

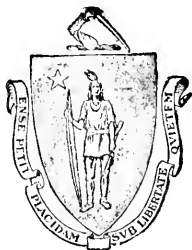
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W. Z. HUTCHINSON, Editor and Proprietor.

VOL. XX. FLINT, MICHIGAN, JAN. 15, 1907. NO. 1

Wiring Frames and Filling Them With Foundation.

W. Z. HUTCHINSON.

THE COIL of wire for wiring frames is a snare and a delusion. If it could be placed upon a reel and all wound off at one sitting, it might be all right, but when the coil has to pass through the vicissitudes of the ordinary bee-keeper's shop, it is almost certain, sooner or later, to become hopelessly tangled, when the time spent in trying to unravel the tangle is worth ten times that of the wire. Buy your wire on spools. In unwinding the wire from a spool, put some sort of a brake upon the spool to prevent the wire from coming off too freely. I simply drive a nail in the top of a bench or board, and set the spool over the nail. The weight of the spool causes sufficient friction to put just about the right amount of tension on the wire. The spool is placed some distance away, perhaps 20 or 25 feet, when the wire is unwound, the continual pull-

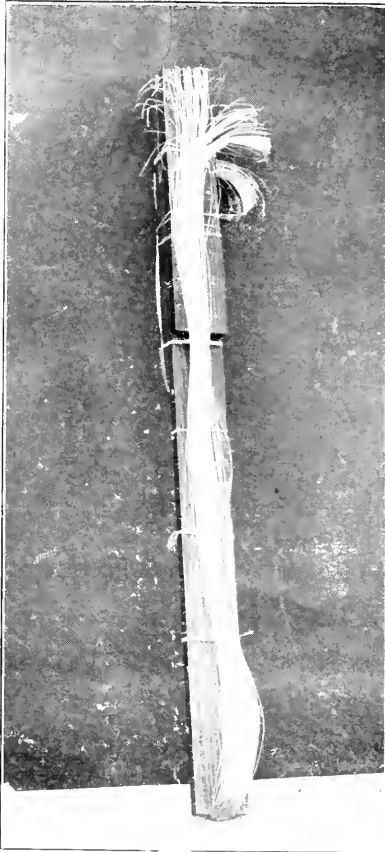
ing will take out about all of the kink and curl.

HOW TO CUT THE WIRE THE CORRECT LENGTH.

My plan is to wind it lengthwise around a board of such a length that when the skein of wire is cut in two, the pieces will be exactly the right length for wiring a frame. Cut off a piece of wire as near the correct length as can be ascertained by measuring, then wire a frame with it, and see if the length is correct. Remember that there must be a little extra length to use in winding the wire around the last nail. After you have wired a few frames, and know *positively* that you have the correct length, then get a board, perhaps six inches wide, and half as long as the wire, less twice the thickness of the board. An excellent way is to first cut the board a few

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inches short, then nail two, foot-pieces to opposite sides of the board, at one end, allowing them to project several several inches, enough to make up for the shortness of the board. Don't nail these pieces on very solidly at first. Wind a few strands of wire around the board, and cut them in two, and use



Bunch of Wire cut off the Right Length.

them. If they are the correct length, well and good. If not, then remove these pieces and move them either out, or in, as the case may require, until you have the desired length.

When a board of this kind is finally the right length, then wind around it, lengthwise, a spool of wire, or less, if

you don't wish to use so much, and then the wire may be cut in two by the use of shears, the blades of which may be inserted between the two pieces that are nailed at one end of the board. Before cutting the wire, however, there is a very important precaution that must be taken, viz., that of winding string around the board and wire, in several places, tying it firmly at each place. If this precaution were not taken the wire would become a hopeless tangle the moment the strands were cut. The strings hold the wire in place against the sides of the board, and the wires may be pulled out, one at a time, just as a woman can pull a thread at a time from a skein of thread that she has cut in twain.

HOW TO PUT IN THE WIRES.

In wiring a frame don't begin at a hole nearest the top bar, or the bottom bar. Begin at one of the *central* holes, say the one nearest the top, then go across to its mate on the opposite end bar, through this hole, then up to the upper hole in this bar, and then back across to the first upper hole in the first mentioned end bar, and fasten the end of the wire to the little brad that has been driven in for that purpose. Now take the other end of the wire and thread it through the other unoccupied, central hole, (the one next below the first-used hole) then across to the opposite hole, from there down to the last hole in that end bar, and then back to the last hole in the other end bar, which finishes the threading. Don't you see that, if you should commence at the first hole in an end bar and go back and forth to each succeeding hole, you would have the whole length of wire to draw through the holes, while, with the plan just described, only *half* of the length of the wire has to be drawn through.

HOW TO IMBED WIRES.

After the frames are wired, then comes the fastening in of the founda-

tion. In my frames there is no comb guide, nor any groove into which to fasten the foundation. My frames, or, rather, my top bars, are flat and smooth, like the top bar of a section, and, as the melted wax plan is best for fastening in foundation in section honey boxes, so it is the best for fastening in foundation into brood

frame. See that the foundation is pressed firmly and perfectly against the top bar. This is an important point, and upon the thoroughness with which it is looked after depends the success of fastening in the foundation with melted wax. Holding the foundation firmly against the top bar, imbed the wires by the use of a spnr wire imbedder.

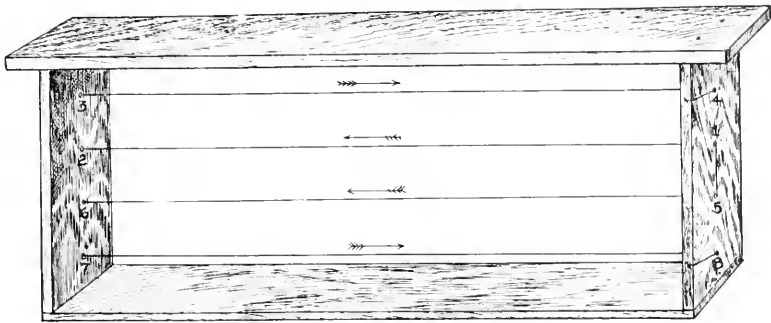


Diagram Showing How to Wire a Brood Frame.

The wire should be threaded through the holes in the order of the numbers "1," "2," "3," etc., going in the direction of the arrows. By a misunderstanding the engraver has shown the frame made of too wide material.

frames having top bars like mine. First see that the edge of each sheet of foundation is perfectly straight and smooth. If it isn't, then lay a pile of a dozen sheets of foundation on the table, lay a straight edge on top of them to guide the knife, and pare off a shaving from the edge of the pile of sheets, just barely enough to make the edges perfectly straight. Take a pile of these prepared sheets, lay them on a board, and set them up in a chair, in a slanting position, and set them near a stove in which there is a fire. I do this work in the winter when there is a fire in the coal stove. Put a piece of board just the size of the inside of a brood frame. Lay this board upon a table. As soon as the outside sheet of foundation in the pile by the stove is sufficiently warmed, lay it upon the board that is on the table. Over this board, and the foundation resting upon its surface, slip a wired

Be careful not to press too hard on the imbedder—enough to cut the wire clear through the foundation. If the pile of sheets of foundation is placed near to the stove, the outside sheet will be warm enough each time that a new sheet is wanted. If it isn't, then move the pile a little nearer the stove. If it becomes *too* warm for use, then move it back. By this method the warmth of the sheets can be gauged to a nicety. Don't attempt to fasten the sheets to the top bar while doing the work of imbedding the wires. Let that be a separate operation. When a great pile of frames filled with foundation has accumulated, then the foundation can be fastened to the top bar with a mixture of melted wax and resin—about one-third resin. Resin is cheap and adds toughness.

I have tried several methods of applying the melted wax, but nothing has proved more satisfactory than that

of an ordinary, spring-bottom, oil can, such as is used in oiling machinery. Get one that has a handle, and will hold as much as a pint. Let the nozzle also be a long one, but don't use it full length, as the wax is likely to cool in the small end and cause trouble. Have the tinner cut off the nozzle down to about two or three inches in length, unsolder the joint along its side, and lap the tin over itself near the outer end, soldering it to keep it in place. This makes a short, sort of "stubby" nozzle in which the wax is much less likely to harden than in a long, slender nozzle. Fill the can with the melted wax, hold a frame filled with foundation in the left hand, taking hold of the top bar, with the bottom bar uppermost, and turned away from you so that the end bars form an angle of about 45 degrees with the horizontal. Also raise one end of the frame, the one farthest from your right hand, so that you can hold the nozzle of the oil can at the upper end of the frame, where the foundation joins the top bar, thus forming a little trough, into which the melted wax flows and cools as the nozzle of the can is slowly drawn down the length of the frame. The angle at

which the frames shall be held, and the speed at which the oil can shall be moved, are matters that can be decided only by practice. I might add that the temperature of the wax has a bearing upon these points. When the wax becomes too cool to work well, it can be again set on the stove, and, while it is warming up, more frames can be filled with foundation, or two cans may be used, one being in use while the other is warming. You will see now that the sheet of foundation must fit snugly against the top bar, or else the melted wax will run through the crack that is left. It may not be necessary to wax both sides of the foundation to the top bar, but I have always done it, and have never had a particle of trouble from the foundation coming loose, nor from its sagging or buckling. I use the medium brood made by Dittmer, Root and Dadant, and they all work well.

If any of my subscribers can see where I have been making mistakes in any of these operations, or where they can be bettered or improved, they will be conferring a great favor by letting me know.

FLINT, Mich., Jan. 2, 1907.



One Drawback on Getting Lower Freight Rates on Honey..

FRED. W. MUTH.

AT THE annual convention of the National Bee-Keepers' Association held at San Antonio, Texas, in November, there was a committee appointed, to secure, if possible, lower freight rates on honey. Being one of the committee in question, I wish to make an explanation in behalf of the recognized high freight rates, and then

point out to each and every bee-keeper the steps that must be taken in order that the committee appointed may be successful.

I am a dealer in both comb and extracted honey; and in the course of a year, receive many car loads, as well as innumerable small shipments. In one year's time I am obliged to enter many,

many claims with the R. R. companies, and am subjected to experiences which enable me to write intelligently upon this subject.

I am informed by a railroad official that the classification committee determine their classifications on an average based upon the number of claims and the amount of money expended for damages incurred *en route* in the course of one year. Therefore, it may plainly be seen that the *shippers* are responsible for the exorbitant freight charges imposed upon them; and lower rates need not be expected until the losses paid by the transportation companies have reached the very minimum. Consequently, we must *help ourselves*, by learning *how* to ship our honey. Other industries have done it; why not we? Take, for example, the packages used by the sugar refineries; *they are perfect*, as well as those of the coffee importers, cereal manufacturers, and countless others that I could mention. They were *compelled* to work, and work *hard*, in order to bring their losses down to the minimum, and soon discovered that it was absolutely necessary to use *perfect packages and nothing else*. We now have the advantage of lower freight rates, than the honey shipper.

In order to accomplish our aim to secure lower rates, we must without *one* exception, ship both comb and extracted honey in first class packages. Brother bee keeper, if you are raising comb honey for the market, by all means use *bottom* as well as *top starters* in your sections, so that the honey cannot break loose at the bottom. This is the first and a very important step to be taken. Furthermore, be sure to use the no-drip shipping case. Wrap each case in paper, so that it will be kept clean *en route*. Pack six or eight cases into one carrier well supplied with straw in the bottom, and having handles that will extend from four to six inches beyond the sides of

same. Lastly, do not forget the usual "Handle With Care" placard. Now if every bee-keeper and shipper of honey will follow the above instructions to the letter, that will tend to introduce a method that is both simple and practical, he will not only realize a greater profit in his product, but will also be assisting those who are giving their time and lending their experience to secure lower freight rates for you.

The producers and shippers of car loads of comb honey appreciate the value and advantage in using bottom as well as top starters. For instance, last summer I received two car loads of comb honey, from two different shippers. The one car contained 1170 and the other 1350 cases, and in the entire lot, there was not one comb broken. These shippers understand their business. On the other hand, I received quite a number of small shipments, with here and there a broken comb, frequently some badly damaged lots, caused by the failure to use bottom starters. These experiences are trying and disgusting, and were the shipper in question subjected to a few of them, he would, without a doubt, pay more attention to the manner in which he raises his honey and his mode of packing for shipment. These are the shipments that are responsible for the high rates. Do not misunderstand me; there are many producers and shippers of honey on a small scale, who thoroughly understand this part of the work, and we must give the credit that is due them.

A word regarding extracted honey: The R. R. companies pay more damage claims on account of poor packages used for extracted honey than they do for comb honey, and it behooves us to ship our extracted honey in *new* cans, if this style of package is to be used, or if it be barrels, let them be good ones, well coopered, *first class in every respect*.

The greatest trouble rests with the bee-keeper; he clings entirely too much to second hand packages, just because he can buy them a little cheaper, whereas, if he were to ship his product in good packages, the freight rates would be comparatively less, and in the end, his cost for shipping would be a great deal less than at the present

time, and there would be no trouble with the R. R. companies, nor any unsatisfactory transactions.

Therefore, friends, we must ask you to help, each and every one, if you want us to obtain lower freight rates for you.

CINCINNATI, Ohio, Jan. 8, 1907.



Helpful Hints on Extensive Bee-Keeping.

E. D. TOWNSEND.

THESE are big hives, and little hives, and—hives. In these hive-talks I think I better admit at the start I do not know which is the best hive; but I have come to the conclusion that, in this location, with my system of management, for the production of extracted honey, in out-yards, there is no better-sized hive than the 10-frame Langstroth. You will notice I do not say that the 10-frame Langstroth is the *best hive*. While I use the 10-frame hive in all the extracted honey yards, I realize that *size* is of more importance than the *shape* in a hive for extracted honey purposes.

SIZE OF HIVES OF MORE IMPORTANCE
THAN SHAPE AND NUMBER OF
COMBS.

To illustrate: For years I have used about fifty, 13-frame, Gallup hives. They are about the same *size* as the 10-frame Langstroth hive, and I never could see much, if any, difference in results between them at extracting time. Then, for several years, in connection with other styles and sizes, were 25 eight-frame Quinby hives; and these three styles, almost always showed up *best* at extracting time.

The reader will bear in mind that these results were obtained with our let-alone-system, where all the colonies at the close of the season, with less than 25-pounds of winter stores were fed sugar syrup enough so that they went into winter-quarters with from 25 to 30 pounds of winter-stores; or, enough to last them until the main honey flow in June.

Then, there were from twenty-five to fifty ten-frame Quinby hives—monster hives, with 1,800 square inches of comb surface, and these large hives were always laggards with us. Our 8- and 10-frame Langstroth colonies would quite often have an upper story of surplus gathered before these large-hive-colonies were built up, and had their hives full and were ready for their first super. This was a serious condition here, where our main dependence is an early clover and wild red raspberry flow. At this time our season would be one-third or one-half over, before these large Quinbys were ready to store in their supers; so the Quinby had to go.

To be sure, they built up into monster colonies, and, were our season a couple of weeks later, the results might have

been different; but, as our fall flow is insignificant, we would simply have a horde of consumers at the close of the season, which would be anything but satisfactory.

At one time, I tested fifty 12-frame Langstroth hives for extracted honey, but, for this location, I could not see enough advantage to justify me in continuing their use. They were cumbersome to handle, and, like the large Quinbys, were slow in building up, for our early honey flow.

A COMPARISON OF THE 8- AND 10-FRAME LANGSTROTH HIVE FOR EXTRACTED HONEY.

Were I asked how many Langstroth frames were necessary in the brood nest to build our colonies up into normal condition, for our early honey flow in June, I would say from seven to nine frames. This number would provide all the breeding room necessary, for 90 per cent. of our queens, while the other 10 per cent. would be divided between those that were very prolific, and would use more room, and the inferior queens that would use less room. With these calculations, there is allowed room for at least one frame of honey in the hive at all times. Now I suppose if one should see fit, he could by the use of dummies and a great lot of *experienced* labor, keep all his colonies on just the number of combs, each individual colony would need; but I think the tendency of the times is to handle frames less, and do our different manipulations as much as possible by handling hives instead. If that is true, we will have to decide on a certain number of frames, and build our hives to hold that number, estimating that we gain enough, or more, in *convenience*, and speed of manipulation, to offset what would be gained by giving each individual colony exactly what room it would need and no more.

If we were to adopt a hive of a size to correspond to the foregoing ideas, it

is easy to see that the eight-frame hive would be about the nearest right in capacity, to accommodate the largest number of queens, during the early breeding season; and where one is working for comb honey, with the ordinary system in vogue, it is probably as good a size as any; or, if one only has one yard, and is willing to watch it closely, it is all right. If one's bees are already *in* eight-frame hives, I am not sure it would pay to shift them to another size hive even for extracted honey production.

THE REASON FOR USING 10-FRAME HIVES, IN OUT-YARD WORK.

Notwithstanding all that I have said about the eight-frame hive being as large as is necessary to produce a full crop of extracted honey, I have reasons for using, and recommending the 10-frame size, for out-yard work. Some one has said, they bear neglect better. While I am not ready to admit that we neglect our bees, still, there is, sometimes, quite an interval between visits, and these two extra combs, usually filled with honey, are a help to us in several ways.

