

One of the first requisites of a first-class honey is colorlessness. It should appear to be the color of water if possible; if not, the nearer the better. It should be free from extraneous water—practically dry. It should be free from peculiar odors. The problem is to get a honey to conform to these specifications. Perhaps nothing can better illustrate what I have to say than the frank and free admission of Editor Hutchinson, of the *Review*, that raspberry honey is colorless *provided it is extracted from new combs*. This is a terrible admission to make, but it is going back to first principles simply to state it. It follows from this that combs for extra-fine extracted honey must all be made anew every time, and queen-excluders must be used. There are not enough zinc queen-excluders used in the tropics—at least not in the West Indies and on the Spanish main. Not to use excluders on hives means inferior honey—at least the European commission dealers will class it so. Going a step further, it is true, as Editor Hutchinson says, honey must be extracted from *new combs* to be colorless.

Some one will hold up his hands in horror at the bare idea of not using good combs a second time; but this is precisely what is aimed at. If very high-grade honey is wanted, don't extract from combs that have been used once. Better get nice new combs every time. This brings us to the fact that queen-excluder zinc is one of the greatest inventions connected with bees.

Some people with notions of economy try to get along without a queen-excluder on every hive. No modern hive is complete without it. But there are other and even weightier reasons for its use. Wax is one of the most valued products of the honey-bee, and we of the tropics hold a great hand in its production. If we prevent the bees from making new combs they will simply drop their production of wax on the floor of the hive in a fluffy pile, and a valuable product is lost.

You can not stop bees in the tropics from making wax; you can only prevent them from constructing combs. They make wax any way, so it is best to let them utilize it in making combs for storing honey. In the North, where the seasons are short, sharp, and decisive it may be best to use the same combs over and over, but this is not a good principle to follow in the tropics. Then a tropical bee-master has his weather eye constantly on the wax-pile; and if he desires plenty of it, of fine quality, he simply *has* to have queen-excluder boards on all his stocks. If the brood-chamber combs have been built on good Weed foundation, as they ought to be in every case, it is amazing with what rapidity the colonies will build drone comb above the queen-excluder every time they get the opportunity. Then, also, it is simply "sport" to make wax from combs that have never been used as breeding-nests.

It requires no refining, pressing, bleaching, or other manipulation to cleanse it. It only needs melting in boiling water—nothing more. Therefore we get wax with a minimum of effort.

Where wax is being striven for, it is well to allow the combs to be completely sealed over, also not to allow the bees to build thick combs. The honey ripens faster, and there is proportionately more wax in thin combs. If the combs are cut out and put in muslin bags to drain out the honey, one man may manage a great many hives (say 500). There is not the mussy, tiresome job of uncapping, and the still more tiresome task of turning the handle of an extractor. Some may say, "But what about the diminished yield?" How do they know that the yield is less. As a matter of actual experience it does not appear to alter the yield of honey. But if it did we could still afford to follow this plan for the reason we can attend to a far larger number of bees this way. By getting clear of these heavy tasks we are the better able to devote our attention to the bees themselves; but there still remains the task of taking off the honey from the hives and replacing the empty chambers with starters. This is not easy work as it is usually done, but the bee-escape paves the way for easier labors. Usually tropical apiarists get along with a few escape-boards. Where one has 400 colonies, 50 escapes will be none too many. A good wheelbarrow or cart also reduces the labor; and if the hives are all under shed (as they always should be), and the hives arranged at a convenient height, labor is conserved. The bee-shed is a labor-saver of the first rank.

Personally I never use a brush, finding the bee-escape infinitely less trouble and annoyance; besides, a brush irritates bees too much to be satisfactory. Here the Heddon dictum comes in, to handle hives, not frames, therefore "don't handle the frames till they are inside the honey-house" is a good principle to follow. Three or four good honey-tanks are absolutely necessary for rapid easy work, but these need not be large, as, by this system, there is no need to "settle" or skim the honey; here we can not follow the customs of Northern and Western apiarists, for, to keep honey in an open tank in the West Indies, spells ruin. Put it into the 60-lb. tins the same day it is made, and seal tight, and remember a few rusty spots will discolor 60 lbs. of honey.

THE HOFFMAN FRAME.

It has Come to Stay.

BY HARRY LATHROP.

Mr. L. Stachelhausen, in the *Rural Bee-keeper* for May, comes out in quite a long article against the Hoffman frame. It is too late to try to disparage this frame or to

try to stem the tide in its favor; and be it known that bee-keepers use and prefer it for its own sake, and not because it has been favored by manufacturers. The use of the old-fashioned loose hanging frame, as compared with the Hoffman, reminds me of what the colored porter on the sleeping-car said about being wrecked. Some one asked him which he would prefer, if he had to suffer either, to be wrecked on the ocean or on the train. He said he would prefer a train-wreck by all means, "for," said he, "if de ship goes down, den *whar is yo?* But if de train wreck and leave de track, *dar yo is.*" If you place loose hanging frames in a hive, "whar are yo?" No one knows what condition will be found on opening a hive. On the other hand, if Hoffman frames are put in a hive, "there you are." You are sure of straight combs that can be interchanged if necessary.

I started an apiary here at Bridgeport with sixty colonies of bees in Langstroth hives with hanging frames. Now I am making ready regular Dovetailed hives with Hoffman frames, and will discard the whole outfit as fast as I can make the change. I have ordered a German wax-press, and will melt up those combs and use the wax for full sheets of foundation in the new frames.

I used loose hanging frames long before the Hoffman frame was brought out by the editor of GLEANINGS, and thought they were all right at the time. Of late years I have been using the Hoffman frame in my home apiary, and now find that I can not tolerate the other. They are all right for the extracting-super, and so is the Hoffman if seven are used in an eight-frame hive-body. When the combs are filled out plump the end-bars will not interfere with the knife to amount to any thing.

Bridgeport, Wis.

FIRST PRIZE, SWARM OF BEES.

Some Queer Freaks of Swarming.

BY E. R. ROOT.

A little boy who wrote a composition on bees, said that they "swarm mostly on Sundays when the folks are away to church, and generally on the tops of tall trees where you will have to climb for 'em." Doubtless the boy had had some "experience" when he came from Sunday-school, of a kind that gave him a forcible reminder, in the shape of torn trousers and scratched hands after the encounter in midair in helping to bring the bees back to mother Earth.

In the picture of the first-prize swarm shown herewith, it appears that the bees were much more accommodating. Whether they came out on Sunday or not, Mr. Errett does not say; at all events, we have absolute proof that they clustered low on a little tree, and so great was the weight of them

that they bent the tree downward, where they could be easily hived. The most accommodating swarms, no doubt, are those that cluster on low bushes; and this tendency the bee-keeper himself can encourage to a great extent by locating his yard in an orchard of low trees where an ordinary

step-ladder or common house-ladder would reach them easily. In our home yard we have grapevine trellises in front of each hive, not over seven feet high, primarily for shade; secondarily they serve a very useful purpose in enticing stray swarms; and experience shows that not one in ten will



FIRST-PRIZE PHOTO OF A SWARM OF BEES BY A. L. ERRETT, MADISON, PA.

alight on the tall evergreens outskirting the apiary.

Two Sundays ago our Sunday watchman (for we have such a man to look after our plant to give notice in case of fire and sometimes of swarms) reported that a swarm was out. As the boys were away, it became my duty to hive the bees. But this Sunday swarm, departing from the usual customs of swarms at the Home of the Honey-bees, saw fit to fly high and to hover around near the top of one of our tall evergreens, something over 30 feet high. As if to be less accommodating still, it separated into three clusters, each cluster being over 20 feet above the ground. I soon brought into play a step-ladder and a Manum swarm-catcher with a sixteen-foot pole. I jarred a part of the bees of each cluster into the basket of the catcher, closed the lid, then stood the machine on its three legs with a bunch of bees inside of the wire-cloth basket in the air. With a long pole I then began a systematic and persistent pounding on the three limbs on which the bees had been hanging previously. The large bunch of bees in the basket in the meantime began calling, and in a few minutes the rest of the bees deserted their lofty elevations and clustered on the outside of the wire-cloth basket with their fellows. In a few minutes more I had them dumped into a Danzenbaker hive.

Our special prize committee, or committee whose duty it is to award prizes on these photos, did not assign any reason why this particular one should be given first honors; but if any one of them had had the experience of climbing an elm-tree to bring down a swarm, he would probably give a picture showing a swarm close to the ground the first consideration, irrespective of the merits of any other pose or detail in the picture.

The particular swarm here shown is evidently a large one, weighing not less than 10 lbs., I should judge from the appearance, and the further fact that a fruit-tree having a trunk over an inch in diameter was bent clear over.

Speaking of large swarms, the heaviest one we ever had weighed 15 lbs. Estimating 4500 bees to the pound, which is very nearly right for bees of a swarm, we have an aggregate of 67,500. This particular swarm before us could scarcely have weighed less than 10 lbs., so the number of bees would not be less than 45,000.

There is nothing like the weight of numbers, either in the bee world nor in that larger world in which we live and have our being. I concluded, therefore, that the accessibility for general hiving purposes, and the size of this particular bunch of bees, were some of the deciding factors to cause the committee to award the prize as they did. And that leads me to say that the com-



THE CABIN IN THE WOODS AND ITS SURROUNDINGS.

mittee met in executive session, and that their doings are as secret as those of a grand jury.

THE CABIN IN THE WOODS.

Some Glimpses of the Surrounding Woods.

BY A. I. ROOT.

After the convention at Central Lake was over—see page 496—I was planning to make a call at the cabin, where one of my neighbors was making maple sugar right in the height of the sugar season, the first week in April. Bro. Hutchinson had been wanting

to see my ranch for some time, and so he went along with me, taking his camera, etc.; and the beautiful views we submit to you in this issue are some of his work.

The one on p. 661 gives us a view of Grand Traverse Bay as it appears from the lawn in front of the cabin. Behind those large trees on the right of the picture is "Dick Bassett's Island," of which you have probably heard—the Robinson Crusoe island of America. The ground goes down so abruptly toward the bay that the brush you see sticking up in the center of the picture are the tops of tall trees, some of them evergreens as you will notice. The land visible a way off across the bay is the peninsula or tongue that shoots down from the north.



A GLIMPSE OF ONE OF THE OLD LUMBER-ROADS THROUGH THE WOODS ADJOINING THE CABIN.

On this tongue of land, almost surrounded by water, are the Ne-ah-ta-wan-ta Hotel, Old Mission, and other celebrated health resorts.

The cabin itself, I need not mention to tell you what it is. On top of the hill back of the cabin you will notice that beautiful combination of maples, beeches, and evergreens which I have so many times described. You can distinguish the maples by the bright new tin sap-pails hanging to the trees. You can get a little glimpse of my strawberry-patch between the house and the trees on the hill. Our flower-garden is on the right of the picture near the door-step. The peach-trees you will see scattered in the front yard, and clear up among the forest-trees, where we cleared the forest away. The little kitchen with its white brick chimney rising above is the spot where Mrs. Root and I spend so many happy hours. It is so diminutive that, when we are both in the kitchen at once, we are necessarily pretty close together. But that did not make any trouble at all, any more than it did when we were in our teens instead of being over sixty years of age.

The water-pipe from the spring away off in the opposite corner of our forty acres comes right up near the kitchen door, and it gives water enough so I enjoy experimenting with strawberries and other garden stuff

under the influence of abundant irrigation. On the sandy loam around the cabin there is not much danger of overwatering.

Mr. Hutchinson and myself I need not describe. You know us both, or at least every bee-keeper in our land ought to know us. You can not very well afford *not* to know Bro. Hutchinson, and I do not think you can afford to omit taking his journal.

I could talk all day about the things I love in and around that cabin, but we must hasten on.

Let us now get down to the sugar-camp. We will take the path that leads from that little kitchen down the hill into the ravine, and here is what we find.

You will recognize me by my fur cap, and because my head is so near that of the horse. One of the Spencer boys is on top of the barrel of sap. They draw their sap with a light buggy because they happen to have it, and it seems to be very convenient in getting over rough places in the woods. Mrs. Spencer, who bosses the camp week days, and superintends the Sunday-school on Sunday, is standing in the sugar-house door; but the picture is hardly accurate enough to give us much of a glimpse of her. She is one of God's jewels—one of the kind who love righteousness and hate iniquity, for her children's sake if for no other reason; and



THE SUGAR-HOUSE AND SUGAR-CAMP NEAR THE CABIN IN THE WOODS.

I rather think she likes maple sugar also. I wish Bro. Hutchinson had taken a view of the inside of the sugar-house, for it was the neatest-looking place inside I ever saw for an establishment of that kind. All the tin and brass work of my new apparatus was shining bright. Every thing was swept up; all the utensils were hung up in their proper places, and it occurred to me then that a woman could supervise maple-sugar making better than any man. Her big stout boys do so much of the hard work that she is spared the heavy lifting. And, by the way, there are two of about as nice Spencer girls in that family as were ever found in that woods or any other. One of them is named Fern; and if you could see her you would think the woods a very proper place for such a girl, and the name a very appropriate one.

The big man standing up alone is the driver who brought us over from Traverse City. Bro. Hutchinson instructed him how to "press the button" when he was taking the picture of Bro. H. and myself. Ernest insisted on an enlarged view of both of us. I did not know it was enlarged until he had it done, and I insisted that it was not worth so much space. I suppose it is just about as we looked when we had our many pleasant talks during that beautiful spring day in the woods. It just occurs to me that Bro.

Hutchinson is sitting on the big white stone where I used to pound my beef-steak when Mrs. Root was gone, and I was there alone. You need not be afraid to sit down to a dinner of beef-steak when you come to visit us, because, if Mrs. Root is around, she will not allow any of my backwoods methods of getting dinner.

On page 659 we give you a glimpse of one of the old lumber-roads. The big lumber was cut off some thirty or forty years ago, and an undergrowth has sprung up so thick you can hardly crawl through it in many places. Right back of where I stood there is a stump of a large basswood-tree. I do not know when the tree was cut, but you will notice there are almost a dozen young basswoods, some of them nearly a foot in diameter, that have sprung up where the old tree was cut down; and basswoods will do that every time if you keep cattle away from the young shoots. The old lumber-road in the foreground was worn smooth and hard years ago, and now in many places it is covered with a beautiful soft moss—nature's upholstery. This old road makes one of the beautiful winding paths through the woods where the children go to day school and to Sunday-school. Mrs. Root and I often remarked what a bright picture it was to see the neat tidy children,



GRAND TRAVERSE BAY AS VIEWED FROM THE LAWN IN FRONT OF A. I. ROOT'S CABIN.

with dinner-pails, passing through these lovely wild-wood paths every morning and evening.

Perhaps I had better stop now before I give you any more of a fever to have a cabin of your own somewhere out in the woods. But I do think, dear friends, that a lot of us would find health and happiness by kicking out of the traces of fashion and folly, and going out to such a sylvan retreat where we can wear out our old clothes, and live on as many dimes as it costs us dollars with all the paraphernalia of the towns and cities that we may live "in style."

**DR. MILLER NOT THE ONLY MAN WHO
USES NAIL-SPACED FRAMES.**

**Why Italians are More Proof Against Foul
Brood than the Blacks.**

BY R. BEUHNE.

I have been greatly interested in the many articles on Hoffman and other frames. In a footnote to spacing frames, page 1158, you say: "I wonder if the doctor is the only one who uses nail spacers to any extent." I may tell you he is not. I have

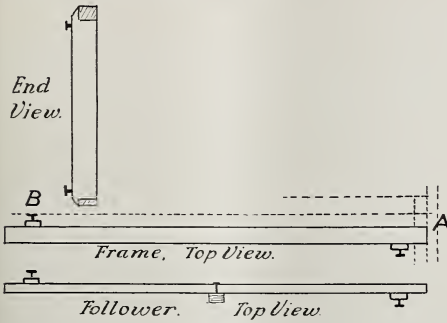


A. I. Root.

W. Z. Hutchinson.

A COUPLE OF BEE-JOURNAL EDITORS HAVING A DISCUSSION.

used nail spacers for about ten years, and all my frames (260 colonies) are nail-spaced, and I know of at least six other apiaries and several others the owners of which are going to discard the Hoffman in favor of nail-spaced frames as they require fresh supplies. All these apiaries are run for extracted honey, and for that very reason the nail spacing has been adopted.



With a frame as shown in the drawing, the objections you have so often urged against nail spacing do not exist. The nails do not catch in the extractor-baskets when the frame is dropped into the side nearest the operator and with the top-bar to the left; and they are not in the way of the uncapping-knife as top, bottom, and one side-bar are level on each side. I use a twelve-inch knife, stand the frame on one end, top-bar nearest to me, and draw the knife upward from A to B, uncapping the whole face of the comb in one cut, top and bottom bar acting as a gauge to the beveled edge of the knife. In this way I can uncap five of these frames to two Hoffmans.

The spacing is $1\frac{3}{8}$, nine frames and follower in a ten-frame body for brood, and nine frames without follower over a queen-excluder. One hive-wall and the follower have projections to match the frames, the follower being tightened by a piece of $\frac{1}{2} \times \frac{1}{2}$, with projecting nail resting in cut in follower.

The frame is made, top-bar $\frac{7}{8} \times \frac{1}{2}$; side-bars $1\frac{1}{8} \times \frac{7}{8}$; bottom-bar $\frac{7}{8} \times \frac{5}{8}$. Top and bottom bars are of white Baltic pine, which is much stiffer and only half the price of American lumber (here).

In reference to immunity of Italians from foul brood, page 1144, there is, here at any rate, no doubt on the point; but the reason? You say possibly blacks, being more inclined to steal, might account for it. Why, I always thought Italians kept free from foul brood because they were much better at removing any foreign substance, dead larvæ, or wax-moth grub from the comb than blacks.

At the autumn overhaul of colonies I found five cakes of foul brood all in colonies of blacks, of which I have only seven stocks. I killed all the black queens and introduced pure Italians. As they bred nearly all through the winter they came out as Ital-

ians in spring (September), and perfectly clean, and they are perfectly healthy still (February), although I never cut out a cell or doctored them in any way. True, the cases were mild ones, and the locality is not so favorable to foul brood as some others; but there was no doubt about its being real foul brood, of which disease I had some wholesale experience in another part of this State.

I have, however, also had Italians which would not keep foul brood under, and have made it a practice for years past to kill the queens of all colonies showing either foul brood or paralysis.

Tooborac, Aus., Feb. 24.

[Your nail-spaced frame is an improvement over that used by Dr. Miller, in that the wood projects on one side just far enough to protect the keen edge of the uncapping-knife. Then your arrangement of the spacers on diagonally opposite corners, and your special manner of procedure in uncapping, enable you to overcome, to a great extent, the objections to the nails. The general and almost only objection is that they interfere with the baskets of the extractor and in uncapping.]