Then, I like a 10-frame, full-depth super to hold the eight extracting combs; and it is not necessary to tier up so high as with the eight-frame size. This advantage is so apparent, that I have known eight-frame hivesmen to arrange their hives so as to take a 10-frame super. The ten-frame super is not unwieldy to handle, and is better in several ways than the eight-frame, for upper story purposes. The most important advantage in the ten-frame hive is its capacity to hold a fair amount of brood during September, and still hold twenty-five or thirty pounds of winter stores; or enough to last a colony, not only through the winter, but clear through the spring breeding season, without any looking after by the apiarist.

Right here lies one of the most important considerations, in out-yard

work: That of having room in the hive for an abundance of stores, and brood room, so that the bee-keeper can put his bees into winter quarters in the fall, and *know* they will not have to be looked after, regarding stores, before the honey flow in June. This is a money saver in labor, and is one of the main factors in "business bee-keeping," and do not forget this important fact, that even with a few bees in a home-yard, while it is possible, it is not profitable, during the spring, to feed up weak, light colonies—*feed in the fall*. No one has ever written with half enough emphasis upon the importance of having bees *rich in stores* during the breeding season of sixty days previous to the main honey flow, which comes in June, in this location.

Those two extra combs of honey, in the ten-frame hive, are a bank account that is impossible to acquire in the

eight-frame size of hive. I have seen the eight-frame hive-man going over over his bee-yard, during May, pail of bee-feed in hand; and he needed to do it as many of the colonies, especially during the period between fruit bloom and the white honey flow in June, would surely starve, if they were not fed.

Let me repeat: Use 10-frame Langstroth hives; feed every "short" colony so that it will go into winter quarters with from 25 to 30 pounds of *good* stores.

The above two items, I consider of vital importance; especially in the production of extracted honey, in out-yards, on an extensive scale. It's the *foundation* to work on; and I reserve the right to repeat it, at any time, and as often as I see fit, in my subsequent articles.

REMUS, Mich. Jan. 2, 1907.



Preventing Swarming in a Yard 36 Miles from Home.

E. F. ATWATER.

WE have been so successful in the management of our most distant yard, that I shall endeavor to give to the readers of the Review a careful description of the management, with its mistakes as well as its successes.

This yard was established in August, 1905, 36 miles from home, in a locality somewhat less liable to failures of the honey flow, than is the home district.

In 1905, the crop in the home district was a failure; several yards getting only winter stores, while others gave a crop of from 9 to 20 pounds per colony. If we had owned an apiary where we now have our distant yard, a fair crop could have been taken; and this was a

reason for the establishment of this apiary.

In the fall of 1905, at this place, we put 93 colonies in rows, two tiers high, covering the rear and top with tarred paper, which is as good as any method of wintering in this mild climate, where the great majority do not protect the hives at all. This method is *fine* for any locality where conditions are similar; especially if a perfect wind-break is not present. We also bought a nearby yard of 63 colonies, the previous owner agreeing to protect the hives with tarred paper.

Early in April, 1906, I took the train for our new yard, and, on arriving, found that the 63 colonies had not been

protected as directed, and only about 40 colonies were alive; although it was the first winter in many years when the ordinary loss exceeded 10 per cent.

MOVING BEES WITHOUT FASTENING THEM IN THE HIVES.

These bees were moved to the place where we were wintering our 93 colonies. No time was spent in confining the bees, but all were subdued, lids and floors stapled on, then loaded on a wagon, a wagon sheet thrown over all, using the smoker as needed, the horses hooked on, and the drive made with complete success. They were all Italian bees.

As our '93 colonies under the tarred paper were flying strongly, they were not disturbed. No other work was done at this visit; and this April visit would not have been needed, had all the bees been moved to their permanent location the fall before.

On May 10th we hitched the team to the wagon, which was loaded with extracting supers containing wired frames with full sheets of foundation, bed, lunch-box, etc., and drove to the distant yard, taking most of one day for the trip. On arriving we piled the supers in piles, six full-depth supers high, with a tin lid, and a rock to hold it, on each pile.

That night the tarred paper was removed, and the bees placed on their summer stands, the work being finished early the next morning, all colonies then being smoked and jarred, so the bees would take their locations, which they did, in a very satisfactory manner.

Then we (two of us) spent 1½ days in a thorough overhauling of every colony. Some scraping off burr combs from frames and hives was done, each queen found, and clipped, if of the previous season's rearing, and an account of her age kept, with the Alexander tin tags on the hive-fronts. Stores were equalized in some cases, supers put on all strong colonies, and

on all colonies showing, by the area of sealed brood, that they would soon be strong.

As there was sufficient nectar coming in, to prevent the bees drawing very heavily on their stores, and the hives being mostly of the 10-frame size, no feeding was done. As we were after all the brood that it was possible to secure, queen-excluders were used on very few of the colonies at this time. At this trip we found two colonies preparing to swarm; so, nearly all of their brood was removed, and combs containing more or less honey put in their places, with a super of combs above. The removed brood was distributed among some of the colonies of medium strength.

VENTILATORS FOR EXTRACTING SUPERS

We next bored a 1½ inch hole in one end of each full-depth super already in the yard, and nailed over it, clinching the nails, a Hansen ventilator made of galvanized iron. The supers hauled from home at this and subsequent trips, were all supplied with similar ventilators. After mowing the grass and weeds that had grown about the entrances, we began our journey home.

On June 5th, as the flow from alfalfa was opening at home, we again loaded the wagon with extracting supers and drove to the distant yard. On arriving we found the flow a little more backward than at home. The bees had not "boomed" brood-rearing to quite the extent that they had in the home district, not having such abundant early pasturage, yet their condition was satisfactory, better than most of the apiaries in that neighborhood that had been under the constant care of their owners; to be credited, perhaps, to the sheltered location and tarred paper protection.

Now I realized that everything depended on the control of swarming, and while there are seasons and perhaps localities when and where plenty of room *in the comb* may prevent

swarming, I knew that such an easy method could not be depended on, so a careful inspection of each colony was begun. Perhaps 25 per cent. of the colonies were found with preparations for swarming, and several plans were used on them, and on *all* of the *strong* colonies, whether or not preparing to swarm; for with Doolittle and Stachelhausen, I find that it pays to treat *all* colonies which have attained a very populous condition.

MANAGEMENT OF "SHOOK-SWARMING"

One plan used is simply "shook-swarming." The brood-combs were removed, a comb of honey, pollen, etc., left on each outside of the hive, a comb with a little brood and the queen put in the middle, and the balance filled with wired frames and full sheets of foundation or combs. On this new brood nest an excluder, and above the excluder two full-depth extracting supers, or their equivalent in shallow supers, all full of comb, as nearly as possible, and, of course, only eight combs to a ten-frame super; or, if some foundation is to be drawn, nine to a ten frame super.

Of course, all, or nearly all, of the bees are shaken from the removed combs of brood into the new hive, stacking much of the brood on weak colonies. With several colonies we did not shake off the bees, but removed the old brood combs to a new stand, with

adhering bees, and tiered up the frames on the Alexander plan of queen-mating—some brood, bees, stores and a queen-cell in each body, the bodies separated by excluders, and an entrance to each story through the ventilator, the old queen left on the old stand to catch the returning field force, the adjoining hive moved to a new place in the yard, to further re-inforce her colony. Some of these mating piles were four, five and even six stories high, and at the next trip, we found a fine young laying queen in nearly every body.

This plan of queen-rearing is so easy, so successful, that it should be a part of the system of every producer of extracted honey. Be sure that there are enough combs in each body of these mating piles for storage and "expansion," for the bees will continue to work and store with full vigor, and after the queens are laying, may be used for increase or the extra queens may be taken, and the colony put in normal condition with one queen below, and supers above. This plan of mating can save bee-keepers thousands of dollars, and was first published in the Review.

Some colonies had all brood, except one frame, removed to the second and third stories, above an excluder, and the brood-nest filled with combs and full sheets of foundation as in shook-swarming.

MERIDIAN, Idaho, Dec. 20, 1906.

THE BEES AMONG THE LINDEN.

BY J. W. SOUTHWOOD.

Among the blooming linden trees,
O, hear the merry sound of bees!

I love that sound so well.

The air is warm and balmy soft.

The sound on breezes floats aloft,

O hear that music swell!

The charm's so great I love it well—
Sadness and gloom it doth dispel.

That lovely sound of bees.

Where nectar's taken from the flowers,

In morning's soft and balmy hours,

Of blooming linden trees.

To blooming trees I oft have gone,
I oft have wandered there alone.

To hear that merry sound.

Where else on woodland's leafy hill

Or near the valley's rippling rill,

Can music such be found?

HUNTINGTON, Ind., Dec. 30, 1906.

Possibilities of Bee-Keeping as a Profession.

M. V. FACEY.

THE desirability of bee-keeping as a profession has been repeatedly discussed in the bee journals; and almost invariably the bee-keeper is advised to unite a second calling or occupation to his bee-keeping ventures.

This article will take issue with that view, but will be fair enough to give the discouraging side of bee-keeping as well as the rosy side.

First, the possibilities: I must confess I have not yet found their limit. I have always had good crops of honey and a handsome return on my investment, but in the light of some of my more recent experiments in the line of honey production I do not think I have realized two-thirds as much honey as I might.

I find that the person engaged in exclusive bee-keeping can always feel sure of a living income, and in good years, a handsome one. During the last 20 years the smallest crop I have had was 32 lbs. per colony; the largest crop, for a number of yards, 200 lbs. per colony; with an average of 112 lbs. Actual cost of production, counting my own time and cost of cans, about three cents per lb., leaving about half our crop as returns on investment. Surely, good enough.

SOME CONDITIONS FOR A SUCCESSFUL BEGINNING.

Bee-keeping is a fascinating occupation to the owner of the bees, and I find it fascinating among my helpers, also, since nearly every one who works for me any length of time become afflicted with a bad attack of bee-fever. A crew of three or four men go out in the beginning of the surplus season, and take from \$75 to \$100 worth of honey a day,

for weeks together. They figure up the amount of their wages, and credit all the balance to the profit account of the owner; forgetting cost of cans, occasional feeding for winter, and other time and expenses; and it seems to them better than a *gold mine!*

As a rule, it is not wise to buy bees while in that condition. Bee-keeping should be gone into deliberately; carefully weighing the possibilities; not forgetting the care preceding and following the harvest, and the occasional expense of winter feed; and, after weighing all that, we must needs weigh *ourselves*. Are we wide awake and progressive, and are we willing to attend strictly to business *at all times*; then, if the locality is fairly good, there is no better business than bee-keeping.

SOME ILLUSTRATIONS OF NON-SUCCESS WITH BEES AS A SIDE-ISSUE.

Contrary to the advice usually given to bee-keepers, my experience has been against a dual occupation for bee-keepers. I find the bees always suffer from the union. I will give a few illustrations.

A few years ago I bought 33 colonies of bees of a man and moved them to an adjoining place. The man kept a few of his choicest colonies. The next fall this man complained of the year being a failure, and could hardly believe me when I told him that my bees, that I bought of him, had made returns to me of over ten dollars per colony.

Last year I bought 16 swarms of a bee-keeping farmer, taking my pick out of 60 colonies. I took a great deal more honey from my sixteen colonies than he got altogether!

This year the crop of honey in this locality was, as a rule, quite light, but, with my bees, by watching the honey flow closely, and keeping my bees on the rush all the time, I reaped the advantages of a rather short but rapid flow, and secured a yield of 153 lbs. per colony.

Now this difference in yield does not express any lack of ability in the parties failing to secure the crop, but simply shows that they could not give their bees the proper attention at the critical time.

In practice, with my lot of bees, every day that I fall behind with my work, in the height of the surplus season, means one hundred dollars lost.

The advice frequently given to buy a few colonies only, say, four or five, for a start, is correct. The would be bee-keeper ought to spend at least one or two summers assisting some up-to-date bee keeper. After the first summer he might buy a few bees, and handle them himself in connection with the bee-keeper he works for. He can spend three or four years quite profitably in learning and acquiring experience; and, even after that, he may need occasional help. The great trouble with us bee-keepers is that we are so apt to "know it all," and, knowing all, we fail to reap the possibilities that *might* be in store for us.

HOW TO BEGIN IN BEE-KEEPING.

In advocating exclusive bee-keeping, I do not for a moment say that during the student-period, or while acquiring the numbers, experience and knowledge necessary to the management of bees in large numbers, one should not have something to fill out both the time and the pockets, but be sure to never have it interfere with the interests of the bees at any time of the year; and then gradually work out of the side-issue as the bees fill out the time and income.

SOME VIEWS OF THE DARK SIDE OF BEE-KEEPING.

The picture I have, so far, given of bee-keeping, has been rather bright; therefore, the question may be asked why so many go into bees only to meet with disappointment? There are various reasons for these failures. One of the most common is that so many people persist in following the bee-keeping of their forefathers, forgetting that a swarm of bees in a tree is worth as much to them as the most modern hive with *immovable* frames, and no provision for surplus; and the person who does not attempt to secure surplus, whether he wants to give Nature its way, or whether it is to build up a full apiary quickly, almost invariably fails to see to it that his bees are in proper condition *for winter*.

Second: Failure to get the supplies necessary to an apiary or lot of bees.

Amongst the essentials I would place, *first of all*, one or two good bee journals. Unless you are progressive enough to *want* them, I would advise you to sell your bees, for you'll fail anyway; then you also need some good work on bee culture.

You cannot run for extracted honey without an extractor; and it is also very useful though you may be a producer of comb honey. I repeat; get an extractor, even though you have only two colonies of bees, and it will pay for itself in two years.

You will need a good smoker; and *twice* as many upper stories or supers as you *expect* to need.

Another reason of failure is exaggerated expectations of immediate returns from the investment. There are poor honey years when the income of the professional is small, and to the beginner it may be nothing at all; or the bees may be even an expense. These are the very years when the bee-keeper oftentimes has to spend his hard earned dollars to provide the bees with winter stores, and, to the beginner, without

any honey to show for the summer's work on the bees, it is trying to bring himself to give them their *proper winter stores*. If you can do this without flinching you'll pass.

Another cause of partial failure is where the bees, being a side issue, their owner being rushed with other work, gives his bees a glance, and, seeing that they have their upper stories ready for the extractor, hurriedly places a lot of additional upper stories on and goes off contentedly believing that he has done the best possible for them. This is also a fault of old bee-keepers. I have often met with this condition—it has happened among my own bees—but it has almost invari-

ably resulted in disappointment. It is a condition which the partial bee-keeper, on account of the exigencies of his work, can hardly avoid.

How many colonies should a person have before taking up bee-keeping exclusively? I can perhaps answer this best by giving my own experience. When I took my bees as an exclusive occupation I had only 35 colonies for the first two or three years; and I received from \$72 to \$80 a year outside of my bees; but after they had reached 100 colonies they were quite capable of meeting all demands made upon them without help from any other source.

PRESTON, Minn., Jan. 5, 1907.

Editorial

Our Bees are wintering well.

New Type has been ordered for the printing of the next issue of the Review.

R. L. Taylor was again elected as chairman of the Board of Directors of the National Association.

Postal Cards for use in soliciting subscriptions were sent out to subscribers last month. To the one securing the most subscribers by Feb. 1st a gold watch will be sent, and the indications are that a surprise is in store at the small number of subscribers that will secure the watch. While a large number of subscribers have come in from this source, they are very scattering, no subscriber yet being credited at this date (Dec. 17), with more than *two* subscriptions. If you have not sent out the cards, better do so *at once*; or, if you have sent them, and can use more let me know.

A Man says a thing can't be done, and then he has to dodge to get out of the way of the man who IS doing it.

Picture Postals are an interesting fad the world over, but the first one in the bee-keeping line was gotten out by Bro. York. See his announcement in the advertising pages.

Gleanings for Dec. 15th, the Christmas number, is certainly a work of art. The picture on the front cover shows an apiary in winter's grasp, hives surrounded by snow, and trees covered with frost. The front cover is also printed in three colors, and compares favorably with the popular magazines of the day. Inside there is a wealth of pictures that out does anything that even Gleanings has before done in this line. I am honestly and sincerely glad, and *proud*, to know that the fraternity to which I belong can get out such a specimen of modern journalism. May Gleanings continue to blossom,

Poor Packages and poor packing stand in the way of lower freight rates on honey, says Mr. Fred Muth of Cincinnati. See his article in another column.

E. D. Townsend never said truer words than he does in his article this month, when he says that the foundation of a honey crop lies in "having a colony *rich in stores* for a period of six weeks previous to the main honey flow."

Starting Out-Apiaries seems like a formidable undertaking to many. They say that they can't do it, as other work keeps them tied up. Here is what a subscriber writes down in Pennsylvania:—

"I am going to start an out-yard of 25 colonies in the spring. It will be 11 miles away—out in the berry region. You may wonder how I can manage it, working six days in the week, as I do in a factory. I'll tell you: I quit work at 5:00 p. m. Saturday, and there is a passenger train that leaves at 5:05. I must catch this train, care for my bees, and return Sunday morning. What I have been gathering from the pages of the Review, and what I expect to get from Mr. Townsend, and others, will, I am sure, enable me to do it."