Regarding the immunity of Italians to foul brood, I believe you have suggested a very good reason why they protect themselves and the blacks do not—namely, their disposition to clean up their combs of all filth and waste matter. This, together with the further fact that they are a little less inclined to rob than blacks or hybrids, will explain why they resist the disease, and also why they do not catch it in the first place as readily as the German race.—Ed.]

MUSTARD AS A HONEY-PLANT.

Requires little Cultivation; Seed valuable; Blossoming Period from a Month to Ten Weeks; Honey Mild, and of Good Color.

BY W. J. OATES.

I notice in the ABC of Bee Culture that you would like to have the results of some practical experiments in regard to mustard as a honey-plant, and the amount of seed it produces.

Here at Lompoc it is grown in merchantable quantities, equaled, perhaps, by no other place in the world, excepting, possibly, Austria, which is a competitor in our markets. From this crop alone in a single year the farmers of this valley have realized a quarter of a million dollars. The average yield per acre is from 800 to 1000 pounds, though in wet seasons a ton is a more common figure. The average price of the seed is 3 cents per pound, and as high as 8 cents has been obtained. Last year it sold for 5 cents.

Its cultivation is easy and inexpensive; and the general summary of the experience

of farmers here is that the price of mustard has never touched so low a figure, compared with cost of production, as other farm products, and has far exceeded any or all of them at times. But it must be grown in rotation with other crops, and will not produce bountifully two seasons in succession on the same land. It is sown here any time from the middle of February till the end of April. About 10 to 15 pounds of seed is sown to the acre, either broadcast or with a specially devised drill, which, although sowing it more evenly, is about the same as broadcasting. No cultivating is needed, and there is nothing to do till your crop is ready for the harvest.

There are two kinds grown here—the English yellow, and the Trieste, or red. The latter is an Austrian product, and gets its name from a town in that country in the vicinity of which it is grown abundantly.

When the majority of the pods are ripe it is ready for the reaper; but care should be exercised in cutting, or lots of the seed will be wasted. It is better to cut in the early morning or late in the afternoon when there is moisture in the air, which toughens the pods and does not cause it to shell out so easily. The red should be cut somewhat green, for it shells very freely. Both should be left from a week to ten days before commencing thrashing.

The thrashing is very simple. A heavy sheet of hop-cloth, 50×60 feet, is spread out on the ground, and two loads from a tight header-bed are dumped thereon. A rope is so fixed in the wagon that the whole load is dumped at once. It is then spread out in a circle, and a huge wooden roller is run around on it a while. It is then turned, and the operation repeated, when you are soon ready for more. When the seed accumulates it is dragged to the center of the sheet; and when your sheet is full you are ready to commence operations with the fanning-mill.

The Chinese variety is not grown here, and I don't think it has ever been tried. But I am convinced that, if there were profit in growing it, it would have been tried.

The bees work alike on both yellow and red, which leads me to believe that there is no difference in the amount of nectar secreted. The blossoming-period lasts about a month; and where the sowings are made at different intervals it can be strung over a period of ten weeks.

The honey is mild in flavor and light in color, and commands here the same price as sage. Though not as heavy-bodied a honey as alfalfa, it has the same tendency to candy quickly. I have had it candy in the tank in four or five days; but to obviate this, we have devised a tank with a glass top which is covered with a shutter till time to draw the honey off, when it is removed and old Sol soon does the rest. This idea was one of Mr. Miles, a former bee-keeper of this place.

I don't know why mustard could not be grown in any part of this country, as it is profitable for the seed alone. It would be

of much more value to one who keeps bees as a side issue with his farm.

Lompoc, Cal., Feb. 1.

AGE AT WHICH BEES FIRST CARRY POLLEN.

BY DR. C. C. MILLER.

Referring to the alleged proof that bees five days old carried in pollen, Mr. Samuel Suddaby expresses doubt as to the completeness of the proof, and raises the question whether it is not possible that the pollen-carrying bees might not have come from elsewhere. The doubt is legitimate, and the question entirely fair. Moreover, there are general principles involved of which at least the younger readers may be ignorant, and of which it is sometimes very important they should be informed; so I am glad of the opportunity to give the matter a somewhat full discussion.

Mr. S. asks, "Was it impossible for bees to get into that hive?" I feel warranted in saying that, for the first five days, it was impossible for any bee to enter from the outside. It was closed bee-tight. The hive was placed over another hive containing a full colony, the upper hive having a solid bottom nailed to it (years ago my hives had bottoms nailed on) and in that bottom was a two-inch hole to allow the heat to pass up from below. To prevent passage of the bees, wire cloth was nailed over the hole above; and, to prevent any communication through the wire cloth, another piece of wire cloth was nailed over the hole on the under side.

Then Mr. S. suggests the possibility that, when the hive was opened at the end of the five days, the bees entering with pollen may have been bees from other colonies, citing this special instance: "Last year I got an Italian queen and put her in one of my hives; and before the summer was over I saw Italian bees in at least two hives other than the one in which I put the queen. They appeared to be working the same as the other bees in the hive."

It is quite true that sometimes—perhaps it should be said oftentimes—bees enter the wrong hive on returning from the field, and, being well laden, they are kindly received and given their naturalization papers. A homeward-bound bee, heavily laden, and wearied with its long flight, may be beaten to the ground in front of some hive other than its own. Without rising on its wings to take its bearings, it crawls directly into the hive, and without further ado is adopted as one of the family.

Put twenty hives in a straight row, six feet apart—ten feet if you like—on a level prairie with never a tree or other landmark except the hives themselves, and you may expect no little mixing. Bees are not good enough at figures to tell for certain whether their hive is the ninth or tenth from the end

of the row, and so a bee may go ten feet out of its way to enter the wrong hive.

Paradoxical as it may sound, the same bee that would make a mistake of ten feet can not be induced to make a mistake of six inches under the right circumstances. In early spring, before bees have flown, close the entrance of an eight-frame hive all but three or four inches at the right end. After the bees have been flying busily for two or three weeks, close the right end, and allow three or four inches opening at the left end. The bees, upon returning from the field, will go straight to the closed right end, taking quite a while to find the opening at the left end, and it will be days before they stop going first to the right end.

You see the bees go by looks, without carefully measuring distances. The bee may go to a wrong hive ten feet away because it looks just like its own; but it will not enter an opening only six inches distant at the other end of the hive-entrance, because the left end doesn't look like the right end.

Well, of what practical value is all this? For one thing, the man who fully understands that it is not uncommon for bees to enter wrong hives will not hastily condemn as impure an Italian queen because he finds in her hive a few black or hybrid bees that have come from other hives.

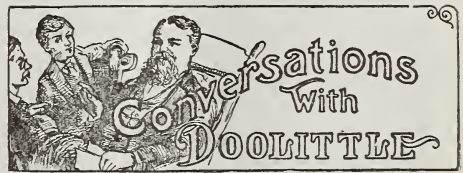
For another thing, a proper understanding of the matters that have been mentioned will allow us to increase the number of colonies on the same ground without increasing the danger of bees entering wrong hives. Take that row of twenty hives previously mentioned, and somewhere near the middle of the row set a tree or a fence-post in front of the hives, or even behind them. A hive at the right of the post will not look like a hive at the left; neither will the second hive at one side of the post look like the first or third. In my time I have used a good many double hives, a bee-tight partition in the center, with both entrances in front. Although the entrances were not six inches apart, I never had occasion to believe that a young queen on her return from her wedding-excursion ever entered the wrong side.

Again, a proper understanding will allow us so to place our hives as to double the number on the same surface of ground. Take again that row of twenty hives at equal distances. By the side of each hive in the row, and close up to it, you can set down another hive, doubling the number of hives in the row, and there will be no more danger of the bees mixing than there was before. A bee belonging to No. 14 is more likely to get into No. 12 or No. 16 than to get into No. 13, which is nearest to it.

Let us now turn to the question at issue. The queen was fastened in the hive, with no bees except those in the cells. No bee could enter from outside till the hive was opened at the expiration of the five days. A worker-bee from elsewhere, beaten to the ground by the wind, would not crawl into this hive just opened, but would crawl into the hive under it, standing on the ground.

A worker from the hive below, on returning from the field, would not make the mistake of entering a place looking so unlike its regular entrance. Still less would a bee from any other hive make such a mistake, unless there was standing near by an entrance to a second story, and nothing of the kind was there. Even supposing it possible that a bee might mistake this upper entrance for its own lower entrance, would it be likely that, within an hour, there would be a number of bees from elsewhere carrying pollen into a place where not a bee had before been flying? Moreover, the appearance of the bees was not that of old bees, but of bees only a few days old.

Mr. Suddaby, take the case.
Marengo, Ill.



AGE LIMIT OF BEES.

"Is this Mr. Doolittle the bee-man?"

"My name is Doolittle, and I am a lover of the honey-bee. If that makes a 'bee-man,' then this is certainly Doolittle the bee-man."

"That being the case, I want a little talk with you about how long a bee can live under ordinary circumstances. That is, what is the average life of the worker-bee, the drone, and the queen?"

"Why do you ask these questions? Do not the bee-books tell you about these things?"

"I have read considerably in this matter, and heard more; but as no two seem to agree I thought I would come and see you about the matter, as it has much to do with many of our manipulations in making swarms, etc."

"Yes, but probably you will think I do not agree with you and others any more than you say they agree."

"That may be so; but I had not thought of that part of the matter. Any way, I should like the results of your years of experience in this matter. Why, only the other day a man told me that bees lived a year and a half, and the very next day another person told me that 30 days was the limit of their life during the summer season."

"Surely, those ideas were very different, the first one being entirely out of the way unless we except the queen, and the last being in the extreme. But it has always seemed to me that it was a crime for bee-keepers to be ignorant on these matters, when one experiment would tell them the truth and convince them that the average life of the worker-bee is about 45 days during the summer or the working season, or a half more than the 30 days told you by the last person, and 16½ months less than that given by the first."

"Well, I did not know that there was any easy way of telling the truth in this matter. How is it done?"

"Before the advent of the Italian bee it was not so easy; but with any two distinct races, like the Germans and the Italians, the matter is quite simple. Take a colony of black or German bees, for instance, and about the tenth of June take their queen away and introduce an Italian queen, keeping record of the date on which the change was made. In 21 days the last black bee will have emerged from its cell; and if the Italian queen went to laying immediately, the first yellow bee will have made its appearance, the time of the appearance of the first Italian bee being jotted down also."

"Ah! I begin to see now. I had not thought that the color of the bees would help in this matter. Go on."

"If your experience is any thing like what I have had when conducting these experiments you will find that, approximately, which in this case means not varying more than a few hours to a day or two, at the end of 45 days from the time the last black bee emerged from its cell, no black bees will be found in that colony. At 40 days, plenty of black bees can be seen, they becoming less and less each day, so that, on the 44th day, there will be very few indeed left, nearly all being of the yellow race. Remember this is for the summer months, or during the working season, and does not apply at all to the winter."

"How is that?"

"The life of the bee depends on the work it does. Thus when it labors the most its life is the shortest. Hence it comes about that, through the inactivity induced by cold weather, the bee can live from seven to eight months."

"That is getting down to a pretty fine thing. How do you tell that?"

"This is proved on the same principle as the other—simply by changing the queen as before, only it is done this time from the first to the middle of September. About the first of October the last black bee will have emerged from its cell. Eight months would carry us to about June first, and at this time there are generally only Italian bees in such a colony, although I have known a few black bees to live as late as June 15th to 20th, where a colony had been so treated."

"Well, that is an interesting experiment, surely, and proves that what I have been told was only a guess."

"Yes, all of these experiments have been very interesting to me, as well as proving the things which I wished to know. And there was another very interesting part to this last experiment, which was this: When spring comes, or about April first, in this locality, there would be very few yellow bees in such a colony, which told me that very little brood was reared from October until April, as well as telling me that more bees die in two months in the spring, from April 1st to June 1st, than all that die during the six months from October 1st to April

1st, or the six months of winter. And for this reason all possible precaution should be taken to preserve the life of those old bees during spring, so that they do not die off too suddenly, or have what is known as spring dwindling, before the brood has emerged from the cells in sufficient numbers to keep the colony in a prosperous condition."

"Well, surely, there is lots to these things which I had not thought possible for us to tell, and I hope to profit more in future by way of experimenting in different things pertaining to the bees. But how about the life of the drone?"

"That is not so easily told, for his life is regulated very largely by the whims of the workers, for drones are usually killed, or driven off by the workers, long before they would die a natural death from old age."

"I have noticed the bees driving them out, and had often wondered why they did it."

"Any sudden cessation in the flow of nectar from the fields is often considered sufficient reason for the driving off or killing of drones; but most apiarists think the drones would live to about the same length of life as is attained by the workers; but from a close observation of those which I have tried to preserve in queenless colonies for the late fertilization of queens during the fall months, I am of the opinion that they are of a little shorter life, for it has been a rare thing to find one out of a certain lot kept, after the lapse of forty days from the time of their emerging."

"Then you would put the life of the drone as about forty days?"

"I should be that way inclined; but a queenless colony is not a colony in a normal condition, and drones kept in such colonies might wear out faster than in a normal colony, if such a one would not think of driving them off."

"That looks reasonable, and I should like to talk on this matter further; but I see the time is nearly up when I must be going, and I want to know about the life of the queen first."

"The average life of the queen is about three years, although some have been known to live nearly six years. A man who once purchased a queen from my apiary told me she lived to be five years and five months old; and I had one which I purchased of The A. I. Root Company that lived to be five years and nearly four months, she doing good work up to the last month she lived."

"That is ahead of any thing I ever thought of. I have been told that it was better not to keep queens that were over two years old."

"There is no question but that a queen reared during July, August, or September of any year will do as good work the following summer as she ever will; but it is a question whether it will be a paying undertaking to remove the queens in the apiary at the end of the second year or summer's work, and replace them with young queens."

"What do you do in this matter?"

"I have experimented along this line to a considerable extent, and the result is that I do not now make it a practice to supersede my queens every two years, for I find that the bees are quick to understand when their mother is failing, and will supersede their own queen when she gets to be too old to be of service to them. So I now trust the matter to the bees very largely, believing that they know what is best for them in this respect better than I do."

[We shall soon publish an article by E. W. Alexander on this subject. —Ed.]



KILLING BEES WITH KINDNESS.!

I have kept and studied bees for a number of years, and kept them in all kinds of hives, but can not boast of any great success with them; in fact, the more I study the more I meet with peculiarities. Last year was a good one for increase, but for some reason most of the bees had but very little honey. I had about 30 colonies, and now have only 4 left. In the A B C of Bee Culture it says a swarm in May is worth a load of hay, etc.; but I found it altogether different last year. My early swarms didn't gather enough to winter through, while my daughter put a swarm, that evidently came around, in a soap-box in August, and they came out a strong colony this spring with honey left over.

My neighbor has a swarm in an old dwelling-house, not occupied, on the west side between the scantling — nothing but poor plaster on the inside, and cottonwood siding on the outside, and there they winter through ready for business on a warm winter day, and gather honey to "beat the band," while those that are nicely accommodated in a Danzenbaker hive with quilts and cushions die off or starve, or are frozen to death. Don't you think it is the same with bees as it is with us? The more we baby ourselves the more sensitive and tender we get; and the warmer the quarters we occupy in winter the easier we catch cold when forced to be exposed.

LOUIS GOTTLA.

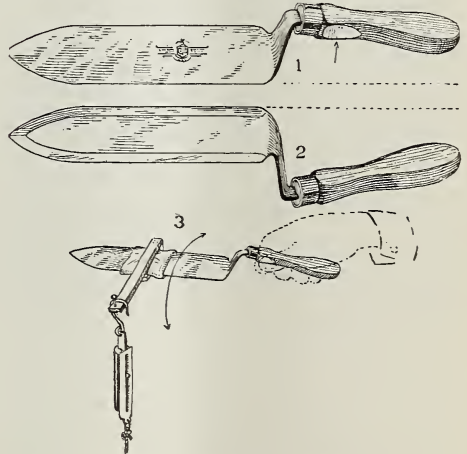
Elk Creek, Nebraska.

[Friend G., the very thing you have commented on has come up more or less for thirty or forty years past; and while I can not think it true that intelligent care and pains are wasted or thrown away, one thing has come out very prominently in reports for years past. Bees with abundant ventilation right up through the hive, and plenty of fresh air so as to dry out the dampness, will often winter all right season after season, while others in the same locality that

are fixed up with what you call "tight warm hives" become damp, freeze, or get the dysentery or something else. Now, while this is true, our old veterans have learned the trade of wintering colonies by the hundreds, season after season, with a loss so small, say one or two per cent, that it is hardly worth mentioning. When I commenced keeping bees we had so many losses in winter from spring dwindling, etc., that I thought seriously of giving up the business; but for fifteen or twenty years past we have had no losses worth mentioning. This is because we have learned how to prepare the bees for winter in the proper way. If you follow the A B C book or other standard works I am sure you will have like success. —A. I. R.]

A FLAT HONEY-KNIFE HANDLE.

It is important to have a flat honey-knife handle. Put the knife in a vise and plane the handle half oval or flat. Whittle it with a jack-knife. It is the best thing I have discovered lately. W. L. COGGSHALL.



[Mr. Coggshall suggested that we try the experiment shown under 3, and we found that much more could be raised with the square handle than with the round, and with much less effort. We believe that this new form of handle would meet with the approval of the majority of bee-keepers. —Ed.]

MAKING SWARMS STAY IN DANZ. HIVES.

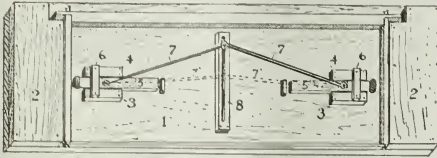
I notice on page 490 the inquiry of Mr. J. D. Barfield in regard to having bees stay in the Danzenbaker hive when first hived. I have been using the Danzenbaker hive for the past five years, and at first I had the same trouble that he mentions. I tried giving more room by adding supers above, but that did not remove the trouble. Nearly every swarm hived would swarm out once or twice until I learned to put an empty super or hive-body *under* the brood-nest, and then I found the bees would stay every time. I also put blocks $\frac{3}{4}$ inch thick under the front

of the hive-body to enlarge the entrance. The empty super or hive-body must be removed in 24 or 48 hours, or the bees will build comb on the bottom of the frames, extending down into the empty body below. Another thing that I think is very necessary to have the bees stay hived is to have the stock of empty hives piled in a cool place so that they will be as cool as possible when the bees are put in them. I think the bees swarm out as Mr. Barfield mentions, not so much from a desire to abscond, nor because there is anything objectionable in the hive, but because it is too hot for bees warmed up by the exercise of swarming.

Bowling Green, O. A. J. KILGORE.

A BLOCK FOR HOLDING FRAMES WHILE NAILING THEM TOGETHER.