Colorado State bee-keepers will hold their annual covention Jan. 22nd and 23rd, in the Chamber of Commerce Building, Denver.

The State Horticultural Association, the State Forestry Association, the Dry Farmers' Congress, the the American-National Stock Growers' Association will hold their annual sessions in Denver during the same week. Besides this, there will be the greatest Live Stock Show in Denver that ever came off west of Buffalo.

The railroads have given a rate of one and one-third fare for that week.

At the Bee Convention there will be a contest in putting up sections.

FRANK RAUCHFUSS,
Vice President.

The Stability, or sureness of getting a crop, is greatly increased by the establishment of out yards. This point has been mentioned many times. In a private letter to myself, Mr. Frank Coverdale of Iowa, says, "The past season has again demonstrated the wisdom of the out-yard. If I had had only yard No. 1, I would now be looking for a new location; but about ten miles west of that yard a nice crop was secured. Yard No. 3 also furnished a fair yield, so that, taken altogether, I got an average crop."

Working Bees on Shares.

A reader of the American Bee Journal asks for particulars regarding the taking of bees on shares—wants to know if the owner should give one-half the surplus and one-half the increase, each furnishing half the supplies. In replying to the inquiry, Dr. C. C. Miller says that this division is quite in fashion, and not far out of the way.

I believe that the *increase* should remain with the apiary—that is, remain the property of the owner. The increase is often needed to make up the winter losses.

The Doctor says that it is well to have a very definite agreement, and put it in writing, which advice I can endorse most heartily, as that very precaution saved us a world of trouble the past season.

Photographs of bee-keeping subjects are solicited for use in the Review. As far as possible let them be *useful* pictures—those that illustrate some useful implement or idea. Pictures of apiaries have been given so much that, unless there is something peculiar, or particularly interesting, about an apiary, it is scarcely worth while to photograph it. This is not meant to bar apiaries. Beauty alone may be a sufficient reason, but let there be *some*

reason. Get a good photographer to do the work. Have the picture as large as you can, 5 x 7 if possible, and larger is better. Ask the photographer to use a small diaphragm that there may be plenty of detail. Give plenty of time in the exposure, and let the print be made on glossy paper. For such pictures as I think well enough of to use in the *Review*, I will pay \$3.00 apiece in cash.

The Mating of queens in confinement has been the dream of bee-keepers for many years. In a few solitary instances it has been successful, the most notable being that of Mr. J. S. Davitt, of Georgia, as described first in the *Review*, and later in *Gleanings, A B C of Bee Culture*, and *Advanced Bee Culture*. Mr. Davitt's plan was that of flying queens and drones in a large tent of mosquito-netting. There were numerous important details that can't be given here, but they can be found in the back numbers of the journals mentioned, and also in the books. Mr. C. M. Church, of Arnold, Penn., tried the same plan last summer, and reports the result to *Gleanings*. He was not very successful, only mating one queen in the enclosure. He attributes his failure to a very simple matter, the use of wire cloth for covering the tent, instead of using mosquito-netting. The drones and queens injured their wings by flying against the hard wire, something that would not occur with soft netting. Mr. Church expects to give the experiment another trial next season.

Bottom Starters are recommended by Bro. Muth in his most excellent article in this issue. The only object of a bottom starter is to bring about, to a certainty, the fastening of the comb to the bottom bar, and if this can be accomplished without the bottom starter, then it is needless expense. I would

not like to say anything that would make bee-keepers more heedless or careless of the manner in which their honey goes to market, but thousands of bee-keepers, myself among the number, have produced crop after crop of honey with no bottom starters, that Bro. Muth, or any other man, could not say which was the top and which was the bottom of the sections. If the section is not filled *full* of foundation, and the flow is not very abundant, there is quite a likelihood of the comb not being attached to the bottom, but the remedy is to fill the sections *full* of foundation. Let the foundation come within a sixteenth of an inch of touching the wood at the sides and the bottom, and the comb will be just as firmly and completely attached to the wood as though bottom starters had been used. If you *can't* get the combs attached to the bottom bar without using bottom starters, then use them by all means, but, with most bee-keepers it would be wholly a superfluous operation.

What the *Review* Has Been and May Become.

Before starting the *Review* I had often thought what a fine thing it would be to have a journal that was a symposium, the gathering together, in each issue, of the views of the best men on some special topic. When the *Review* was started, this was one of its leading features. I first wrote an editorial on the subject, a sort of "leader," covering the subject as completely as possible, and a proof of this editorial was sent out to leading bee-keepers, in advance, to give them time to write, and any one of the great mass of bee-keepers was welcome to write if he wished. The best of these articles, so far as room would permit, were published, together with an editorial summing up. Each issue was devoted to some special topic, and decided the

question under discussion, as fully as it was possible to decide it. These symposiums were very interesting, helpful and instructive, and they certainly would have been continued had we not run out of topics. At first thought this may seem strange. Well, take your pencil and write down about 100 important topics relating to bee-keeping. When you have reached that number, yes, long before, you will find yourself chewing the end of the pencil and scratching your head. At the end of some eight or ten years, this feature of the Review was reluctantly dropped.

Many times, before I started the Review, Mr. Heddon had said to me that he would willingly give \$5.00 a year for a journal into which had been gathered the best that appeared in all of the other journals. If some one, in whose ability he had confidence, would do the editing, he would be entirely satisfied with such a journal to the exclusion of all others. That of copying the best that appeared in the other journals, together with the giving, editorially, of the gist of much that was not copied, was, and still is, one of the features of the Review. These two features are what gave the Review its name. It frequently happens that same one complains now because of this Extracted Department, saying that he had already read the same matter in other journals, and did not care to read it twice. If all of the subscribers to the Review were also readers of the other journals, there would be no occasion for the publishing of extracts, unless it might be for the sake of commenting upon them. And right here let me say that an editorial criticism, or comment upon some extract, often puts the matter in a far different light. If given from experience, and done with good judgment, the editorial comments, the reviewing of the extracts, form a most valuable part of the Extracted Department. If a man reads only one journal, and

wishes, to be sure that he shall know something of all of the important features that are brought out, then the Review is the journal for him to read. Of course there is no practical means of knowing what proportion of the readers of the Review take no other journal. I think it is safe to estimate that at least one-third read no other journal. To these readers, let the proportion be what it may, the Extracted Department is of great and special interest. As seldom one-fourth of the Review is taken up with this department, I feel that those who read one or more other journals ought to bear with it for the sake of the good that it is to the others who, nevertheless, may be in the minority.

After dropping the special topic feature, the Review became much like other journals, excepting the Extracted Department; even in this it did not differ so very much, as most of the other journals started a similar department soon after the Review came out. Gradually, however, I became interested in, and saw the possibilities of extensive bee-keeping, and began preaching the gospel of "more bees." So thoroughly did these views of the editor permeate the Review, that one of its best friends asserted that it was no longer what its name indicated; that it had become the *specialist's* journal; in fact, he seriously urged that its name be changed to the "Bee-Keeping Specialist," or the "Professional Bee-Keeper," or something of that sort. Right here is a good place to introduce a paragraph from a recent letter:—

"A little friendly criticism. While some half dozen persons, yourself included, are crying great is Diana of the out-apiaries, do please drop a few crumbs of comfort for such as myself, where age and other things prevent our starting out-apiaries. We don't wish to sit on the fence whittling rails for a year or more waiting for you fellows to come in on the home-stretch, bragging about what you have done."

In addition to the above I have recently received a nice, long, visiting letter from a good friend down in New Jersey, telling me, enthusiastically, how he had started a small apiary, how much honey he had produced, how he had sold it for good prices, at the same time "downing" the artificial-comb-honey-stories in many cases, and he winds up by asking me if I can see anything derogatory in such bee-keeping as that. I do not. I doubt not that many professional and business men can find pleasure and some profit in bee-keeping in a small way. It is more in the way of a recreation, than, as a business, that it would help that class of men. Photography does the same for me. It is a relief to the mind to be able to turn to some agreeable occupation, simply for the *love of it*. If any one thinks that I have no love for such bee-keepers, no sympathy for them, he is grandly mistaken. Then the beginner in bee-keeping, even though he intends to eventually become a specialist, must have some other occupation at first. There will always be men who keep bees in a small way, but the man who has a business that is capable of absorbing all of his time, money and energies, and then deliberately adds bee-keeping to his business, hoping and expecting to make it the equal of his original business, and thereby better his fortune, is quite likely to be disappointed. Worse still is the bee-keeper who might be termed a *half-specialist*; one with perhaps 50 or 100 colonies of bees, who dares not drop one business and make a specialty of the other. It is for this man I have preached more bees and specialty.

Regardless of what it may have been in the past, or may become in the future, the Review is now emphatically the specialist's journal. Its editor is full to overflowing with enthusiasm for bee-keeping as a business, and the enthusiasm shows in his journal. Of course, it contains many things that

are of interest and profit to the amateur, or the small bee keeper, it could not be otherwise, but its main bent is that of helping the man who is trying to *make money out of bees*. How long will it continue on this track? Candidly, I don't know. Changes are sometimes wrought in ways of which we dream not. There is a thought comes to me: These ambitious days of mine may sometime be over. Whittened locks may crown my temples. Going to and fro about the country, and managing out-apiaries may be beyond my strength. I may yet find my chief pleasure with a few bees at home, or by my fireside, where with pencil in hand I will most thoroughly review apicultural literature, drawing from the experience of the past, in which case, the Review will once more be true to its name. The picture is not an unpleasant one and it may be nearer than I imagine, but until it comes to me, I shall continue to "Hurrah boys; let's keep more bees—and make some money!"

Don't Use Second Hand Cans.

I have used nearly 200 cases of second cans some of them pretty fair cans, but I shall never buy any more. Thirty-two out of this lot had to be discarded on account of rust on the inside. Many of the others, while perfectly bright on the inside, were rusty or dirty on the outside, while many of the cases were bruised, or battered, or split, and more or less dirtied or soiled. Many of the cans were jammed or battered, and, in some cases they leaked. I have a few cases left, and may use them to store buckwheat honey, and then I am done with second hand cans. I don't regret the experience, as it will enable me to speak from experience, and to warn others against their use. To produce the finest honey in the world, white, clear, thick, heavy and aromatic, nectar fit for the gods, and then store it in old,

rusty, battered cans is penny wise and pound foolish. While the honey may be just as good provided the inside of the cans is clean and free from rust, the package does not give the purchaser a favorable impression. Dressing a beautiful woman in ragged, dirty, dowdy clothing would be a parallel case. When the honey is stored in a bright, new, shiny, tin can, cased in a new, clean wooden jacket, then I can send it to market with a feeling of pride and satisfaction, knowing there will be no contamination from rust, no leakage, and that a favorable impression will be created in the mind of the purchaser when he receives the honey. I don't know as I have ever put honey into a rusty can, one rusty on the inside, but Mr. R. A. Burnett told me, when I saw him last, that a spot of rust on the inside of a can would contaminate the whole contents of the can, entirely spoiling the honey, giving it a taste that might almost be called "putrid."

There is one more point of more importance, perhaps, than the ones I have mentioned, and that is the danger of foul brood that lurks in every second hand can. More than once in my rounds as inspector of apiaries have I found foul brood that had its source in honey that came from second hand cans. I will be fair enough to admit that second hand cans may be so treated as to eliminate the danger from foul brood. Thoroughly clean and scald the cans in cold weather when the bees are not flying, and bury all washings. But there is danger of some delay, or some slip. I must also admit that if new cans, filled with honey, were shipped in a car load lot, and emptied without the use of steam or hot water, they might be practically the same as new cans, but the general run of second hand cans have been used half a dozen times, more or less, and ought to be thrown away. I am done with them.

Extracting Honey in a Cellar.

In the last issue of the Review I asked my subscribers to let me know of the advantages and disadvantages of extracting honey in a cellar, and I have received a large number of replies. I will give a sufficient number of them to cover the main points. The first letter that came to hand was from Dr. C. C. Miller, and is as follows:—

MARENGO, Ill., Dec. 28, 1906.

Friend Hutchinson,

You want to hear from some one who has had experience in cellar extracting. I'm your man. Nearly forgot that I ever extracted honey, didn't you? Yes, in 1870 I got a Peabody extractor, about the only kind then known, and for six or more years produced extracted honey exclusively. One year I extracted a thousand pounds or so out under the apple trees at the Wilson out-apiary, and, excepting that, I think all my extracting during that six or more years was done in the cellar.

The coolness of the cellar was a great point in its favor, so far as concerned pleasantness of working; and I have no recollection of being in the least discommoded by going alternately into the hot outer air and the cool cellar. If two men were to be at work, I think each would prefer to work in both places.

"Any objection?" I suppose you don't need to be told that a cellar isn't the best place to keep honey, and that it isn't best to leave it there more than 24 hours, unless it is corked up. I do not now recall any other objection, but the fact that honey will become thin in a damp cellar has some real advantages. The thin coating of honey left in the extractor after extracting was always washed off automatically by the next day (no that never made it rust), and if dark honey were extracted today, the extractor would be all clean for light honey to-morrow.

Another thing I counted much more important. You know that the moisture of the atmosphere works only on the *surface* of the honey. Less than a pound of honey distributed over the different parts of the extractor would in a given time attract more moisture than 60 pounds in a stone jar, because the stone jar did not present to the air so large a surface. You will

readily see that the cappings, not too compact, would present a very large surface, and the honey on them could become thin and drain off very rapidly, and if you will allow the paradox, the wetter the cappings became in a day, the drier they would be in a week.

Possibly there may be objections I know nothing about, and you have my gracious permission to extract in cellar, outdoor, or in an attic, but if I were next year to go back to extracting, it would be in the cellar.

C. C. MILLER.

As I strain my honey and run it directly into 60-pound cans, thus excluding it from the air, there is no objection, on this score, to my use of the cellar for extracting purposes.

At the Michigan convention Mr. S. D. Chapman told me that he always extracted his honey in the cellar, and found no objection to so doing.

Mr. R. F. Holtermann, of Ontario, was over to our Michigan convention, and put a December issue of the Review in his pocket to read while on the way home, and afterwards he wrote me as follows:—

You say, on page 371 of Review, "I would like to know if any of my subscribers have had any experience extracting in a cellar." This has been my experience several times. It has its advantages and disadvantages. I like to run my wheelbarrow with supers directly into the honey house. This I did in only one cellar, with fairly wide and long steps. By means of a plank, and care, it was done. Generally the honey must be carried down.

The place is cool to work in, and the bees are less inclined to follow and give trouble than with a building above ground.

Care should, of course, be observed to not expose honey to the moisture of the cellar after work is over.

The greatest objection I found to the cellar was getting the barrels of honey out when through extracting; but, all in all, it is not an objectionable place to extract honey.

R. F. HOLTERMANN.

The cellar that I wish to use as an extracting room is built upon a side

hill right by the side of the apiary, and the floor of the cellar is level with the outside earth, hence the wheelbarrow can be run right into the cellar with its load. Then, again, I store my honey in 60-lb cans, and there is no trouble in wheeling them out of the cellar.

Mr. M. V. Facey, a veteran of Minnesota, who is just beginning a series of articles for the Review, writes as follows:—

PRESTON, MINN., Jan. 4, 1907.

Friend Hutchinson,

In answer to your query as to extracting in a cellar, I will say that I have used cellars every year, amongst my farmer friends, for extracting purposes, and find them quite satisfactory.

If there are four men extracting, one will work altogether in the yard, removing full combs and putting back empty ones; a second man carries the combs forward to the cellar and back, and puts in odd time putting in the empty combs, and the other two work in the cellar all the time. As I work in the yard, and the man carrying combs goes to putting combs back as soon as he arrives, it frequently gives me a little leisure.

If three men are working, one works in the yard, one carries and helps in cellar, and the third works entirely in cellar.

The coolness of the cellar has never interfered with the extracting process, nor with the health or comfort of the workers. My men rather like the cellar extracting.

M. V. FACEY.

It is quite likely that I will try extracting in the cellar another season. The extractor will be set upon the floor, and a hole dug and boarded up in which to place the strainer and the scales for weighing the cans as they are filled with honey. I think that I shall place a partition across the middle of the cellar, take off the honey with bee escapes, store it in the back part of the cellar, behind the partition, beating it up with a coal fire before extracting it.

EXTRACTED DEPARTMENT.

AN EDITOR'S LIFE.

It is Full of Labors and Cares, but His Journal Shows his Character.

Green's Fruit Grower has a department called "The Editor's Talk with his Readers." In glancing over this department in a recent issue, my attention was attracted by the following paragraphs:—

The work of the editor is continuous and never ending until he is dead and buried. The fact is recognized by the words, "editorial harness." Editors are recognized as wearing a harness. I go to my office every morning with my pockets full of memorandums and interesting notes or clippings and at once sit down in an attempt to arrange and prepare them for publication, and while I am doing this and dictating editorials, clerks come in from the various departments and pile upon my desk numerous letters and communications, or box after box of fruits for which names are desired, until my desk looks much like a museum of curiosities, and when the noon hour arrives I am often too fatigued to eat my dinner. Some of these letters coming to my desk ask about the vital questions of health, domestic or financial troubles, while another may ask advice about the sick rooster of a man in Wisconsin, an ailing plum tree in Idaho, or a man suffering from an incurable cancer.

The editor's character and disposition and energy and his very life goes into his publication. Green's Fruit Grower is a part of its editor. It could not exist as it is without its editor as he is. If the editor is disposed to be helpful, this fact will be plainly seen by the appreciative reader, if the editor is a fighter, a man given to quarreling, that fact will be made evident also. If the editor has artistic feelings, is humanitarian or philanthropic, these facts will become apparent. It is for these reasons that the reader comes to have confidence in the editor of his favorite journal and looks upon him almost as a father.

Many products show the characteristics of the hand or brain that pro-

duced them, but none more so than the newspaper or journal—it is as truly a part of its editor, and shows his character as clearly, yes, more clearly, than does his face. Let me read a journal a year, and I will know its editor better than I do my next door neighbor.

FEEDING BEES.

Some Points in Regard to Feeding Them in Cold Weather.

In a late issue of Gleanings I find the following editorial:—

If you have neglected to feed your bees, avoid giving them feed in cool weather during the day. If the weather is too chilly for the bees to venture out, it is a sad mistake to force them out into the open air by giving them a big feed during daylight hours. The feed should be given at night, or at least when it is so dark that no bees will rush out. If feeding is to be done during the day, let it be practiced when the atmosphere is warm, otherwise there will be a tremendous loss of bees that fly out and become chilly, unable to get back.

As the years go by, I am more and more inclined to admit that a man may be correct, even though his experience differs from mine.

I well know that in warm weather, if bees are given food when they are not accustomed to receiving it, they will make a grand rush for out-of-doors, if it is daylight. For this reason I much prefer to give bees their first feed in the evening after it is too dark for them to fly.

Now then, we, brother and I, have been feeding bees this last fall after the weather was cool, too cool for the bees to fly, and there was none of this rushing out into the open air that Bro. Root speaks of. The sugar that we

ordered was delayed, and then mis-sent, and was about a month behind in reaching us, so we were feeding bees more or less from the last of September until the fore part of November. I presume we fed 100 colonies when it was too cool for bees to fly; and there was none of this demonstration mentioned by Bro. Root. I can't help wondering if he was simply theorizing when he wrote the above item, or whether he had actually fed bees when it was too cool for them to fly with safety, and met the kind of a disaster he mentions. If the latter, why the difference in his experience and mine?

While we are on this subject of feeding in cold weather, let me make another quotation from *Gleanings*, from a most excellent article by C. A. Hatch of Wisconsin, on the building of cellars, and the cellar-wintering of bees. In speaking of feeding bees in winter he says :-

This should never be done except as a necessity, and then only with combs of honey or cakes of candy hard enough so it will not run. Liquid feed should never be used, as it gets too cold, and chills the bees to death to fill up on it. In feeding frames of honey they should be put as close to the cluster as possible, and candy should be either molded into a frame so as to hang next to the cluster or be laid just over it under the quilt.

Before commenting upon this quotation, let me give another clipping on subject. This time it is from the pen of E. A. Morgan, of Wisconsin, and published in the *Farmer*, of Minneapolis, Minn. In giving instruction for the safe wintering of bees, Mr. Morgan, among other things, said :-

If some hives are found to be extra light when carrying them in, set these by themselves and feed them either sugar syrup or honey. Do not let any colony starve for fear of disturbing them by feeding. Many claim nothing can be fed in the cellar but sealed comb honey. This is a mistake. Liquid food can be given in the cellar with perfect safety; make it of two parts by

measure of granulated sugar to one-third water. Melt and let come to a boil, cool to blood heat and feed with a suction feeder above the frames. I have taken colonies to winter that had nothing but the bare combs, put them in the cellar and fed them in this way and wintered them and could see no difference between them and those wintered on sealed honey. In the winter of 1883 I wintered forty-three colonies on sugar syrup alone, costing \$1.00 per colony. I gave them ten feeds during the winter, placing a quart of liquid food on each once in fifteen days and succeeded with every one.

Since then I have wintered an occasional few the same way successfully. Still, experienced bee men will tell you it can't be done, simply because they never tried it. I have wintered colonies on sugar candy by laying it at the entrance and never opened the hive during the winter.

A year or two ago, I visited Walter Harmer, a veteran bee-keeper of Manistee, Michigan, and found him feeding his bees sugar syrup in the cellar. They were scant of stores in the fall, and he did not have the money then to buy the syrup to feed them. When he began realizing on his crop of honey, he began feeding the bees; and it was none too soon. It was nearly spring when I was there, and he had been feeding them nearly all winter, using feeders of the pepper box style. His bees came through the winter in perfect condition.

I can't help wondering if Mr. Morgan is not correct when he says that "experienced men say it can't be done, simply because they have never tried it." Is it one of those fables that are handed down from generation to generation?

I think it is much better, in that it is less trouble, to feed the bees in the fall, but there is no excuse for letting them starve in winter for fear that feeding syrup will give them the "chills," provided they are in a warm cellar. Candy may be just as good, but here are two men who have tried syrup and found it all right.

OVERSTOCKING.

How Far Bees Will Fly After Nectar, and
Some Hints on Choosing a
Location.

In these days of out-apiaries, the question of overstocking, and how far bees can fly, and profitably gather nectar, are points of decided interest. It is not possible to say accurately how many colonies may be profitably kept in any given locality. The seasons and conditions are too variable for that. The best that we can do is to get at the matter approximately. To this end, every bit of evidence becomes valuable; and the following article contributed by Mr. Doolittle to the American Bee Journal is not only valuable but interesting. Mr. Doolittle says:—

A correspondent wishes me to give, in the American Bee Journal, my views on overstocking a location with bees, and also what kind of a location I would choose for successful bee-keeping. My views on overstocking may not be considered quite orthodox by all, yet I think I can give facts to prove my position. If I had a really good location I would not fear overstocking it with from 300 to 400 colonies, but I think that from 150 to 200 would be as many as an average location would support to the best advantage, while there are doubtless places that 50 colonies would be as many as would give good results to their owner.

When we take into consideration that bees fly from choice, from 2 to 4 miles from home, and are led on by receding bloom to 5, 6 and even 7 miles, this matter of overstocking is not so much to be feared as some seem to suppose. I know that we have often been told that bees do not go more than 1½ miles from home, and, if they did, it could not be made profitable, as so much time would be consumed in flying, that it would not pay. But plenty of proof can be given that bees fly more than that distance. Allow me to give some of the experience along this line which has come under my observation.

When the Italian bee was first introduced into these parts, the man who bought them lived fully three miles from my home in a "bee-line." That year he Italianized all the colonies he had, so that the next spring his apiary numbered from 40 to 50 colonies of Italians—the only bees of that kind there were within 50 miles of this place. I was exceedingly interested in these bees, but did not think I would invest in them till I found out what his would do.

One fine morning during apple-blossom I went into the orchard to see the bees at work on the blossoms, as the orchard was young, and the limbs low, so that the bees were in easy reach of my vision. The second bee which came under my notice was an Italian bee. I now became all interest, and I found by actual count that every 5th bee at work on those blossoms was an Italian bee, when an average was taken in counting 100. And this with apple-blossom in profusion everywhere, and 200 to 300 colonies of black bees within 1½ miles of this orchard. These facts I jotted down in my diary, where I find them today, under the date of May 24, 1870. This fact influenced me still more favorably toward the Italian bees, and I went to see these bees at work in their own apiary. I found them at work industriously, and very pretty to look at, but concluded not to be too hasty in purchasing them.

About this time it was told in the "Old Reliable," that Italian bees would work on red clover to much better advantage than did the blacks. As we then had thousands and thousands of acres of red clover around us, I was again interested. The next day, after reading this, I was at work cutting red clover in a 10-acre field, for hay. This field was one mile from home, and that mile was so much further from this apiary of Italian bees, or this particular field of red clover was 4 miles in a direct line from these bees. When I thought the horses needed a little rest, I went into the standing clover, and the first count of the bees at work on the blossom was 10 Italian bees to 4 blacks out of a count of 14; and this with fields red with clover in every direction. I hesitated no longer, but went to see the owner of these bees, and before night of that day I had 2 Italian queens in introducing cages in two of my best colonies, which led to my adoption of the Italian bees as "the best bee in the

world," a year or two later, since which I have had no others except to try a few of each new race as they came into the United States.

From the above it is entirely evident, to my mind, that those who claim that bees do not go over $1\frac{1}{2}$ miles from home are not fully informed on what they are claiming. To the objection that it is not profitable for bees to fly so far, I wish to give a little more of my own experience and observation:

To the southeast of my home the land rises gradually for 5 or 6 miles, and at the end of this distance it is 800 to 900 feet higher than at the apiary. Unless interrupted by a long rain the bees follow the receding basswood bloom till the top of this hill is reached, when I frequently have them work from 5 days to a week on the bloom on the top of this hill, and as far as I have ever been able to see, they do so to nearly or quite as good advantage as they did when the bloom was open all about the hives. Of course there is a chance to be deceived a little here, for the same amount of nectar coming in the hives at the close of a long harvest, will count for more than it will at the commencement; for in the commencement much more nectar is used in the construction of comb, and in the commencing of business, than there is when the combs are nearly completed, and the bees are capping up the last honey put in nearly finished cells.

Now about my choice of a location: If I were at liberty to choose a location where I desired, and could find such a one, it would be in a place where the land sloped gently to the southeast, with pasturage as follows:

Some willow to stimulate early breeding, with sugar or hard maple to follow; then apple-blossoms as an assurance of plenty of stores from apple-bloom to white clover, which latter, should be in abundance. Next I would want plenty of basswood, and that on a hillside, or extending from a valley, in which the bees were situated, up the sides of hills or mountains, with plenty at the top, so as to prolong its bloom; and, lastly, where buckwheat and fall flowers were in abundance.

But the most of us have other ties besides the bees that fix our location, and so we have to put up with such a one as we have, and the man or woman is to be honored that can be contented and bring about good results with

only limited bee-pasturage at his own home, where duty calls him or her to remain.

If I could have but one of the above-named sources for honey, I would select basswood first, clover second, and buckwheat as third. From all sources of information I can gather, basswood is the greatest honey-producer of any nectar-secreting flower there is in the United States, for the length of time it is in bloom; and if the foot of a mountain, the sides of which are covered with basswood trees, can be our location, we shall have no reason to complain of the length of time it is in bloom. Then basswood comes in bloom so late in the season that nearly all colonies can be brought up to their maximum strength, before the first bloom opens, which cannot be said of its rival, white clover.

I think it possible to overstock a location, but think there are very few locations in this country that *are* overstocked. Even after the yield per colony is lessened on account of overstocking, a *long* time after, it would still be profitable to increase the number of colonies, as the cost of management is reduced in proportion as the number of colonies in an apiary is increased.

I agree with Mr. Doolittle that there is no plant that equals the basswood as a honey yielder when the conditions are right, but the basswood remains in bloom only so short a time, that its period of bloom is likely to pass without the conditions being suitable for honey secretion. The period of bloom in the white clover is so much longer (five or six times as long) that there is almost certain to be some days, or weeks, when the conditions are favorable to honey secretion. For this reason, my preference would be the clover if only one kind of plant was to be secured in choosing a location. That is, clover would be my choice out of the list mentioned by Mr. Doolittle, but I believe that the wild, red raspberry is less affected by the weather conditions than is the clover—that is, a more sure yielder.



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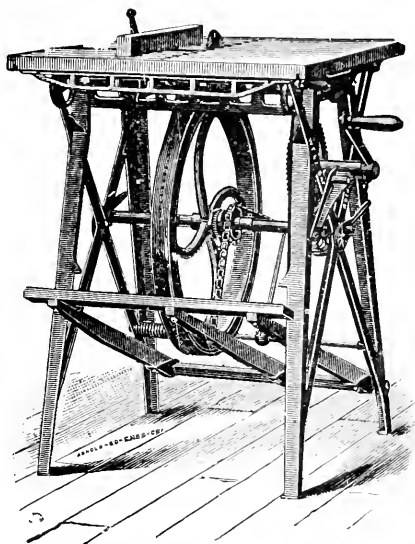
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F. DANZENBAKER, Miami, Dade Co., Fla.

Bees for Sale!

I have 100 colonies of bees in my cellar. They are wintering perfectly—bees, combs, hives and honey, dry and clean. Next month the bees will be on the wing again.

By reference to the editorial columns you will see that my brother and myself will have about 600 colonies of bees under our management the coming season, and to buy cans in which to store all of the honey that we hope they will gather will cost not far from \$200. To secure money for that purpose I have decided to sell a few of the bees here at home—perhaps 25 or 30 colonies.

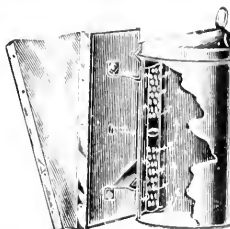
The bees are all pure Italians; most of the colonies having queens of the Superior Stock. Not a queen will be sent out that would not pass as a breeding queen—such as dealers sell in the spring for from \$3.00 to \$5.00 each. The hives are 8-frame Langstroth, have been used only two years, and are painted with two good coats of white paint. The combs are all built from full sheets of foundation and wired at that. In fact, the stocks are strictly first-class in every respect—could not be better and the price is \$6.00 per colony, no more and no less, even if one man should take the whole lot.

I am ready to accept and I book orders accompanied by the cash, and when have received orders for 30 colonies, this advertisement will be discontinued, and no more orders accepted. The bees will be shipped by express, about fruit-bloom time, and safe arrival guaranteed in every respect.

If you wish to stock your apiary with a strain of bees that has no superior, here is a chance to get a tested queen, already introduced, in a full colony, whereby she can be shipped without injury, early in the season, all at moderate price.

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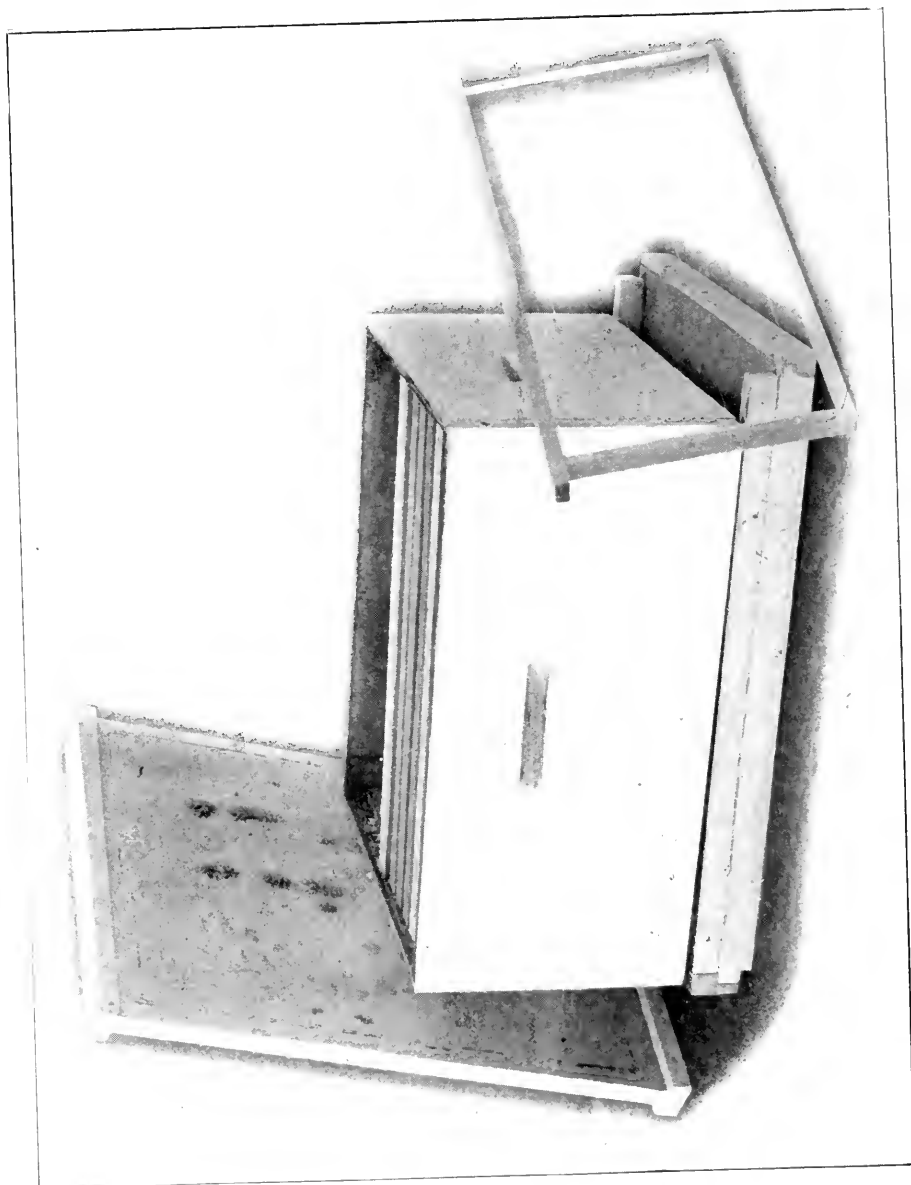
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W. Z. HUTCHINSON, EDITOR AND PUBLISHER.