Here is a block which I have used for some time, and think it the best I ever saw for holding the frames while nailing them. The construction of the device will be sufficiently clear from the illustration.



To use this, lay it down on the bench. Place two end-bars in position, and pull down hinge No. 7 until it is straight, and it will, if properly adjusted, hold them so firmly by the rubber buffers on the ends of piece No. 5 that no amount of hammering will jar them loose.

H. R. BUFFHAM.

Newman, Cal.

[This device would probably work satisfactorily for frames whose top-bars are nailed from the top. For frames whose top-bars are secured by nails driven through the end-bars from the side, some other plan would doubtless work better.]

We would suggest that the thick block, No. 1, be made a little narrower so that the top-bar may rest on the bench if the block is turned on edge for the purpose of nailing the bottom-bars.—Ed.]

SOFT MAPLE AS A MATERIAL FOR SECTIONS; CHECK THE DESTRUCTION OF BASSWOOD FOR TIMBER.

Mr. Root:—I notice that, in your comment on pasteboard sections, May 15, you state that no wood has been found to take the place of basswood, and bend without breaking. As a prospective bee-keeper I am greatly interested in the preservation and, if possible, the increase of basswood-trees; hence it occurs to me to ask if soft maple, sometimes called red maple, has ever been tried for sections. The wood is a beautiful creamy white, cuts cleanly and easily, holds a smooth surface, and is quite tough

when properly seasoned. My knowledge of it comes from its use for turning and carving when I was a boy. The tree grows rapidly, is fairly abundant, easily raised from seed, and stands transplanting and civilization well. There are, or were, hundreds of acres of it in Iowa. My memory is that a State law, in force in the 70's, perhaps still effective, rebated a certain amount of the taxes of each man for every acre of trees he planted, and soft maple was largely used for this. I think the loss of the maple as a pollen plant would be much more than balanced by the saving of the basswood as a honey-plant.

Another thought has occurred to me, and that is, that *organized effort*—possibly by the National Association, could do much good for the bee-keepers of the country by checking the destruction of basswoods for timber, and especially by encouraging and assisting in the planting of basswoods. Through the schools on arbor day, and through the State and National experiment stations and colleges, young trees could be grown and distributed. It may sound like a dream, but I believe there is good hard sense and good hard dollars back of it if the right people will take it up.

Willmette, Ill.

D. FARNSWORTH.

[The objection to soft maple is that it would be altogether too hard to work to advantage. Basswood is almost as soft as pine; and on wood-working machinery it would work about as easily. The soft maple would make the labor on sections cost a good deal more per thousand; moreover, it would not grow nearly as rapidly as basswood. We have had repeated examples in our locality, where the latter would make about twice the trunk diameter of the former in five or ten years. At our old homestead one of the soft maples blew down, and was, at the time, about four inches in diameter. We set out a basswood with a trunk only as big as our thumb in its place. Over twenty years have now elapsed, and the trunk of the basswood is considerably larger than the soft maples alongside of it that had a start of some seven or eight years' growth.]

But there is another point to be considered. Prof. Cook has pointed out that soft maples have many insect enemies in the way of borers. It is not an uncommon thing to see a tree of this kind "dying at the top." In some of our parks it is getting to be a real problem to save the soft maples. The same authority, Prof. Cook, says the basswood is almost entirely free from insect enemies.

The owner of one of our large pleasure-resorts is about to set out a large number of basswoods, for he says he can already see the beginning of the end of his soft maples. Without shade of some sort, his resort will be ruined.

Check the consumption of basswood timber? I do not know how we are going to do it. The furniture and box makers use a hundred times as much of this valuable

wood as the manufacturers of bee-keepers' supplies. The bee interests are only as a drop in the bucket, and it would be hard to get legislation that would prevent the destruction of these trees.—ED.]

A GENERAL MIX-UP OF FOUR OR FIVE SWARMS OF BEES.

I have 100 colonies of bees, although but a beginner. I did not want any increase this year, so I tried the returning plan. One day five prime swarms came out at the same time and lit together. I hived them in three new hives, and some stayed and some went away. What would you do in such a case? Next day they tried it again, and I thought I would stop up the hive when they commenced to swarm, and let out one at a time so I could return them. However, I would let enough bees out to be sure of the queen; and when they had all alighted together I would hive them. Afterward I would look and find three or four queens balled; then I would destroy them and give the bees to a weak colony. Was this the best thing to do? They kept on swarming this way one month (April) until the colony had nothing but drones left. What shall I do with them? There was no brood left, so I broke them up and put in prime swarms. Was that the thing to do? J. WHITAM.

Kings City, Cal., May 8, 1905.

[A colony that has been hived, and which will not stay hived, will sometimes become very balky. I have advised giving such a colony a frame of unsealed brood after hiving, and taking them down immediately into a dark cellar, and keeping them there for a day or two, where they will have a chance to "cool off" and to give their own body odor to the hive and frames.

When a swarm has once been hived, and then comes out again, it is useless to put it back. It may stay a second time, but the chances are that it will come out again.

When several swarms come out at once, and mix up, the only thing to be done is to scoop dipperfuls of them into several hives. The divisions that do not happen to get any queens will be liable to swarm out again; and it is well to watch carefully to see which colonies are queenless. Queens can sometimes be found by balls of bees, for they are so thoroughly mixed that a distinct queen odor is lacking. As the bees are a general mixture, each queen when separated from the ball should be caged and introduced to the bees in the regular way.

I do not quite understand what you mean when you say you broke them up and put in prime swarms, unless you gave other swarms to the hive which these bees originally occupied.—ED.]

ENTRANCE UNDER THE HIVES.

I can not help telling you how much pleasure my new bee-entrance gives me. The bees enter under the hive. The bottom-board is one inch shorter than the hive; and

this makes the entrance one inch wide across the hive. The bees are more contented, and work faster in it; the robbers never trouble them; the millers and flies do not trouble them so much; they very seldom swarm and go back—the queen must drop or fly; neither rain, snow, nor cold wind harms them. I have also a one-inch air-hole in the back of the brood-chamber near the top, with screen tacked on, but it must be kept dark.

JOHN WINKLER.

Springbay, Ill., May 8, 1905.

[In the early 70's the senior editor of this journal used to have hives on a loose bottom with an under entrance of the kind you describe. The advantage of such an entrance is that it can be increased or decreased by shoving the hive backward or forward; but as the majority of bee-keepers now use fast bottoms, it is no longer practicable to use that kind of entrance.—ED.]

TURNING THE ENTRANCES BACK WHEN USING THE SIBBALD NON-SWARMING PLAN.

We are running ten colonies on the Sibbald plan to test it; but we make this change: When we make a shift of hives (or jump) we turn the entrance to the back of the stand until night; then reverse to front. We think this change will make the method a good one. M. A. PAYNE & SON.

Detroit, Mich.

[From the experience we have had with the Sibbald plan, your suggestion is an important one, I should say. The weak point of the whole system is that the returning bees will find their old entrance. In order to make it work satisfactorily the hives should be turned right about face for a few hours.—ED.]

BEEES KILLING DRONES.

I wish you would tell us why the bees are killing off their drones in this locality at this time of year. J. T. COUCH.

Milan, Mo., June 3, 1905.

[Drones during this past spring have been killed off largely because of the backward chilly weather and the scarcity of stores in the spring. Bees, like ourselves, are sometimes compelled to economize at every point; and when drones are killed off to any considerable extent before a honey-flow, it indicates pretty strongly a growing scarcity of stores.—ED.]

Last July I had a hive that had white-headed or bald-headed drones. The colony is now in fair condition. What is the cause? Sparta, Wis. BERT SCHMITZ.

[The drones described are what are called "sports." We have had a good many reports of vari-colored-headed drones. The bright colors make them very pretty.—ED.]



She hath done what she could.—MARK 14:8.

It has been my privilege to meet many noble men and women during this life which God has permitted me to live so far. Yes, more than that—it has been my privilege to know intimately, and to find right in my own immediate neighborhood, many good and noble characters. Sometimes we do not realize the true worth of these grand and noble characters until God has seen fit to take them away. This matter has been called to mind by the recent death of one who for many years had a very close connection with the growth and building-up of our business.

Some time about 1856 my father moved from the town where I was brought up, out on to a farm in the woods in Medina County, Ohio. When we began to get acquainted with the neighbors I heard frequent mention of Miss Ellen Mason. Everybody spoke of her as a very studious girl and good scholar. She did not attend the country district school where my younger brothers and sisters did, for she had mastered the common branches, and was at that time in Oberlin, Ohio, a place that was then and is now famed far and wide for educational facilities. By and by Miss Mason came home on a vacation, and it was my privilege to meet her. Although she was still in her teens, everybody seemed to agree in calling her Miss Mason instead of plain Ellen Mason, and I wondered at this somewhat; but when I became acquainted with her I understood it better. While she had a keen relish for every thing outdoors as well as for what could be learned from books, she seldom joined very much, if I am correct, in ordinary sports and gatherings, especially the boisterous gatherings. Her remarkable characteristic was that she was always exceedingly busy about something or other, usually studying up something that had heretofore escaped her. She was quite proficient, even at an early age, in drawing; and both my sister and Mrs. Root, who were nearly of an age (only 15 or 16) took drawing-lessons of Miss Mason. Some of the pictures Mrs. Root made at that time are still in our possession.