VOL. XX. FLINT, MICHIGAN, FEB. 15, 1907. NO. 2

A Plea for Simplicity in Hive Construction.

W. Z. HUTCHINSON.

BEFORE talking about hive-construction, I wish to mention a few criticisms or suggestions that have come in on the making of frames, the wiring of them, and the putting in of foundation.

Wm. Muth-Rasmussen, of California, suggests that, to save room, my machine for piercing end-bars may be made so that it could be fastened into a vise, or bolted to a work-bench, thus doing away with the long base-board which takes up so much room. The suggestion is a good one, but I had no bench nor vise, and had to make the machine to fit my environments.

OIL FOR LUBRICATING AWLS WHEN PIERCING FRAMES.

Mr. Muth-Rasmussen also says that, with the lumber that he has to deal with in California, the oiling of the awls would make the work much easier. Under the point of each awl, in the bed of the machine, he would have a small hole, perhaps $\frac{1}{4}$ inch in diameter, filling the

holes with cotton or sponge saturated with oil, thus the point of each awl would be lubricated with each stroke. The California pine is much harder than our white pine, and such an arrangement might be all right for that kind of lumber. Our white pine is so soft that the awls pierce it very easily.

Mr. H. H. Stewart, of Emerson, Illinois, says that three horizontal wires are as good as four. Perhaps they are. I never tried that number. If a man is not going to hive swarms upon sheets of foundation, nor extract honey from new combs, nor move bees about the country, then there is no use for wires at all. If he is going to do any of these things, then wires are needed. Just how few would answer I don't know. The help that these wires are when extracting from a new comb is something that I fear has not been given sufficient importance. I feel that four wires are none too many when viewed in that light.

IS IT NECESSARY TO IMBED THE WIRES IN
BROOD FRAMES.

Mr. Stewart also says that it is unnecessary to imbed the wires; simply weave the foundation in between the wires, on one side of one wire, then on the other side of the next, etc. This is a plan that I once thought seriously of giving a trial. One or two wrote me that they had tried it, and found it all right, but a whole lot of them wrote and said don't do it. There would certainly be no support for the foundation when hiving swarms. Another thing, and it may not be of any importance, but I'll mention it: The wires would not be in the septum, but to one side of it. Would brood be reared in a cell having a wire lying across the bottom of the cell? Perhaps it would. I must confess my ignorance on that point.

Bro. Stewart says it is not necessary to imbed the wires, and now comes friend Adrian Getaz, of Tennessee, saying that it is not necessary to fasten the foundation to the top bar, simply have the uppermost wire close to the bar and the bees will do their own attaching. This supposes, of course, that the wires are imbedded. I should fear that the top of the sheet of foundation might sway to one side, in some cases, especially if full swarms were hived on the foundation; but, in other cases, if the wire is drawn taut, it might be all right.

Dr. C. C. Miller says that I ought to have said that the board upon which the foundation is laid when the wires are imbedded, is a trifle (perhaps $\frac{1}{4}$ of an inch) smaller than the inside of the brood frame. Correct.

THE USE OF RESIN.

He further says that the use of resin for fastening in the foundation has the objection that if some man should, at some future time, melt up the combs into wax, that the resin would go into the wax. It would; but the amount would be so infinitesimal that it seems to me it would do no harm.

I have received several articles, or letters, telling how to hold the spool, and guide the wire, so as to avoid tangles, and allow the frame to be filled direct from the spool. In all of these plans the *whole length* of wire has to be drawn through the holes, and, in my experience, it takes much longer than to draw only half of it through, as described in my former article on this subject. Another objection urged against the plan I have described is that it requires an inch or two more of wire, in order to hold it and draw it taut. This is true; but when wire costs only about one cent for 100 feet, an inch or two on each frame does not count much against any perceptible saving of time.

THE CHAFF HIVE IS TOO UNWIELDY.

The question of frames and their construction, the wiring of them, and the filling of them with foundation, has now been fairly well considered, and it is time to take up the kind of hive in which they are to be hung. I would not tolerate a chaff hive. It is expensive and cumbersome, and does not always accomplish the purpose for which it was designed. In our northern climate bees certainly need protection in the winter, and chaff hives furnish it probably as well as it can be furnished in the open air, but they don't always save the bees in a long severe winter, when the cellar brings them through all right. The cellar is the only method whereby an absolutely uniform temperature can be maintained regardless of the outside weather. The only advantage of out-door wintering lies in the opportunity of allowing the bees to fly if there comes a warm spell in the winter; but, on the other hand, bees with good stores, and kept in a warm cellar, don't *need* to fly in the winter. This is not an article on the wintering problem, only as it is touched upon in considering chaff hives, but, if I wished to winter bees in the open air, I would still use single-wall hives, and pack them up in packing cases with chaff, planer shavings, sawdust, or the like. I would rather go to

the trouble of packing them in the fall, and unpacking them in the spring, than to be hampered all summer with the bungling, stand-still character of the chaff hive. All manipulations must be made by handling frames.

Yes, my preference is for a single-wall hive, made just as simple as it is possible to make it. The bottom board, a plain board with cleats at the end to prevent warping, and then strips of wood, $\frac{1}{2} \times \frac{3}{8}$, nailed around the sides and back end to support the hives above the bottom board. In place of nailing on a strip at the back end, this portion of the bottom board may be formed by allowing the cleat at the back end to project $\frac{1}{2}$ inch above the surface of the bottom board. I also think favorably of what has been called the reversible bottom board, that is, a bottom board made exactly as I have described, with the addition of $\frac{3}{8}$ strips on the under side, thus the bottom board can be turned over in hot weather, and this gives an entrance $\frac{3}{8}$ of an inch in height, instead of $\frac{1}{2}$ inch. It adds very little to the cost, and is certainly a benefit in hot weather; while I think a small entrance is a benefit in the spring. Warmth is then needed in the rearing of brood, and we all know how a large door left open would hinder us in keeping our houses warm.

The body of a hive I would have a simple box, $\frac{3}{8}$ of an inch deeper than the frames, and $\frac{3}{4}$ longer, inside, than their length, with rabbets cut in the inside of the end-pieces to support the frames. I would also have hand-holes cut in the sides for convenience in lifting the hives. I have used hives with a rim of wood nailed around near the top. This rim makes an excellent handle, and strengthens the hive somewhat, but I think it unnecessary on that score. I would not have the corners of the hives notched or dovetailed, as it is called. I would not even go to the expense of halving the corners. I will admit that corners so made are stronger, but it is a strength *not needed*. A bee hive is not thrown about like a box sent by freight. It is

handled carefully in the apiary, and when the corners are well-nailed, with cement-coated nails, care being taken to have the heart side of the lumber placed out, there will never be any trouble from weakness of the corners. I have used such hives for years and years, and know whereof I speak.

DON'T TRY TO MAKE A COMBINATION COVER,
SHADE-BOARD AND PACKING-BOX.

I would continue the same simplicity in the construction of the cover. I would have simply a plain, flat board with cleats at the ends to prevent warping. I am aware that with ten-frame hives, there is now difficulty in getting lumber wide enough to make such covers, but such a cover can be made of two or more pieces, by sawing grooves in the edges, painting the edges with thick paint, and placing strips of tin covered with paint in the grooves. Let the pieces then be pressed tightly together, and the end cleats nailed on, and they are the equal of covers made from a single board. I know some have advocated covers of metal having a lining of felt, or some non-conductor of heat, the claim being made that much heat is lost through the cover in the spring. Of course, there is a point here; but there is another one: If the heat is prevented from escaping through the cover, it spreads out and strikes the sides of the hive, and escapes through them, unless prevented; for this reason I would protect the *whole* hive in the spring by wrapping it in tarred felt; and when it is time to remove this covering, there is no need of a special cover for conserving the heat.

My plea is for simplicity in hive-construction. For plain simple frames, without projections, or staples, without any excrescences whatever. Then I would hang them in a hive that is equally simple. I believe, yes, I know, that all of these "fixings" that are put upon frames and hives are a needless expense that brings no recompense.

FLINT, Mich., Jan. 30, 1907.

Helpful Hints on Extensive Bee-Keeping.

E. D. TOWNSEND.

IT IS now January 2nd, and we are beginning to plan for the busy season. The first thing to do is to order what new hives, supers, etc., we shall need for another season. We bought 77 colonies last fall, and, as the hives they were in were not the size we use, we bought the bees until next May. Then, a year ago, we bought 45 colonies that are *still* in undesirable hives. In addition, we are figuring on a little increase next summer, and this will all be put into new hives. Then, these new additions call for more upper stories, together with frames to nail and wire. All these supplies will be ordered *now*, so that we will get them early next month; for, you see, we want them all nailed up, and frames wired, before the 20th of March; because, from then on, we will have our hands full, as the bees will soon be taken from their winter-quarters, and given spring protection. Then we will have a honey house to build during April; and in May a carload of bees will be moved 100 miles north to the wild red raspberry district. In addition to this, during the warm period of April and May, all the new work we are putting up this winter, besides some of our older hives, will have to be painted. Then there is our foundation to be put into the brood and super frames, sections to be set up, and foundation to be put in, this, too, is done during April and May. By this time, the reader will see how impossible it would be for us to put off ordering our supplies, so as to see "how the bees are going to come out next spring." Have confidence in your business, and order a conservative amount of supplies. Should you have a few left, they will not spoil; and, next spring,

if you see you have more supplies on hand than you can possibly use, leave this unused portion without foundation, as the foundation will keep better, usually, in the shipping box.

THE SUPPLIES WE USE AND RECOMMEND.

We suppose we have more inquiries along the line of what hive we use, than all others put together. Inquirers seem to know we use the 10-frame hive, but they want to know just the exact cover, body, frames, etc., we are using, so I presume a few words along this line would be appreciated.

The cover is what is listed as the Excelsior, and we order them made 17 inches wide, so there is a half inch of eaves on each side. Then they ought to be made of heart pine lumber, and in addition to this they ought to be cut *heart side up*. I am satisfied that these two precautions, will double the life of the cover. The sap lumber can be put into the bodies.

PUT THE HEART SIDE OF THE LUMBER OUT.

The bodies are the regular 10-frame, and we shall order them cut *heart side out*. This is very important, as the *concave side* of a board is always the *sap side*. We nail the sap side *in*, and then there will be no gaping at the corners. Then, in nailing, we make two grades of bodies; selecting the very best heart material for the *hive* bodies, using the sap pieces for the supers, as they are used only during the dry, summer months, and do not get the hard usage that the hive does.

The bottom boards we use are what is listed as "the old style" or B bottom. The floor is $\frac{7}{8}$ of an inch thick, and made reversible; the strips forming the space

below the frames, also the depth of the entrance, is $\frac{3}{8}$ inch on one side, and $\frac{7}{8}$ on the other.

We are ordering ours made this year the same as above, only the floor will be built of narrow planed and matched material, running *crosswise*, and cleated at the ends (side of the bottom board) the same as the old Heddon, Blanton cover used to be made. This, besides making a better bottom, will throw both entrances at the same *end*, and this will allow the bottom board to sit level on the stand, while the regular is $\frac{3}{8}$ low at the back, if one side is up, and $\frac{7}{8}$ if the other side up. We have found to our sorrow, that the frail $\frac{3}{8}$ bottom will not stand the slam-bang handling of moving, etc., in out-yard work.

The brood-frame, either Hoffman or metal-spaced, will be used. We have both in use, and cannot see much difference. As we rarely ever handle brood-frames, it does not make any material difference whether the staple-spacers are used or not, as far as moving bees is concerned, for when they have had bees in for a year or two, there is no swinging of frames, even if moved on the cars, as the brace combs hold them firm.

WHY AN EXTRACTING FRAME SHOULD BE ONLY
 $\frac{7}{8}$ ALL THE WAY ROUND.

But when it comes to a frame for the supers, there is no suitable frame listed. They seem to be all designed for the brood-nest, or, perhaps, for comb honey. The wide top-bar and wide end-bars, and narrow bottom bars, are all unsuitable for extracting purposes. What we want and must have, to uncap to the best advantage, is a frame about $\frac{7}{8}$ wide, clear around. With this style of frame in our supers, spaced $1\frac{3}{4}$ inches from center to center, we get great, fat combs; then, with a long uncapping knife, cut clear down deep, clear to the frame. In this way we get more wax in the uncapping tank; but the greatest advantage is, we can uncap a whole comb at *one stroke*. Then the item of a thin comb to give back to the bees, thus getting a better

cured and very much superior article of honey is the main point.

To illustrate: In producing honey for exhibition purposes, we insert full sheets of foundation in between our extracting combs, in the supers of some of our most powerful colonies; and, after quite an experience along this line, we have never found a better way to produce a superior article of extracted honey. While it would not be practical to produce all our extracted honey, direct from foundation, the next best plan is to fill our supers with these, *deeply* uncapped combs. With these the cells are only about half an inch deep; and this drawing out of the combs when being filled with honey, gives the bees an opportunity to cure the honey *nearly* as well as they would in drawing out foundation. Never give *thick* extracting combs, during a heavy flow of honey.

The wide top bars do not admit of this deep uncapping, and wide end-bars are inconvenient. The kind we order is a $\frac{7}{8}$ square top-bar, with double groove and wedge, for fastening in the foundation—short top bars, with end-staple spacers. This style of frame needs a $\frac{3}{8}$ thick end bar, as it has to be nailed through the top-bar into the ends of the end-bar, with two $1\frac{1}{4}$ inch cement coated nails. The bottom-bar is $\frac{1}{4}$ inch thick, $17\frac{5}{8}$ long, and nails on the ends of the end-bars.

WHY MANUFACTURERS OUGHT NOT TO MAKE
HIVES ANSWER FOR CRATES IN
SHIPPING.

There is another subject I wish to comment on, before leaving this interesting hive and super question, and that is the practice of crating, or, I should say, *not* crating, our hives and supers for shipment. These beautiful hive-bodies and supers are made into shipping cases, and then turned over to the freight smashers to do the rest. Did I say beautiful (?) Judging from those that were inside and *properly crated*, they must have been beautiful when they left the factory. I only wish the manufacturers could see

them, as we see them at this end of the line. I suppose between the factory and here, our supplies are transferred three or four times, an operation that would often happen between almost any two shipping point 300 or 400 miles apart. Now, a railroad man was never known to sweep out a box car before loading it, so, somewhere some of way the hives are almost certain to get into a car that has been used for coal, or wood, or lime, or flour, and a very common idea seems to be to have them shipped in a car that has been used for *all* these purposes, a regular conglomeration of dirtiness; then a spring tooth harrow may be thrown on top, with the teeth down, to finish up the job. Now, this spring tooth harrow episode is no josh; it actually occurred in one shipment, that we unloaded direct from the car. The teeth had scraped and dug; then, moved along, caused by the vibration of the car, and then commenced and dug anew—some of the furrows were nearly half way through those be—— I can't say it, for I can still feel that heart rendering sensation, just as if our last "long green" had been

drawn into the furnace, and burned before our eyes; kind of homesick like; not quite that either. Then comes a change. We begin to get riled a little; then sweaty around the collar; then you hear something *drop*: that's our foot coming down on the car floor; and we firmly declare, that that shipment will be fired back to this manufacturer forthwith. But we decide we will take them home. Then we would like to see what's inside. They are opened. Finally they are all taken out. We have slept over it. We buy a quarter's worth of sand-paper and go after them. They look some better. The sweat is now dry under our collar; and *do you know*, we never reported it to the manufacturer.'

Now, Mr. Manufacturer, can't we have those superb hive bodies, and supers crated? These comb honey carriers would be just the thing; then we could use them for shipping comb honey when they are empty; or, if we do not produce comb honey, give them to some neighbor who does, and take our word for it, your customers will thank you very much.

REMUS, Mich., Jan. 2, 1907.



Size of Hives and Frames and Their Advantages.

M. V. FACEY.

PERHAPS few people following bee-keeping exclusively as a profession have used as many kinds of hives as I have. My hives may be said to be the result of accident rather than design. During the last 10 years I have sold over \$1000 worth of bees, and bought about \$600 worth. In selling I allow the bee-keeper to select the kind of hive he prefers, and in buying I place more value on a strong swarm of active workers and straight even combs than I do on the

style of hive. One reason of this indifference to style of hive is the fact that, as a rule, I have found very little difference in the result from the different kinds. I have, however, found advantages and disadvantages connected with each kind, and it is with these advantages and disadvantages that this article will treat.