After Miss Mason graduated in Oberlin, taking a gentleman's course as well as a ladies' course, she became a teacher in Cleveland. When I started the ABC book I was anxious to learn to draw so as to help the engraver make the pictures I wanted. Miss Mason undertook to give me lessons in drawing by mail. By the way, this was an early start in the "correspondence-school" business. Well do I remember her beautiful hand-writing and excellent phraseology in her letters of instruction. But I had too much on my hands at that time to attend to it, and it was soon dropped.

When she heard what I was doing in bee culture she paid us a visit, and I do not think I ever had a visitor before or since who looked through the bee-hives with such intense and enthusiastic interest. She plied me with question after question, and remembered my replies so well that in one brief visit she had a pretty fair understanding of the mysteries of the hive. Later on, such close application indoors seemed prejudicial to her health, and she asked if she could not be of some assistance in our growing business. My impression is we talked about having her outdoors some of the time; but she was so valuable as an assistant book-keeper and correspondent that she could not well be spared to go outdoors. About the time we came to our present location, in 1878, she became installed as head book-keeper. When she first commenced working for me she accepted very much less wages than what she had been receiving in the public schools of Cleveland; and during all her busy life with us for eighteen or twenty years she never once even suggested more pay than she had been getting. On the contrary, she almost invariably objected to an advance. When the business became so large that there were a dozen or more clerks in the office, most of them under her supervision, I suggested that she ought to have about a thousand dollars a year. She said she was becoming aware that the amount of business we were doing required somebody who would be worth about that amount; but she very much feared she could not fill the requirements of the position as they ought to be filled. She did, however, manage very well for quite a number of years after that conversation.

She was all her life an exceedingly busy woman. From the moment her time was marked in the morning until it was marked off, not only every minute, but it would seem as if every second, was given entirely to the service of The A. I. Root Co. Her example in the office was worth a great deal to our business in this respect. If there was to be any talk about outside events, it was always before or after her time was marked off.

I am told that she chose the Lord Jesus Christ for her friend and helper when she was only fourteen years old; and I do not think she ever forgot that sacred pledge for one moment to the end of her life. Whenever it was necessary that somebody should be labored with about being out late nights in bad company, or getting into bad habits, Miss Mason was the very person to do it. Of course, I allude especially to our office help. Nobody was ever offended at Miss Mason's kind rebukes. Many parents were exceedingly anxious to have their children in our employ, and I hope the above remark is just as true now as it was 25 or 30 years ago.*

* I do not intend by the above to carry the idea that Miss Mason was the *only* woman in my employ at that time who did this kind of work. There are others, both men and women; and there are at the present time through our different departments unselfish, whole-

I remember one bright-looking young girl whom Miss Mason thought we might make use of to do errands, and attend to little tasks about the office work. This girl was bright enough, but she could not bring her mind down to the business of a book-keeper's helper. She noticed everybody who came into the office; and when any member of the firm had any thing to say to somebody else she always heard it, and knew all that was said or done everywhere, except behind the ledger-desk. Miss Mason talked to her, but was finally obliged to give up, as I had done, that she was "no good" for office work. It used to be a study to me sometimes to take a look at those two—the big healthy pupil who could almost look down, *physically*, on her little teacher who was so much above her, *mentally*, morally, and spiritually, though from her childish standpoint *she* could not comprehend the difference between the two.

Miss Mason was truthful and conscientious, almost to a fault, if such a thing were possible. Let me give you an illustration or two:

One Saturday afternoon I inquired if some business transaction had been attended to. She replied that it was all fixed. After I left, she discovered she was mistaken—that it had not been attended to at all. She set to work with alacrity, and had it straightened out before night. Inasmuch as she answered me truthfully, but found out afterward it was a mistake, and as she was somewhat reluctant to have me know she had been so careless, she decided there was no particular reason why the matter should be mentioned at all. Next day, however, during the short recess between church and Sunday-school, she came to me and confessed she was mistaken when she told me the matter in question was taken care of; but she added she went right at it and fixed it up at once. Of course, I said it was all right, and that she need not have taken the trouble to mention it. The reply was something like this:

"Mr. Root, I tried to look at it in that way, but it made me uneasy all night, and my conscience has been troubling me till I have made this little confession. Having done it, I feel happy again."

Now, I do not think she feared that I might by some possibility discover that what she had told me was untrue, but it spoiled her peace of mind that night, and it could not be restored until she had made confession. Oh that we had more book-keepers in this land of ours with a conscience and disposition like that! Yes, and if we had some bankers and business men whose conscience and whose fear of God were such that they could not *rest* until they had made right even a statement they made entirely by mistake, what a world of trouble would be saved!

After almost twenty years of close application to the book-keeping work in our

office, nature began to make a little protest. We kept double entry, and the books were made to balance to a copper the first of every month. Our customers were all over the world, and our dealings were not only with thousands, but with at least a hundred thousand, and both she and myself were getting old. By the way, friends, our prayer-meeting topic a few weeks ago was entitled "Growing Old Gracefully." May be, in concluding the remarks of this Home Paper I may be able to suggest to some of you the way to grow old gracefully and to keep good-natured and happy. Miss Mason and I both had some lessons to learn; but, may God be praised, Christ Jesus was and is not only abundantly able but willing to teach these lessons. Sometimes there was neglect or mistakes; and while it was my office to point them out and to plan to avoid such things in the future, it was not exactly my fashion to do it in as kind and pleasant a way as some people might have done it—say the good friend of whom I have been speaking. At one time I censured pretty severely something that I pronounced inexcusable carelessness. She stoutly declared it was not her fault, but I insisted that it was, either directly or indirectly. She went home feeling a good deal hurt, and perhaps a little bit out of a Christian frame of mind. In the morning she came back to her work fresh and bright, and with a smiling face. I was a little surprised, for I expected that the disagreement of the day before might come up; but she soon explained why she looked and felt bright and hopeful. She took up the old Bible, that has been for so many years on my desk, and, turning over its soiled pages, she came to I. Peter 2:20. May be it will do you good to read it, friends:

For what glory is it if, when ye be buffeted for your faults, ye shall take it patiently? but if, when ye do well, and suffer for it, ye take it patiently, this is acceptable with God.

She said in substance, "Mr. Root, when I went home last night I was feeling very unkindly toward you because you persisted in blaming me for what I still think was not my fault. But I finally turned to my Bible, as I always do before I retire, and came across these wonderful words. I know I make mistakes, and I know I am often at fault, and I have always felt willing to be reproved, when I was to blame; but the Bible says, as you will notice, that if, when you are doing the very best you know how, you suffer for it, there is some credit to you if you take it patiently, for such a spirit is acceptable with God. Now, whether I am to blame or not I am going to take it pleasantly and patiently, with God's help."

There, friends, how many people do you know in this world who go to their Bible in time of such troubles, and who, after having received counsel from such a source, *put it in practice* as did our friend above?

After this event other things came up that we could not either of us exactly explain in our work. When the book-keeper declared it was not her fault, knowing how truthful and conscientious she was I took

her word for it. But her overtaken mental powers were giving indications that they were not sufficient for the increasing strain upon them, even when neither she nor I was expecting it. Later on, a certain transaction had been neglected. We found it had been dropped when partly finished, but, for some reason unknown, carried no further. She declared she had had nothing to do with it. I insisted it could have been no one else who started it. In a puzzled way I began turning over the pages of what we called then our computation-book.*

I found some figures that represented the exact transaction I have mentioned. When I showed that sheet to her, she was obliged to admit it was her writing; but she was as much astonished and perplexed as I was when she said she could not recall any thing about having made said figures. There I was, bearing down hard on the poor woman when she was really as innocent of any thing wrong as I was myself. It was nature's protest against overwork, or work that required so much mental strain. I do not think it occurred to either of us at the time that the growing business would pretty soon have to be turned over to younger brains and muscles; but as we were both professing Christians, and praying for strength and guidance day by day, it was not so very hard for us to accept and learn the lesson that many elderly people are obliged to accept and learn. Later on, my health began to fail; and although my son and son-in-law had not yet finished the course they planned in college, they came home and took charge of the business. The boys, fresh from college training, with the vigor of young manhood, soon discovered, by comparing notes with other business houses, that my methods were not up with the times; and it was quite a hard task for me to let go the reins of business and stand to one side. God in his great mercy suggested "the cabin in the woods" at about this crisis. My memory began to fail like that of the book-keeper, perhaps because it was no longer able to grasp the thousands and I might almost say millions of things to be remembered. After I had been a few months at the cabin in the woods, with nothing to look after outside of the forty acres, my memory became just as good as it ever was.

By the way, I forgot to say in the proper place that Miss Mason had all her life a most remarkable memory, and she was exceedingly accurate. Whatever she did

was done thoroughly and well. She never learned to use a typewriter—at least not very much. It was not particularly needed in her work; but her beautiful plain writing in letters and figures I shall always remember. No matter how hurried she was her writing was always plain.

Like myself, she tried some other occupation, thinking it might be beneficial as a change. A few months ago she came home to Medina, giving up work. Recently her health began failing very rapidly. The physician she consulted did not seem to be able to tell just what the matter was. I urged that she go to Cleveland and find some expert who could locate the trouble. I shall always remember the pleasant smile she gave me as she suggested her work was probably done, and that there was no particular reason why she should live much longer. She probably knew death was near, although I did not.

I have already given you several wholesome morals to my talk, but there is just one more left. If this good woman who was all her life a blessing and a help to humanity had worked fewer hours, especially when she was past fifty, and had spent more time outdoors, she might have been a blessing to humanity even yet, and for many years to come. God in his great mercy suggested to me the cabin in the woods. She had means enough to enable here to drop work; but the characteristic of her life for being busy was so strong that she accepted a position to take charge of a home for elderly women. The pay was pretty good, I believe, and she thought it would be a change for her, even if it was still a burden with many cares.