1st. I shall commence with 10-frame hives, of which I have about 100 in use, having a frame $\frac{3}{4}$ inches longer than the standard Langstroth frame, and the

same depth. Results from this hive are about the same as with the standard Langstroth. If a bee-keeper has them there is no reason why he should discard them for the standard. These hives are well adapted to strong colonies and heavy honey-flows. I tier them up three, four or five stories high. Advantages: Large capacity for honey storage; not given to swarming. Disadvantages: A tendency in case of weak swarms to build up slowly. Taken altogether they have been very satisfactory.

2nd. Hives with frames $11\frac{1}{2}$ inches by 16, capacity 10 frames; also Dadant hives (about 2 inches longer). These hives are especially adapted to the production of extracted honey. The brood nest is more natural in shape than the former, with less waste space, which is very noticeable on comparing well filled frames of brood. This hive, for a large one, allows colonies to build up quite easily in the spring, maintaining a heavy increase of bees throughout the summer, and, in good years, easily leads the others in extracted honey yield. Newly built combs of honey must be handled carefully to avoid breakage, unless well-built to frames on the ends, but older frames are easily handled. They tier up three or four stories with advantage and are especially valuable when the flow is heavy.

3rd. Hives with frames $13\frac{1}{2}$ by 10 inches, 10 frames. This is a small hive, but is the best of any I have yet had any experience with for rapid building up in the spring. I tier them up usually to three stories and sometimes four. They have an economical brood nest, being compact without much waste of space anywhere. I can raise more young bees in a given colony with this hive than in an ordinary Langstroth. They are especially valuable in case of a somewhat slow yield, and I have found them well adapted, in an average year, to the securing of a good crop of honey. My colonies in them always have done well, and yet I prefer, for my own use, something

somewhat larger, since, with the large hives, I get somewhat more honey with less swarming. I cannot recall a single case of a person who has helped me through two or three seasons, and then bought bees, who has not taken the deep hives.

While I like a large, roomy hive for my own use, as a producer of extracted honey, and while I like the heavy frames of honey when extracting-day comes, yet it is not the object of this article to especially puff any especial kind of hive; neither am I addressing the larger bee-keeper who is "set" on his own style of hives, but I am rather addressing a more numerous class of small bee-keepers whose hives may not be standard, and who are possibly being urged to discard their hives and invest in the standard at a cost equal to $\frac{1}{2}$ the entire value of their bees *after they are rehived*.

In this line I remember, a few years ago, of a bee-keeper visiting me, and using his utmost endeavor to persuade me to change my style of hives and get hives like his. I then had something over 200 colonies, and he would undertake to supply all the necessary hives for \$400; and yet, year after year, I was securing better crops of honey than he was, and also meeting with greater success in wintering.

Set it down in big letters, read it over and over again, it is the *bee-keeper* and not the *hive* that wins success. The cost is also very much more than the hives to make a change; since, though you utilize all the comb, and do your part perfectly, it still greatly retards the bees, and yet, there are certain hives which I have always used to disadvantage. I have had, from time to time, quite a number of hives with frames about 12 inches square or perhaps a trifle deeper than 12 inches. They do not tier up well, and any hive that tiers up poorly should be condemned. They are too short and too deep for an economical brood nest, hence do not build up well in the spring. Colonies in them are also heavyswarmers. I do well when

I get two-thirds of my average crop of the year from them.

Hives shallower than the Langstroth may be, and some kinds undoubtedly are, all right for comb honey, but they do not work well for extracted. Giving my colonies in deep and shallow hives equal attention, and I will produce as many deep bodies of honey as shallow ones.

EIGHT-FRAME HIVES TOO SMALL.

The eight-frame hive, so common in many places, is not well adapted to the production of extracted honey. It is not roomy enough, and does not afford a good queen sufficient room for the brood nest. In actual practice I have found that colonies in them produce scarcely $\frac{3}{4}$ as much honey as in ten-frame hives. I always avoid them when I buy, and when I sell I always give them at a discount. I have also found well nailed plain bodies the equal or superior to the dovetailed in durability.

Hives of whatever kind or dimension should be as simply made as possible. There should be no portico. The bottom ought to be reversible, one side affording the summer entrance, and the other side affording space, when reversed, for proper

ventilation in wintering. If the colony is to sit in the shade, a single cover is sufficient, but if in the hot sun, a double one is better. There should be neither caps nor honey boards; and tin rabbets for frame-rests, in this locality, are generally only a nuisance; as my bees seem to especially delight in filling them with propolis. Frames can rest on nails, or the top bars can project as in the Hoffman frame. Top bars should always be sufficiently heavy to prevent sagging. The Hoffman has a fine top bar, and is perhaps the best frame in the market.

In this article I have spoken of a number of kinds of hives. I have also advised the reader not to change his style of hives without good reasons, but I have not advised him to have more than one kind of hive in a yard. Every hive and every frame there should be of *exactly* the same size; both for the lower, and all the upper stories, and every frame in every hive should be removable at will, and interchangeable. You will thus be saved time and worry and your profits will be greatly increased.

PRESTON, Minn., Jan. 4, 1907.



Perfect Control of Increase with no Shaking.

E. F. ATWATER.

THE system of swarm control or non-swarming, that gave us the best results, with a minimum of labor, with or without increase, no absconding, very little excitement or disturbance to the colony, no shaking, no delay, will now be described.

Our bottom-boards are mostly plain, flat and end-cleated, with, preferably, $\frac{3}{8}$ -inch strips nailed on three edges of

the top, on which the hive rests, like the old, thick, non-reversible bottom-boards so long supplied with the standard hives. As our hive-bodies are end-cleated at the rabet, with cleats $\frac{1}{2} \times 2 \times 16$ inches, we have our bottom-boards made one inch longer than usual, so a bottom can be used for a lid, in an emergency.

Now take an expansion bit and brace, and bore a $1\frac{1}{2}$ inch hole through the

bottom-board, near the rear end. Nail on over this hole a Hansen ventilator, pull back the slide and insert a piece of queen-excluding zinc two inches square, with the rough burr-edge of the zinc upward, completely covering the 1½-inch hole.

Now that we have several bottom-boards so prepared, we are ready to control swarming. We will go to this colony that wishes to swarm (the treatment would be the same if it did not wish to swarm, if strong) find the queen, put her with the frame of brood on which she is found, after destroying any queen-cells in this frame, into an empty hive-body. Into an outside comb of the old brood-nest pour as much water as you can, into cells not containing brood, or into an empty comb which can take the place of the comb of brood removed. For a lid to this old brood-nest put on one of the prepared bottom-boards, seeing that it fits *bee-tight*, nail a strip of lath over the old entrance and now take the hive-body in which you hung the frame of brood, bees and queen, and place it on the prepared bottom-board which is now the lid to the old brood-nest, and the floor of the new one. Put in each outside of the new brood-nest a frame of honey and pollen, or empty comb; fill out with full sheets of foundation in wired frames, or with combs; put on a queen excluder and at least two full-depth 10-frame extracting supers of comb or their equivalent in shallow extracting supers.

The bees in the old brood-nest soon find themselves denied the usual exit, find the ventilator in the bottom-board above them, and, as they are queenless, so far as the old brood-nest is concerned, they pass up through the bit of excluder in the ventilator, and finding themselves with the queen, plenty of room for brood, with unlimited storage room, and practically a new location, as this entrance is now about 10½ inches above the old one, they work with all the splendid vigor and energy of a new swarm.

The field-bees will be somewhat confused until they find and become ac-

customed to the new entrance, but will soon adjust themselves to the change. Enough bees will remain below so that no brood is lost, (the water given was to aid in preparing larval food, a hint that I owe to L. Stachelhausen) nor do the very young bees desert the lower hive until several days old. A little thin honey or nectar may even be stored below, in case of a rush of nectar.

As the brood emerges, the older bees will continue to go above, reinforcing the working force of the colony, which does not become weak, as does a natural swarm.

When practiced rather early in the season, (May 10 to 30) to hold exceptionally strong colonies together until the flow is at hand, some of the finest hives of brood that any one ever saw are those produced in the new brood-nest under these conditions.

If no increase is desired, the old hive of emerging brood may remain there for 21 days, or more, or may be taken away and the combs used as desired. Three weeks after treatment the brood has all emerged, and the combs may be used anywhere in the yard.

In localities where the swarming fever is easily satisfied, and not liable to recur, in 10 days after treatment this old hive of sealed brood may be put on top of all, as an extracting super, after destroying any queen-cells or virgins on its combs.

As proof of the wonderful effect of this method of swarm control, we have found in many cases virgins emerging in the old hive in 10 or more days, yet there is no desire to swarm. If it is desired to requeen, the old queen may be killed after a virgin has emerged in the lower hive, destroy other cells below, if any, remove the bottom-board between the two brood-nests, and open the old entrance, putting the excluder over the old brood-nest.

In a few cases, where the work of closing the old brood-nest had not been securely done, we found that a virgin had mated, and we had two laying queens in the hive in due time.

If increase is desired, move the old brood-nest to a new stand, after 10 days, open the entrance and see that they get a queen from their own cells or supply one.

Another way: Remove the new brood-nest and laying queen to a new stand, 10 days after treatment, leaving the old brood-nest with all sealed brood, with *one* cell, virgin or layer, and open the entrance. By this latter variation the colony on the old stand is in fine condition for either comb or extracted honey.

THIS SYSTEM NOT WELL-ADAPTED TO COMB
HONEY PRODUCTION.

This plan of controlling swarming by a hole in the bottom-board, covered with queen excluding zinc, is not adapted, without modification, to the production of comb honey, as there is too much inducement for the bees to remain below on the brood, storing there, rather than build comb and do much work in supers and new brood-nest. All these things I have tested thoroughly during the past season, for extracted honey in the distant yard, and for both extracted and comb in the yards in the home district, and the plans that I recommend I have found *good*.

The possible variations of this method of swarm control are legion, and can be adapted, by any skillful bee-keeper, to his own locality and ideas of management.

I lean a board against the west side of the old closed brood-nest, if it is not well shaded, to avoid overheating. In a season of excessive swarming, some colonies so treated (or treated by *any other* method) will again be ready to swarm in three weeks, more or less, so *look out*, in such a season, and repeat the process, though I judge from the journals that such seasons are rare in most localities.

I think that this method of swarming, or swarm control, can be carried out in less time than any other, avoiding the faults of many other methods, but as a suggestion only, I hope that others will try the plan that I hope to test next summer—merely take a frame of brood, not bother-

ing to find the queen, and put it in the new hive, leaving the old queen in the old hive. Perhaps in 10 days we can re-unite them. Try this in the home-yard so that if swarming results there will be no loss. If this latter plan will work, all the advantages of the boasted secret "C. Davenport plan" will be realized, when the details are determined by trial, and I have seen some evidence which leads me to hope that will prove successful.

The valuable method of "hole in the bottom-board" swarm control which I have described, is the invention of Mr. George E. Dudley, of Colorado and Idaho, first used by him in the production of *comb* honey but after several seasons' test, found unsuitable, and discarded in favor of the method which he has kindly consented to allow me to describe in a future number of the Review. During the past summer I tested the plan that I have described, for both comb and extracted honey. For comb honey, results were poor to fair, for extracted honey, good to splendid.

The nearest approach to this method of which I ever heard, was Dr. Tinker's "New System," but his method was to allow the bees to swarm, then, about seven days later the old hive of brood was put *on top* of the supers, with a brood-board (similar to a bee-escape board, with no escape, the hole covered with a bit of queen-excluding zinc) between the hive-body of emerging brood and the supers, so the bees can pass below and join the new swarm.

If no increase is desired, I much prefer the plan that I use, as the emerging brood is below all, out of the way, and less honey will be stored in the combs as the brood emerges, there is less danger of over-heating, and the new swarm is practically in a new location, yet no actual swarming or shaking is necessary. After all the colonies in the distant yard had been treated as needed, given abundant storage and brood room, we took our departure.

MERIDIAN, Idaho, Dec. 10, 1906.

Securing all of the Nectar When Running Several Yards.

H. F. STRANG.

[The following article came to me as part of a private letter. It contained several points that are fair ones for profitable discussion, and I asked and received permission to send it to Mr. Townsend for his reply, and then to publish the whole—EDITOR.]

HESPERIA, Mich., Jan. 22, 1907.

Friend Hutchinson—A short time ago I read in one of the bee journals the advice to save all the bee papers, and when the stormy days in winter came, to get out the journals and go over them again. Now, I have been doing this the last few days, and I wish to make a few remarks about S. D. Chapman's article in March, 1906. Also to comment upon some issues I heard discussed at our late Michigan State convention, "on the side."

I will say, first, that I have always been a warm supporter of your ideas of keeping more bees, and making a specialty of bee-keeping, but I heard some ideas brought out at the convention "on the side," that shows me, at least, that there are two sides to every thing.

In regard to the system of bee-keeping that E. D. Townsend follows, anybody can plainly see that, with his system of management, he doesn't get more than *half* the honey that he could by a little more attention to his bees: at the same time he shuts others out from reaping the reward that he is allowing to go to waste. The way in which he does it is by allowing his queens the full swing of the hive, thus using up thousands of pounds of honey every season in raising a great horde of useless workers that come on the scene of action so late that they are only consumers.

Then, of course, he occupies a great lot of territory more than he would need to if he took better care of his bees. The men who commented on his management said it was like the great Cattle Barons

of the West, who fenced in millions of acres of the public domain, and shut out actual settlers from getting homes.

Now, of course, we all know there is no law in regard to these things, still, if a man should come, next season, and place a yard of bees down by the side of one of yours, asserting that, by your management, you were occupying territory from which you were getting only half the honey that might be secured by more careful attention, you would think at least he had lots of "gall."

I talked with several of the leading bee-keepers of the raspberry region, and they all say that first-class locations are getting scarce there.

Now, Friend Hutchinson, in making these remarks, I haven't intended to be personal in the least. Of course, there is one principle involved in them that will probably never be settled, and my ideas haven't changed in regard to a man running out-yards and adopting all the short cuts he can, still, I feel as if he ought to fully occupy his territory as long as good bee locations are so scarce.

I will say in regard to Mr. Chapman's article in the Review, of last March, that on the whole, I think he has the best of you: still I think he could, by using a larger hive, get the same results with a good deal less labor.

But say, his examination of hives beats my time. He couldn't mean that he made such time when they were tiered up. I have often been over 100 hives in an hour when only a few of them had the second super on, but when they get three and four supers on why I can't see how he can do it.

So hoping you will receive this in the friendly spirit 'tis meant, I remain,

Yours truly H. F. STRANG.

Mr. Townsend replies as follows—

REMUS, Mich., Feb. 5th, 1907.

Mr. W. Z. Hutchinson,

Flint, Mich.

Dear Sir :

Yours of the 2nd inst. enclosing Mr. H. F. Strang's article for me to answer, is received. Would say that I am surprised and pained to learn that there is a feeling existing among bee-keepers, antagonistic to the methods adopted by myself and others who keep bees extensively. But, I am using valuable space, so will try and answer friend Strang as briefly as possible.

As to the charge that, with my system of management, I do not get more than half the honey that I could by a little more attention to my bees, I would say that I get *all the honey that my territory produces*. Our bees are not *neglected*, as some have the impression; they are supplied with empty-comb-room every minute during the honey season. Now if Mr. Strang, or any one else, can work out a system that will double my honey crop, no matter how much work it would take to accomplish the results, he would confer a great favor upon the bee-keeping public. I am quite sure there is no system, no matter how complicated, that will produce even 10 per cent. more honey than the one we follow.

After knowing the above facts, it would seem as if the question of whether I was fully occupying the territory, where my bees set, or not, is fully answered; inasmuch as we keep all the bees, in each location, that that particular location will support.

Before leaving this subject, I want to repeat, *our bees are not neglected*, as many think they *must be* with our system of management.

Our hives and upper stories are all practically new, being factory made, and well painted, and our implements are all up to date.

As to the charge of allowing my queens to have full sway through the hive at all

times, thus consuming thousands of pounds of honey, in breeding up a horde of consumers after the season is over, I would say that Mr. Strang has not followed me very closely in my writings, or he would not make this charge. It is like this: We put our first upper story on early; this gives the queen unlimited room, as Mr. Strang says; then subsequent upper stories are given *on top*. This first upper story is given the 20th to the 25th of May; this is 60 days before the honey is extracted, and you will see there is time for three generations of brood to be raised, and hatched, during this time. If we had have raised our first upper story up and placed the empty one *under*, we would have coaxed the queen up to *this* story, also, and the consequences would be, we would hold the queen in the upper stories until extracting time, and this system would be a failure, should we extract during the honey season. But the way to do to not raise this horde of consumers, is to put all the upper stories on *top*, then, towards the close of the season, stop giving room. By this method two results are secured.

First, and the most essential, it gets our honey finished up and *capped*, which is necessary to the best results in the production of a good article of extracted honey. Then, this allowing the bees to become crowded, toward the close of the season, also forces the queen below, for want of room above to lay in; and we try to let them get the upper stories so full of honey that the bees put quite a considerable in their brood-nest, so that when we extract, the last of July, there is but very little brood in the upper stories. The fact is, the brood nest is much smaller at the close of the season, than that of an 8-frame hive upon which a queen-excluder has been used, and no precaution taken about their having plenty of honey left for winter stores. This is my answer to the charge that with my system hordes of consumers are raised, at the close of the season, to the detriment of the bee-keeping fraternity.

As to my system of bee-keeping being compared with the cattle Barons of the West, I would say, I have bees the four ways of the compass; one yard each way, about four miles from here. When I came here there was one small yard of bees here; and all the territory adjacent to my yards is still open for bee-keepers; so you

see I am not crowding any one here at Remus. The only place in Michigan that I know of, that is stocked with bees, is Kalkaska Co., and a part of Antrim Co.; so the Barons have not gobbled up all the bee-territory in Michigan.

E. D. TOWNSEND.

Editorial

High Ideals should be cherished, and lived as near to as possible.

Don't Attempt to solve some difficult question when sick or tired. Wait until morning, or until you have recovered. When sick or tired you can't get a true perspective—difficulties and troubles appear all out of proportion; just put these matters all aside until you feel better, and you will be astonished to see how differently everything appears.

The Strain of bees has much to do with the manner in which the comb in the sections are built out and attached to the wood. Dr. A. M. Aulick, of Bradford, Kentucky, writes me of his experience in buying queens: the bees from one lot would not attach the combs to the bottoms of the sections, nor to the lower part of the sides, even when the sections were filled full of foundation.

The Review is being appreciated by the great mass of bee-keepers as it has never before been appreciated. For the last two or three months it has taxed my wife and myself to the utmost to take care of the mail. We begin work at daylight, and the coming of night often finds us with a big pile of letters still unopened. One result of this prosperity is the new dress of type with which this issue of the Review is printed.

Paragon is the name of the type from which the Review is now being printed. A light, clean, clear face with no hair lines.

Advertising in the Review will bring results if you have something that the people want and offer it cheaply enough. I offered some second hand extractors, and I know I could have sold them twenty times over. Orders came by telephone and telegraph, and by mail, and are still coming.

Another Apiary, of 100 colonies, is something that I bought over near Port Huron, since getting out the last issue of the Review. The moving of these bees north next spring is looked forward to almost as though it were something of a lark. This makes about 600 colonies that will be under the management of my brother and myself the coming season.

I Swept up the bees in my cellar at home a few days ago. There are 100 colonies in the cellar, and this is the first time I have swept the floor. There was a coal scuttle full of dead bees. This is a moderate loss from 100 colonies in three month's of confinement. We are often told that old bees do not winter well. There was no honey gathered here after the close of the clover harvest in July, and none of the colonies were fed.

Loose Hanging Frames are fastened for moving, if they need fastening, by driving a small nail through each end of each top bar into the rabbets of the hive. After frames have been in use a few years, such fastening is not necessary, the brace combs being sufficient fastening.

Putnam & Peake is the name of the new firm that has recently opened up for business at River Falls, Wisconsin, in the same factory that Mr. W. H. Putnam has run for a number of years. Mr. Peake was for several years in the employ of the A. I. Root Co., and they speak very highly of his mechanical ability. I certainly wish the new firm abundant success.

The Apiarist has not put in an appearance since November, but I see, according to the American Bee-Keeper, that another journal is to be started in California. And so they come and go. I notice that a new journal sometimes pleads with bee-keepers to "come to its support." If bee-keepers will only support it, then it will blossom out and do great things. No journals are ever supported as a matter of duty. If a journal desires support, let it make itself worthy of support, then it will be supported—not otherwise.

Langstroth's book has been called the classic of bee literature, and I believe that this term is deserved. A few years ago this book was revised by the Dadants, who certainly stand at the head as practical bee-keepers. Thus was the beautiful and practical combined. A new and lately revised edition of this work was laid upon my desk a few weeks ago, and it certainly is deserving of all praise. The book has been brought up to date, new matter and new engravings added, making it the equal of any text book now published. If any of my readers have not yet read Langstroth on the Honey Bee revised by Dadant, let me urge them to send \$1.25 to Dadant & Sons, Hamilton, Illinois, and get a copy.

The Gold Watch offered to the man who secured the most new subscriptions for the Review during December and January, went to Mr. F. L. Aulick, of Falmouth, Ky., who secured four subscribers.

Bee-Song, souvenir, postal cards, some very neat ones, in colors, have been gotten out by Geo. W. York & Co., 334 Dearborn St., Chicago, Ills. One card has upon it "Buckwheat Cakes and Honey," another has "The Bee-Keepers' Lullaby," and the other has "The Humming of the Bees." These, together with the "Honey Bear" card, make four postals that have been gotten out by this firm. Sample cards, three cents each; seven for 20 cts.; or ten for 25 cts.

Painting Hives when the bees are in them is something that is not often done, but a subscriber wishes to know when is the best time to do the work if it is to be done. I should say that it ought to be done when the weather is so cool that the bees do not fly, either early in the spring, or else late in the fall. Don't do the work in freezing weather, as painting done in such weather is not satisfactory. I would fasten the bees in the hive, so that the work of painting would not drive them out; then, just at night, I would carefully open the entrance.

Our Bees are still wintering very nicely—all clustered closely and quiet, with the temperature steady at from 44 to 46 degrees, and this with an outside temperature that has several times gone down to 20 degrees below zero. Under ground, beyond the influence of the outside temperature, is the place to winter bees in this northern country. There are no bottom boards on the hives, and no covers except quilts, and the hives are stacked up with two-inch blocks between them. The cellars are each ventilated by an opening two feet square in the ceiling, opening into the room above—not into the open air.

The Information that soaks into a man's brain through the ends of his fingers is of a far different character from that founded upon theory. A new subscriber who had secured the back numbers for 1906, recently wrote: "That article of yours in one of last year's numbers, describing 'Conveniences in the Production of Extracted Honey,' is one of the best things I ever read. Only the man who had *actually done the work* could ever have written it."

Some Combs, a few of them, perhaps three, or four hives of them, were destroyed in a manner that is a little peculiar. Late in the fall I stored away in the woodshed, perhaps 100 supers full of extracting combs. A few days ago I wished to know how much a hive of ten combs would weigh, and went to take one down, but it would not come loose. I got an axe and pounded it, but still it stuck. Finally, I pried it off, and found the hive one complete mass of bee-moth's webs and cocoons. Several of the hives in the outside tiers, near the top, were more or less in the same condition. The rest of the combs in the other hives were in perfect condition. The trouble was caused by running a washing machine in the wood shed. The hot steam coming up from the open machine had so warmed up the combs standing near that the larvae had hatched out.

Feeders are something that we expect to use another spring. I have about 50 of the Alexander feeders now on hand, and perhaps as many more of the Miller and Heddon style, and I am having 350 more of Alexander style made this winter, and I am having them six inches wide instead of four, so that they will hold more, and can be used to better advantage in fall feeding. As soon as all danger of cold snaps are past (after fruit bloom) I shall begin feeding, and every colony shall have plenty of stores from then until the opening of the clover or raspberry harvest,

When the harvest comes it shall find the hives full of bees, brood and stores, and the first honey gathered will go into the supers. This step alone may make all of the difference between success and failure. One pound of feed given at the proper time may bring in, or cause to be brought in, five pounds of surplus.

Wintering of Bees is of no interest to California bee-keepers. One man, in renewing his subscription, said he had only one fault to find with the Review, it would talk about wintering! "Don't you know," he continued, "we don't winter our bees out here in California? We just let them alone and they winter themselves." I am well aware that articles on the wintering of bees have little interest to a California bee-keeper, but, to us here in the East, successful wintering is half the battle. We don't have those terrible, dry, "off" years to contend with. Our bees always get enough for winter, and almost always some surplus, which is better than one year of enormous yields sandwiched in between several years of starvation.

Superseding Queens.

At the two last conventions that I have attended, the Chicago and the Michigan State, this question of superseding queens has come up for discussion. The point was urged that queens ought not to be kept beyond their second year. The reasons given are that they do not lay so early in the season, nor so late, nor so abundantly at any time.

Personally I have not had much experience with old queens. Almost all of my life I have been more or less in the queen business, and the call for tested queens takes them away before they become more than a year or two old. I think that Mr. E. D. Townsend came near the truth of the matter when he said it was likely there was occasionally a colony that did not come up to the average on account of the age of the queen, but he endeavored to keep enough bees in each

locality to gather all of the nectar, even if some of the colonies did fall behind, and he believed that he could make more money by keeping a large number of colonies and leaving the superseding to the bees, than by keeping a fewer number and using the time in rearing and introducing queens. He said there were many things that might be done with profit in a single apiary that must be dropped when the number of apiaries is increased.

A **Hive Lifter** ought to be the next apicultural invention. In the production of extracted honey, where the hives are large and tiered up, this lifting off and on of twelve combs of honey is no boy's work. Several of these contrivances have been put into use, but just how practical they are I can't say from actual experience. The most of them are of the "stump puller" type, a tripod of light, yet strong timber, with some sort of a contrivance like a set of pulleys or levers for lifting the hive. E. M. Hayes, of Veedum, Wis., suggests the use of a tackle-block wire stretcher, such as is used in stretching wire when putting up wire fence. The cost is only 75 cts., and the power is abundant for lifting hives, and the device can be locked at any point.

A hive lifter ought to be light, easily and quickly set up and attached to the hive, and allow the operator to lift the hives easily and with the least possible expenditure of time. Inventors, go to work on the problem.

When is the Best Time to Move Bees ?

I expect to move 100 colonies from Port Huron (60 miles of here) to Northern Michigan, sometime the coming spring; when will be the best time to move them? Here is one point: Unsealed brood usually suffers more or less when the bees are confined. It is said the loss comes from a lack of water. We have been advised to give each colony a comb that has been filled with water; to lay a wet cloth over the screen; or to sprinkle the

bees with a sprinkler. I am sometimes led to wonder just how practical these things are. Do the larvae die from lack of water in the hive, or from lack of care because of the excitement? If the bees are moved early, there will be less loss of brood, because there will be less brood in the hives to lose. Then, again, will the old bees that have stood the rigors of winter stand the journey as well as young bees that have just hatched out? If we move the bees early, before the young bees have hatched out, and then the old bees succumb to the hardships of moving, the colonies would be left in a weakened condition. If we move early there will be no danger of hot weather to contend with. The points are all in favor of early moving, except that of the old bees dying off while on the road, that is, dying off more than would be the case with young bees. The bees may be confined five or six days but probably not longer. I moved 100 colonies last spring, and they were confined only three days, yet there were quite a lot of dead bees in the bottom of some of the hives. I have moved bees where they were confined only one day, and there was no loss of either bees or brood. Any suggestions?

Where is the Best Location ?

A subscriber wishes me to tell in what part of North America I would locate to engage in the business of producing honey, provided I was "foot free," and could begin all over anew. He then says, "What about California?"

California produces some enormous crops—sometimes. I believe W. L. Cogshall once told me that he had taken the pains to go over a series of years, and compare the yields of New York with those of California, to the discomfiture of the latter. A fair crop each year is much better for the average mortal than a big crop occasionally, and short crops and failures between, even though as much honey in the aggregate were secured in either case. It is doubtful if there is any location in the world that is *the* loca-

tion superior to all others. Were there such a location it would soon be over run with bee-keepers, and its bonanza character would disappear.

I once thought that the irrigated regions of Colorado were about as near a bee-keepers' paradise as it was possible to find, but, of late, there are short crops there some years. Still, Colorado, some parts of it, would satisfy me pretty well for the production of honey. Wisconsin, Michigan, Ontario, New York, in short, the white clover belt of the Northern States, can scarcely be excelled, if the exact spot is chosen with good judgment. Basswood and the wild red raspberry still offer extra inducements in a few localities, but it is only a question of time when they will be swept away. At present I know of no better locality than Northern Michigan.

But there is another question fully as important, and that is the *understanding* of a locality, so as to make the most of its capabilities.



A Change in the Office Where the Review is Printed.

Most of the old subscribers know that for years the work of making the Review was done at the home of its editor, each member of the family doing a share of the work. Finally the daughter who set the type married, and her husband, Mr. A. G. Hartshorn, came to work in the Review office, a small press being purchased that he might find enough work to keep him busy. At the end of the year another young man, Mr. M. M. Hallack, was taken into partnership and a large press added to the equipment. At the end of a year the business outgrew its surroundings and moved into modest quarters down town. Business soon compelled the purchase of another press, and finally it became necessary to seek larger quarters, and a fine, large room, 20 x 75 was secured within less than a block of the very heart of the city. But there was one drawback Mr. Hartshorn's eyes could not stand the strain

that is put upon the eyes of the printer. Oculists were consulted, treatments given, glasses worn, etc., but the final verdict was "Give up the printing business, or lose your eyesight." The printing business has been sold, and Mr. Hartshorn has gone back to his old position with the leading dry goods house of the town.

The purchaser of the printing office is the Hamaker Printing Co. The manager, Mr. John S. Hamaker, has spent nearly his whole life in the printing and publishing business, having worked in large offices in the East, where only perfection is tolerated. The new firm has added still another press, several other labor saving appliances, a lot of new type, cases, cabinets, etc., and the Review, which will be printed at this office, will be able to blossom typographically, in a way it has never done before. If those who have been sending me job work to do will now send it to the Hamaker Printing Co., I am sure the patronage will be appreciated, and that customers will be more than satisfied with the work.



Minnesota Bee-keepers' Association.

The Minnesota Bee-keepers' Association, which was founded in 1888, has made a new departure this year by incorporating, with a membership of 51, under the educational laws of the State of Minnesota.

By the acceptance of its three delegates to the meeting last month of the Minnesota State Agricultural Society, it is recognized as the State Association.

With its new lease of life it has adopted a new Constitution and By-Laws. Its objects now being the promotion of scientific bee culture and of the general interest of the bee-keepers of the State of Minnesota: to assist the state authorities in the enforcement of laws against the adulteration of honey; for the stamping out of foul brood; and to co-operate with the National Bee-keepers' Association in defense of its members in their lawful rights.

Article VII reads :

"Any member shall have the right to vote by proxy on any subject, and at any general meeting, provided that no member present shall vote more than two proxies."

The Association is affiliated with the National Bee-Keepers' Association; so that by payment of \$1.00 annually a bee-keeper may become a member of both Associations.

Besides its annual meeting in December, it will, in the future, hold a spring meeting and another during the Minnesota State Fair week, and the proceedings of each meeting will be published by circular to the members.

In future "Co-operation" will be the watchword of its policy.

Subscriptions should be sent to the Secretary, Mr. Chas. Mondeng, 160 Newton Ave. N. Minneapolis, or to the Treasurer, the Rev. J. Ridley, Monticello, Minn.

Specialty in Bee-Keeping Undesirable in a Poor Locality.

For years I have urged specialty in bee-keeping but not in a poor locality. If a man is going to make a specialty of bee-keeping, one of the special things for him to do is to secure a good location. A good location is the foundation upon which to build the structure of specialty. Without this, better not build. These thoughts come to me from reading a private letter from a good friend of mine in New York State. Among other things he says :—

This has been a very poor year here. From 175 colonies I took only 700 pounds of surplus, and the bees went into winter quarters in a very unsatisfactory condition. I am working under a fearful disadvantage, and if *things* don't change before long, I must. I have been on this place seven years, and, during that time we have had four years that were nearly failures: my crop being less than 800 pounds. I get as good crops as others near here, so I know that it is not my management.

Ten to fifteen years ago there were thousands of lofty basswoods within a mile of this place, but, since then, I have

seen a good acre of ground covered with basswood logs two and three deep. It just made me sick to look at them.

In those days, too, farmers were raising alsike clover seed, and my bees could reach 100 acres within a mile. That is now a thing of the past. There is almost no waste, or unillable, land in this part of the country, and I have to keep my bees in three different locations. This year in four.

Now, I believe that there are a lot of bee-keepers in just the same fix as myself. Extensive and intensive agriculture have cut down the bee pasturage to an unprofitable amount.

If I had a location where I could get even 25 pounds of honey per colony, on the average, each year, I would increase my bees to 500 or 600 colonies, and soon have some money. With the proper hives and fixtures, I believe I could care for that many, even if they were scattered, 100 in an apiary.

In closing my friend says he believes that it would be a profitable thing for him, or any man similarly situated, to secure 100 acres of cheap land, and set it out to catnip, sweet clover, alsike, etc. The only objection that he sees to the plan is that of some other bee-keeper locating nearby, and sharing the harvest with him. I have little faith in such a scheme. In the first place, 100 acres would be only a drop in the bucket, and the interest on the investment, and the labor, would eat up all the honey that would come from a patch of that size. To secure a crop of honey there must be a large area of honey producing plants. Few realize the vast amount of territory covered by the flight of bees from a given point. Going only two and one-half miles from home, bees scour a territory of 12,000 acres. What is a paltry 100 acres? If I were situated like my friend, I would either quit bee-keeping as a specialty, or else pull up stakes and seek fairer fields.

Don't Crowd.

At the late Michigan State Bee-Keepers' Convention, held at Big Rapids, when we were discussing the future of bee-keeping in Northern Michigan, Mr. S.

D. Chapman, living between Mancelona and Bellaire, said that a circle eight miles in diameter might be drawn, with his home as its center, and in the western half would be found more than 1,900 colonies!