Miss Mason enjoyed excellent health almost all of her life. I think she once told me that ten dollars would probably cover all of her expenses for doctors' bills. Well, somebody told me that in this old ladies' home she could not have the abundance of fresh air we always have here in our office; that the old people could not bear the least bit of draft or breeze, so she was kept a great part of the time in close warm rooms. I feel like adding right here that I believe old people should be fenced off by themselves, so that their poorly aired apartments will not poison the children and younger folks; but I think I will change it and say old people who can not bear a little breeze should be fenced off from other folks.

Now, about growing old gracefully. I hope I can persuade young people that God has made ample provision for people who are growing old. It is his will that they should be as bright and joyous as the children; but in order to be this it is often necessary that they should stand out of the way, and do it gracefully. Even if the young people do run things into the ground at the start, let them do it. The loss of a few dollars or of a few cents is not the worst calamity that can happen by any means. I do not mean that old people should be "chloroformed" or any thing of that sort—God forbid! and the younger people do not mean

* One of my regulations when I had charge of the business was that every clerk in the office should keep a blank book and put every figure or mark of a pencil in that book, dating all such marking or figuring for each day's work. Lots of the clerks scolded, because they thought it was just a queer notion of mine. But sometimes in a big office it is exceedingly important to find a small scrap of paper on which somebody has been marking or figuring. As an illustration:

We shipped a lot of maple sugar to a firm, and charged them only half the value. I tried to find out who made such a blunder, but all the clerks disclaimed responsibility. Finally a scrap of paper with some pencil-marks showed the blunder in multiplying. The new clerk who made it had to acknowledge her own figures.

any thing of that sort either. The old bees in the hive have a necessary part of the work to do, and so it is with humanity. Nothing can take the places of these older ones with ripe experience. This ripe experience is just as much needed as is modern machinery; but we want to pray for God's grace to help us to adjust ourselves to our respective places good-naturedly and *gracefully*.

AUTOMOBILE DRIVERS WHO FEAR NEITHER GOD, MAN, NOR—ANYBODY ELSE.

The *Cleveland Leader* has just informed us of an auto driver who turned out of the way of a trolley car, and in doing so ran into a man who was driving a young high-spirited horse. The man was thrown out on the curbstone, badly injured. The horse ran away, injuring several other people; but the driver pushed ahead, never stopping to look back or inquire as to the damage he had done, and succeeded in getting away before anybody caught sight of the number on his car—if he had one. Now, this thing has happened before—at least a few times any way; and I wish that a law might be passed inflicting a severe penalty for running away from an accident of this kind without stopping to inquire or helping to make good the damage. Individually I should consider the penitentiary none too severe for such an offense. When bicycles began making trouble a few years ago, there were a few who were cowardly enough to get out of sight as soon as possible, if they could do so. Yes, and I have heard some people defend such a course; but the man who runs away from an accident, whether he caused it or not, is much in the same category as the man who runs away when something has been stolen or somebody has been robbed. If there are no laws to punish such cowardly tricks, by all means let us have them. Nobody who makes any pretense to being called a *man* should refuse to face the music and take the consequences, especially at a time when he may have done damage or injury to some of his fellow-men; and it should be no excuse for him to say that he did not mean to do the mischief.

AUTOMOBILES ON HIGHWAYS.

So long as we continue to publish kind words now and then, to be consistent we must also give place to criticisms. The following is one of them:

A. I. Root Co.—Please find enclosed 25 cts. to pay for what I owe on GLEANINGS. Stop my subscription. I have taken GLEANINGS for years, and like it well except for just one thing. I am altogether out of sympathy with A. I. Root's love for automobiles. I think this rich man's plaything, and curse to non-users, should be prohibited by law from using roads built for public highways. A. E. PECK.

Acworth, N. H., May 25.

Friend P., I do not know but I shall have to remind you of the time when Stevenson was projecting the first railway in England. He was told by bright and intelligent people that his scheme was impracticable, as it would frighten the horses and cattle along

the road so that they would jump over the fences, and run away and bring calamity everywhere. One old farmer said, "And suppose, now, Mr. Stevenson, my coo should get in front of your engine." His reply was, "Thot w'd be bad for th' coo." But he had faith to foresee that the cattle would be of small account compared with the good that would be done by steam railways. And, my dear friend, I have faith to believe that, in a very short time, you may see your mistake and conclude to renew your subscription to GLEANINGS. It seems the steam railways did not trouble the horses and cattle in the least; but they *did* make it possible to carry the necessaries of life not only everywhere, but at such low prices that starvation and destitution are now almost unknown wherever the locomotive has made its way. A recent number of the *Chicago Advance* informs us that there are streets in Chicago where the automobiles, including those that are used to carry merchandise, largely outnumber the horse-drawn vehicles. Gasoline is fast demonstrating that it is a cheaper and safer motor than horse flesh. Surely you would not want the editor of GLEANINGS to be behind the times in this matter of cheap and safe transportation.

Another thing, automobiles are already used to some extent by bee-keepers, especially those who have out-apiaries; and they are very soon going to be used much more for this very purpose. You can go among the hives with them in a way you would not want to do with a horse; and during the busy season they are a great saving of time, especially if your apiaries are as far apart as they should be for the best results.

Temperance.

BUSINESS OPPORTUNITIES IN FOREIGN COUNTRIES.

From a government bulletin entitled "Department of Commerce and Labor, No. 2266," issued March 4, 1905, I have decided to make some extracts. In discussing the different ways in which our foreign trade may be increased and extended with foreign countries, the consul speaks of increasing our export of American intoxicating liquors.

CHINESE LIQUOR CONSUMPTION.

There are reasons to believe that American liquor interests, especially the wine-producers of California, are not paying the attention to the trade of China which it deserves. Generally speaking, the imports of wine, beer, porter, and spirits into China are rapidly increasing, although the past year was not a very favorable one in some respects. It is also true, apparently, that American trade in this line is increasing, but Americans do not have the share they ought to have.

The unusual amount of native wines imported in 1902 was probably due to the destruction of stocks in the great fire which visited Amoy that season.

Generally speaking, the coast cities use foreign spirituous, vinous, and malt products in about the proportions indicated. American beer is popular, but some German and considerable Danish beer are imported. Whiskies are largely of English and Scotch origin. The wines represent almost every nation that produces wine, but the European brands very largely predominate. *I believe that Americans can develop a good trade here in whiskies, can increase their sales of beer greatly, and*

that they can especially better their trade in wines. The consumers include not only the large and increasing foreign population, but the wealthier classes of Chinese who are taking to foreign beverages. When a Chinese official gives a dinner nowadays his table will show an array of foreign wines which speaks volumes with respect to future trade. The Chinese people, as a whole, are becoming more and more prosperous every year, and their ability to buy such products is constantly increasing. One indication of this is apparent in their trade in native wines. I see no reason why foreign goods should not replace such native products to an indefinite extent. California wines particularly ought to have the cream of the market here, and I believe that a little pushing of the trade, by personal representation or otherwise, would have immediate and gratifying results. The success due to efforts of agents for American firms so far indicates the great extent of the field yet untouched. The demand for wines is for sherry, claret, hock, champagnes, and port, in the order named.

GEORGE E. ANDERSON, CONSUL.

Amoy, China, March 9, 1905.

The italics in the above report are my own. I wonder if Consul Anderson has ever read that little text in the Bible that says, "What shall it profit a man if he shall gain the whole world and lose his own soul?" If he has, I wish he would substitute for the word *man* the word *nation*. And, by the way, is it true that the United States of America picks out somebody for consul to foreign nations (such as the Chinese, for instance) who seems to think it incumbent on him to use his official influence to introduce American whisky and beer into foreign countries where these things are as yet unknown? Is this sort of thing the spirit and animus of our boasted nation, the land of the free and the home of the brave—a nation that loudly proclaims to the rest of the world on its coins, "In God we trust"? I do not know exactly where the responsibility rests; but these few words are dictated with a prayer that this little protest in our bee-journal may, through God's providence, reach somebody who has power to suggest that we as a nation select a different stripe of men to send on such a mission, especially to what we call "heathen" nations. Perhaps this wonderful new people who are coming so rapidly to the front (the Japanese) may have both ability and inclination to suggest a halt in pushing the sale of intoxicating liquors, opium, etc., among foreign nations where they do not want them. If so, may the Holy Spirit direct and encourage the Japanese.

DUFFY'S MALT WHISKY.

We make the following extracts from a Duffy malt-whisky advertisement in the *Anaconda Standard*, Montana:

"Thanks to Duffy's, I am able to be out every day, and take quite extensive tramps in the severest weather."

On being interviewed, Mr. Cronk said: "For many years Duffy's pure malt whisky has been my only medicine. I take a dessert-spoonful of the tonic three times a day with my meals, and when I go to bed. Although we have severe weather where we live, I am able to be out every day, and I take quite extended tramps. I am very thankful to Duffy's, for it gives me a good appetite, and keeps me strong and well in my old age."

Mrs. Sarah A. Rowley, his daughter, writes that, in spite of the fact that the grand old man is 105 years old, he is keen in mind and rugged in health, thanks to Duffy's pure malt whisky.

After the above was in print the matter was referred to Mrs. Sarah Rowley, who is

quoted, and here is a copy of the letter she writes to the editor of the *New Voice*:

Mr. Johnson:—The statement that my father, Hiram Cronk, was a user of Duffy's malt whisky is false. He never drank one drop of it in his life. My father never gave them this testimonial. SARAH ROWLEY.
Ava, N. Y., May 24.

Mr. Cronk died May 13, at the age of 105. In a former letter to the *New Voice* his daughter says, "My father has not been out of the house in five years, and is very feeble;" and yet the Duffy people claim he told their agent that he took long walks every day. His long life has been extensively commented on by the press. One of the New York papers furnishes the following, published some time before Mr. Cronk's death:

Mr. Cronk is a total abstainer from intoxicants and tobacco. Longevity seems to have been common in his family, several of his brothers having lived to be over ninety years of age. His sturdy frame and his way of living have increased his lease on life, and he bids fair to live to reach his hundred and fifth milestone.

You see that these Duffy people got wind of the fact that there was a man living who was 105 years old. I do not know whether they really got some one to interview Mr. Cronk and his daughter, Mrs. Rowley, or not. You can see what they say about it in their advertisements, and then what Mrs. Rowley really says when appealed to.

If nothing but publicity will kill out this kind of work to make good temperate people intemperate, let all the friends of temperance see to it that they get the needful publicity. If you can find a paper containing their advertisement, cut this out and send it to the editor, and insist that he stop accepting advertisements from such a gang.

GOVERNOR FOLK AND THE SALOON-KEEPERS OF ST. LOUIS.

All honor to Governor Folk, of Missouri! The following we take great pleasure in clipping from the *Weekly Sentinel*, Macomb, Ill. It indicates that there are some good men besides our beloved President who are determined on the enforcement of law. Here is what Governor Folk says in regard to the saloon-keepers of St. Louis:

The dramshops will be taught that they are not above the law, even if it takes the military power of the State to do it. They will be protected in every right the law accords to them, but they must obey the law.

The law permits the dramshops six days in the week; and any one who exceeds that is an outlaw. When a saloon-keeper opens his dramshop on Sunday he does so in defiance of the law. When he sells intoxicants he deliberately insults the majesty of the State.

They say this law is a blue law. Any law seems blue to the individual who has a selfish motive in breaking it. If they continue to violate it they will find this law will assume a livelier hue. It is the law of the great State of Missouri; that is enough. Furthermore, it is a law in the interest of good government. But to prevent the enormous amount of crime that comes out of the Sunday saloon. They say the law is a dead law. Let them ignore it, and they will receive a shock that will teach them it is very much alive. If it has been more honored in the breach than in the observance, great is the pity; but that is true of the bribery statute. That, too, was denounced as a blue law and as a dead law, but experience shows it to be neither.

My duty is to enforce the law, and I intend to do it the best I can throughout the State. The dramshops must either respect the laws of this State or they will have to show they are stronger than the State.



THE COMB-HONEY LIES, AND A PARALLEL CASE IN REGARD TO CABBAGES.

I suppose all our readers have seen more or less in the papers about poisonous snakes or worms in cabbages. The agricultural periodicals have been exceedingly busy in trying to put down the lie, ever since it started; but it turned out very much like the lies about manufactured comb honey. The falsehood was copied, and traveled a thousand leagues ere the truth was able to overtake it, providing it did *finally* overtake it at all. On the 6th of June the Department of Agriculture issued a leaflet relative to the cabbage hair-worm. No person has ever been killed or injured by eating worms in cabbages. The Department finally succeeded, however, in tracing the statement down to town, county, and State; but the postmaster in that locality said no such thing had occurred there, neither did any such people live in that place. The hair-worm that is often found in cabbages is no more poisonous than angleworms, or skippers in cheese. Most thorough tests were made by feeding these "cabbage-snakes," both cooked and uncooked, to rabbits, guinea pigs, etc., and they were not harmed in the least. Notwithstanding this, so many people have gotten the notion it is not safe to eat cabbage that thousands of dollars' worth of good cabbages were allowed to rot. The bulletin in question says, "From data at hand it can be truthfully said that thousands of cabbage-growers incurred severe losses on account of the unfortunate 'scare' due to the unwise circulation of the veriest rumors." All this is on account of a senseless scare. I wonder if we can not have a law passed making editors *responsible* for the propagation of damaging slanders like the two before us.

ALFALFA IN OHIO.

Inasmuch as alfalfa is now getting to be one of the main sources of honey, and of a honey, too, that in quality is almost equal to that from white clover, if not quite, it behooves us to give the matter considerable space. Accordingly I take pleasure in clipping the following from the *Rural New-Yorker*:

There are many farmers who can not understand yet why we keep talking about alfalfa. Not having grown the crop or seen it growing they do not realize what it would mean to them. We felt indifferent about it at one time; but since seeing the small field at the New Jersey Experiment Station and the large fields around Syracuse, N. Y., we realize the great possibilities of this plant. The best way to convert a man is to take him right into the field where the last crop of alfalfa is growing, and then into the barn, where the two previous crops are bulging the boards off the sides. The next best argument is to have some reliable farmer tell what alfalfa has done for him. John M. Jamison, of Ohio, is a good farmer, and conservative in his statements. This is what he says:

"Last year here the clover crop was poor, and most of it saved in poor condition, while alfalfa did finely. I har-

vested mine in good shape, cutting it four times. There was no clover on the farm to cut. I have eleven acres of alfalfa. It would have taken three or four times the same area of the best clover in this section to give the same amount of hay; clover grown on the same kind of land. I had an abundance of corn and good fodder, but without the alfalfa or its equivalent in clover hay or bran, I could not fill my lots with feeding lambs. The clover hay could not have been bought, and to buy the equivalent of the alfalfa in bran would have cost at least \$500, which would have taken a share in the profits of the lamb-feeding. Where the clover has one chance to make a crop, alfalfa has three."

Mr. Jamison is putting extra tile into his land at an expense of \$7.00 an acre in order to fit it for alfalfa. A fruit-grower or gardener may say: "This may be all very well for a stock-grower or large farmer, but alfalfa is not for me." There is where he makes his mistake. We must all keep some stock, and the more manure we can make without too great an expense the better off we are. With two or three acres well set in alfalfa we can cut hay enough for all our stock, cut down the feed bills, and save a large amount of land which would be needed if we attempted to grow any other fodder crop. By all means hang to alfalfa until you get it.

You can get a stand of alfalfa almost anywhere if you take sufficient pains; and the first thing to do is to have it well underdrained, as the *Rural* hints; then get your ground in good condition with stable manure, turning under red clover, and possibly by the use of commercial fertilizer. In order to get a good clear stand free from weeds, I think I would put the alfalfa in drills. It is much easier to get out the weeds when sown in this way. Be sure you get rid of docks and every thing of that sort before you start in. Our folks put in a piece of alfalfa when I was up in Michigan, and they made a bad choice; first, because they took creek-bottom land where in some places there was only a foot of soil above the shale. In the second place, the piece is badly infested with docks. We tried digging them out, but afterward decided we had better try again by putting our alfalfa on well-drained upland of good quality, and fairly free from bad weeds.

REPAIRING RUBBER TIRES.

Some of the friends may think this out of place in a bee journal; but knowing how many bee-keepers use a bicycle in their work, I think it will not be much out of place here:

Some time ago I noticed in *GLEANINGS* that you were anxious to learn of some quick and satisfactory method for repairing the tires on your automobile. I can tell you how I repair my bicycle tires, which, after years of experimenting, I find to be quite satisfactory. I use the Dunlop, and for a hole in the casing I take a piece of old Dunlop tire, fit it *over* the hole, and sew it (with awl and waxed thread) along the edge on each side near the wire. If the hole is large, fill it with cotton batting before inserting the inner tube. It is best to put the patch on the outside rather than inside the casing, as it runs smoother, and when worn can be replaced; and if on inside, the hole will soon wear larger. Closed tires can also be fixed the same way by slitting the casing enough to allow for sewing.

J. H. BURNS.

St. Marys, Ont., Can., May 10.

We have also used leather sewed over a break in the tire. But the best arrangement for a quick repair with an automobile is a patch of prepared rawhide fastened with a rawhide lacer. This can be put on in a few minutes, and will last for several weeks if used with care.



Concrete Building Blocks

for building purposes are everlasting. Where cement can be had for a reasonable price, they make a cheaper wall than wood, brick, or stone. They are fire and frost proof.

The "Handy" concrete building-block machine makes them. Price, complete, \$50.00, f o. b. Medina.

Write for descriptive circular and price list.

MEDINA CONCRETE CO., MEDINA, OHIO.

The Root Observation Hive.

To meet the increasing demand for a moderate-priced Observatory Hive, for use in schools and homes, we have decided to manufacture the style illustrated herewith. It is identical with our regular hive, with the exception of the body and super sides, which are fitted with glass, together with wooden shutters for closing the hive while not observing. This hive permits the keeping of a regular colony of bees in a normal condition so that every phase of bee-keeping may be studied.



PRICES

THE ROOT OBSERVATION HIVE.

- Ten-frame hive, L. size, with super, in flat..... \$4 00
- do. nailed, varnished, glass, no bees..... 7 50
- do. ready for use, Italian bees, brood, queen.. 15 00
- One-frame hive, no super, with case, in flat..... 1 00
- do. nailed, varnished, glass, no bees..... 2 00
- do. ready for use, Italian bees, brood, queen.. 5 00
- One-frame hive, with case and super, in flat..... 1 50
- do. nailed, varnished, glass, no bees..... 3 00
- do. ready for use, Italian bees, brood, queen.. 6 00

A. I. Root Company,

Factory and Main Office,
MEDINA, OHIO.