Mr. H. K. Beecham, living perhaps 20 miles southwest of Mr. Chapman, wrote me last month, and, among other things, he said:

I have taken the Review ever since it started, and wouldn't like to stop it, but there is one thing in it that I have not liked, and that is its course in urging bee-keepers to come to Northern Michigan, especially to this part of it. Several of my neighbors have from one to twenty colonies, and now another bee-keeper is about to start in within a mile of my place in territory that is already overstocked. Seems to me that the golden rule is entirely forgotten.

The Review has certainly sung the praises of Northern Michigan, but it has never advised bee-keepers to crowd in where they had no moral right to go—that is, upon territory already fully occupied. When I receive letters like the one from which I give an extract in another column (the New York man who has a failure year after year) it seems a pity to keep still about Northern Michigan when I know there are still many locations where the wild raspberry "wastes its sweetness on the desert air." Of course

the locations near to the railroad, and to towns, are taken first, and the men who go there now are compelled to go back further in order to find unoccupied territory; and they *ought* to do it. Self interest alone ought to indicate such a course. No condemnation can be too severe for the man who will crowd in upon occupied territory. When my brother and myself went to that region to establish apiaries, we spent many days and dollars in finding locations entirely unoccupied; but, in order to do this, we were obliged to go back a dozen miles from the railroad, crossing several miles of pine barrens before reaching a strip of hard timber. The strip is perhaps three or four miles wide, and maybe a dozen miles long. Now, this little hard wood tract is where we have located; and to have some other bee-keeper come and crowd in upon us, when there are other just as good unoccupied locations to be found by hunting for them, would seem to us, or to any fair-minded man, a rank injustice. The time may come when these matters will be adjusted legally, but not in our day, and bee-keepers, and bee journals, and everyone ought to do every possible thing to prevent, and to frown down upon, this practice of crowding. I know that any fair-minded bee-keeper will be welcomed to any region, if he will come in the right spirit, and not *crowd*.

EXTRACTED DEPARTMENT.

CELLAR-WINTERING.

Temperature, Ventilation, Moisture, and Disturbance are all to be Considered.

Success in bee-keeping comes from proper attention and the understanding of many details. We can't put our finger on any one thing and say, "Here is the key to success." And this idea is more particularly applicable to wintering than to

any other phase of bee-keeping. It isn't a dry cellar, nor a wet one, nor a cold one nor a warm one, nor the right food, it is not any one of these things alone that will bring the bees through in perfect condition, but it is the proper combination of all these points that makes perfect success. Of the many articles that I have read on the cellar-wintering of bees, I doubt if I have read a better one than that contributed by that old veteran, E. W. Alexander, and published

in *Gleanings* for Jan. 1st. Here is what he says :

During the last few years there has been quite a change in the opinion of many bee-keepers on this particular point of wintering their bees. There is one thing, however, that we all agree on; and that is, a wet cellar, with poor ventilation and a low temperature, is the worst place that bees can possibly be put in to winter; and some of us have found out, from long and costly experience, that a wet cellar, if properly ventilated, and kept at a temperature varying only from 44 to 48 degrees, is the best place that can possibly be made for perfect wintering.

With these dearly learned facts fresh in our minds, a year ago we built a model bee-cellar, 20 x 40 feet in size, which will give ample room for 1000 colonies, and at the same time give us a walk through the center from one end to the other. This is very handy in putting them in, in the fall, or taking them out in the spring; but its principal value is allowing a circulation of fresh air through the center of the cellar. We remove the bottom boards from our hives, and set them directly over each other, with four one-inch blocks between the hives. They rest on racks 8 inches high from the floor, which is covered with about 3 inches of chaff or planer shavings. This makes a nice covering to the floor, and enables us to walk among the hives without making any noise or jarring them in the least. It also prevents smashing any bees on the floor, which makes it much easier to clean up after they are taken out in the spring. The under course of hives rests on the cleats of a bottom-board turned wrong side up. This gives ten inches of space from the under part of the lower hive to the floor, which allows a fine chance for fresh air to circulate over the bottom of the whole cellar. You will also notice that, where we have left the under cover on, we raise it from the hive and put a piece of section under it, forming a little crack for the foul air of the hive to pass off. But we prefer a piece of light canvas over the top without the under cover on. In order to test this thoroughly, last winter we left some hives with both canvas and under cover on.

This cellar was built late last fall, and the walls were laid up with stone and Portland cement. It is 6½ feet between floors, and has about a foot of space under the floor, which is of matched lumber. Under this are two drains which convey water out all winter. The walls are very wet during the whole winter, as

we had no time for them to dry, putting the bees in only one week after they were finished. Then in addition to these wet walls we put a building over it of green lumber, with a roof of galvanized iron. The floor over the cellar was of matched lumber, and double with building paper between. This kept the cellar very warm with so many colonies in it; but with the perfect ventilation we gave it the bees came through the winter in as fine condition as I ever saw bees wintered, and only two hives out of 725 showed a spot of dysentery, although the bees were in the cellar from the 11th to the 14th of November until April 18th to the 20th before the last were taken out.

You may think this quite different from what I have recommended; that is, taking them all out at one time, and that at night; but from April 7 to April 16 I was not expected to live from one hour to another, and consequently the bees got but little attention during that time.

Last winter we had very changeable weather here. The temperature outdoors varied from 20 degrees below zero to 72 above—a variation of 92 degrees while in the cellar it changed only from 44 degrees to 52, or a variation of 8 degrees. This 44-degree temperature inside lasted only about 24 hours, and was caused by a temperature of 20 below zero outside for two days, and the wind blowing a perfect gale. We kept a thermometer in the cellar, and could seldom find the temperature change more than one degree either way for 46.

In speaking of moisture in our cellar I often think of a bit of experience I had many years ago. I put 250 colonies in the driest cellar I ever saw. It was under a dwelling-house where two fires were kept burning nearly all the time. A short time after we put the bees in they became very uneasy, many leaving their hives and flying about the room. I had made a large tight room inside the cellar, of matched lumber, and put a plank floor in it. I kept the temperature about 45 degrees, but still the bees became more and more restless, and, when taken out in the spring, I shoveled up 144 bushels of dead bees. That was the worst wintering I ever had, and it was a sight to see those that lived through the winter go to wet places after water as soon as they had a chance to fly. It seemed as if every one went for water before it returned to its hive. Their honey was so dry and gummy that the bees could hardly eat it until it had been moistened with the water they got outside. The dead bees on the floor were so dry that, if you gave

a handful a squeeze, they would crumble up almost as fine as corn meal.

Since my experience that winter I have changed my mind very much in regard to wintering bees in a dry cellar. The best success we have ever had was in cellars where there was running water, and the temperature kept at from 45 to 48 degrees. Many years ago, when father Quinby used to meet with us at our conventions, this wintering question was frequently brought up; and it was the opinion of us all at that time that, if a hive were made with double walls, and well protected on the top so the bees could keep the inside of their hive warm at all times, then they would winter well in a cellar at a temperature just above the freezing-point. But if we used single-walled hives with their bottom-boards removed, and on top had only a piece of cloth over the bees, then we must keep our cellars at from 45 to 48 degrees temperature, otherwise we might expect to have our bees somewhat affected with dysentery long before spring; and I am still of the opinion that the construction of the hives we use has much to do with the necessary temperature of our bee-cellars. Two very important requirements are perfect quiet and total darkness. These we can have much better in a cellar built in a side hill, expressly for our bees, than we can possibly have under our dwelling houses. I think the amount of honey that is saved where bees keep perfectly quiet will go a long way in three or four years toward paying the expense of building a special cellar.

Shortly after putting our bees away last fall I noticed a small bunch had gathered on top of one of the upper hives directly over the cluster. There was only a piece of canvas between the cluster in the hive and this little bunch on top. The canvas was well coated with propolis on the under side, and was tight all around, and had no holes in it so one bee could feed another, but still they lived without anything to eat until the 10th of January, when I disturbed them so that they scattered themselves over the hive, and some crawled down and in at the bottom. I think there were about 30 bees in this little bunch, and I am sure they had nothing to eat for nearly two months unless their honey sacs were full when they clustered on top. I speak of this incident to show that, if our bees can be kept at a proper temperature, and perfectly quiet, and so dark that the whole winter seems like one long night, it requires but little honey to take them through the time that they are confined in the cellar.

Now in regard to giving them a mid-winter flight, I am not at all in favor of it unless they are suffering with the dysentery caused either by improper food or too low a temperature and bad ventilation. Several times I have set some out for a midwinter flight on a nice day, but usually lost about all that were so treated. The principal trouble is that, after they are returned to the cellar, they never again quiet down and form a compact cluster as they do if not disturbed.

Last winter, about Feb. 1, we thought it best to put mats on about 200 colonies that had been left with the under covers on; and, although we had the floor covered with about three inches of chaff, as we always do to prevent any jar or noise when going into the cellar, and we handled them as carefully as possible with but little light, it disturbed these colonies so that they were quite uneasy for the rest of the winter, and wasted more than twice as much as the bees in the other hives did that were not disturbed. Another thing I wish to speak of in connection with wintering is this:

Many leave their bees out too late in the fall. Last fall we put 300 colonies in our new cellar, Nov. 11, and they had had no good chance to fly for over two weeks. The 12th of November was a warm bright day, and the 425 colonies left in the yard had a good flight all day. These we put into the cellar on the 14th, and when taken out in the spring they were in no way any better than those put in on the 11th, although they had had a fine flight some three weeks later than the others; so don't leave them out to waste away, as they always do with these cold nights of early winter. If we would all realize the importance of having our bees well prepared for winter early in the season, and then be careful and not disturb them any more than can possibly be prevented until they are carried out of their winter quarters in the spring, our winter and spring losses will be much smaller than they usually are.

I shall have to make two articles of this wintering subject, and in my next I will give you some photos of the building we made over our bee-cellar, and will take up this subject of ventilation, showing how easily this cellar can be well ventilated, and at the same time not disturb the bees in the least. When our bee-cellars can be ventilated in the proper way it is one of the most essential things connected with successful wintering. But when done as it frequently is, it is the ruination of thousands of colonies, being one of the principal causes of spring

dwindling in its worst form. So when you build a bee-cellar don't be afraid of a little extra labor or expense, but make both it and your store-room for the thousand and one things necessary in a large apiary as near perfect as possible; then you will find that you can save many steps and receive better results in the end.

Editor Root comments as follows:—

[This is one of the best articles we ever published on cellar wintering, in my opinion; and I say this, even though some of its teachings may run counter to some things I have said on the same subject.

In the first paragraph Mr. Alexander speaks of the fact that a wet cellar with a low temperature, with poor ventilation, is the worst place bees can be kept for wintering, and we all agree with him on that proposition; and yet, knowing that fact, many bee-keepers are unable to control the temperature, and the result is disaster.

On the other hand, our correspondent says a wet cellar, if properly ventilated, and kept at a temperature of from 44 to 48 degrees, is the very best place to winter bees, I agree with him in the matter of ventilation and temperature, and I also agree with him *if* he does not mean to have his cellar *too* wet. The term "wet" as applied to a cellar might mean one slightly damp, and another one with pools of water standing on a muddy floor. I can hardly believe that Mr. Alexander means this. The average cellar will not be absolutely dry, if under ground, where a lot of bees are confined. To my notion, if we specify a *dry* cellar we shall get one wet enough to conform to the requirements of our correspondent. A hundred colonies of bees, for example, in a cellar 15 x 20, will give off a large amount of moisture through their breath. This moisture will condense against the sides of the hives and against the sides of the cellar or any surface cooler than the cluster of bees.

It is not clear just how much ventilation Mr. Alexander allows. I infer, however, he does not change the air in the cellar very much, but leaves the hives so open that there is a circulation of air in the cellar, or from within the hive to without the hive.

With regard to disturbance, what Mr. Alexander says is true, and yet it may be a little hard to harmonize his statements with the fact that our shop-cellar bees have all kinds of racket above them and yet they winter nicely. Right over our cellar where our bees are, there is the

rumbling of machinery and the dropping every now and then of a heavy truck; and the vibration of the building, and I might say of the foundation, is continuous. But here is where the explanation lies: The *continuous* noise does not disturb bees nor human beings like a *sudden* shock after continuous quiet. I have been in cellars, which on entering as quietly as I might, caused no little disturbance on the part of the bees; and on the other hand we could go into *our* cellar and wheel heavy trucks through it all day, and the bees would scarcely notice it, because they have become accustomed to it. I suspect the case is something like this: My dwelling house is located close to our factory, and only about 500 or 600 feet from the B. & O. railroad, and 700 or 800 yards from an east and west road, the Northern Ohio, and on these roads trains are snorting through at almost every hour of the day, and at times in the night; and yet those of us who are accustomed to it very seldom notice or hear it. Another fact: Some thirty years ago I used to sleep in our factory when we were running night and day. My room was directly over several buzzsaws and a planer; but very soon I became accustomed to the noise so that it did not disturb me. Going back to the bees in the cellar, I suspect that the *occasional* romping of children directly over a bee cellar would cause more disturbance than if the children romped on the floor every hour of the day.

I notice that Mr. Alexander does not advise winter flights except toward spring, and even then only when the bees become uneasy or affected with dysentery. I agree with him exactly here, and his recommendation has been right along with our recent practice. Whenever bees become uneasy it has been our experience that a good fly restores them to quiet.

This whole article is based on an extensive and long experience, and it will bear careful reading, both on the part of the veteran and the beginner in the business.

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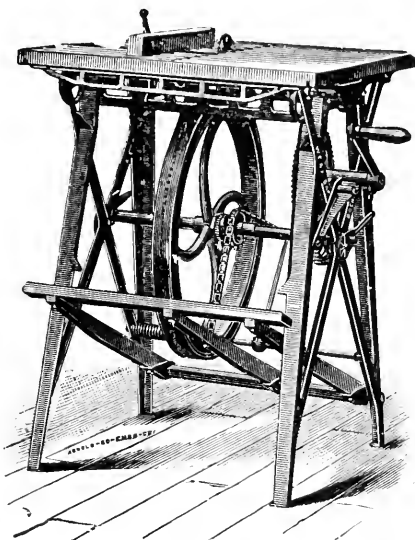
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Flint, Mich.

LONGMONT, Colo., Jan. 28, 1907.

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To-day I was standing at the bench in the shop, making supers, when my little son brought from the office your *ADVANCED BEE CULTURE*. My first thought was "you little beauty." I didn't even stop to sit down, until I had read the Introduction and Conclusion, when I said to the boy : "*There* is enough inspiration for any one to become a successful bee-keeper."

I like the book; like all of your writings, it is full enough of virile force to impress one with its truth and importance, yet, without any selfish egotism.

It shows, too, a studied and traveled knowledge not found in the writings of most bee journal correspondents. I have been reading it this afternoon, and saw many essential points there that you brought out in that little old *Banner Apiary* 25 years ago.

I notice, too, that in gathering knowledge in our chosen pursuit, you have saved the "kernels only," having thrown away the chaff.

We will, perhaps, never see alike, on the question of loose, hanging frames, but that's perhaps, because we have not, or else cannot, see from each other's view point.

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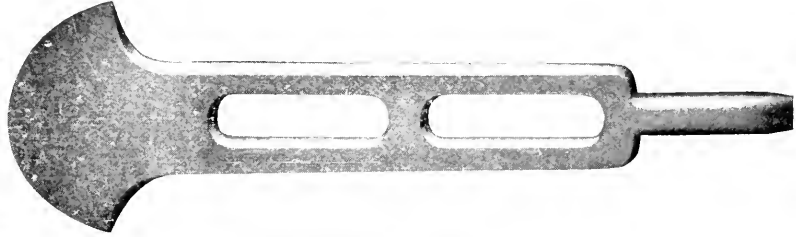
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DESCRIPTION.—The Ideal Hive-Tool is made of high-grade malleable iron, much like wrought iron, $8\frac{1}{2}$ inches long. The middle part is 1 1/4 inches wide and 17/32 thick. The smaller end is $1\frac{1}{8}$ inches long, $\frac{1}{8}$ inch wide, and 7/32 thick, ending like a screw-driver. The larger end is wedge-shaped, having a sharp semi-circular edge, making it almost perfect for prying up covers, supers, etc., as it does not mar the wood.

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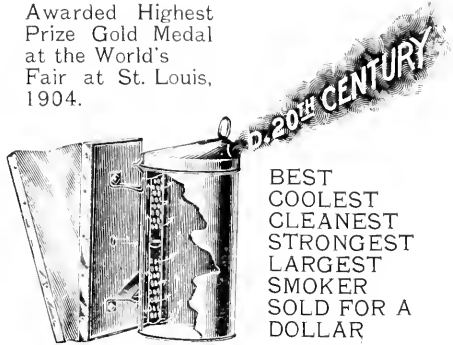
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F. DANZENBAKER, Miami, Dade Co., Fla.

Bees for Sale!

I have 100 colonies of bees in my cellar. They are wintering perfectly—bees, combs, hives and honey, dry and clean. Next month the bees will be on the wing again.

By reference to the editorial columns you will see that my brother and myself will have about 600 colonies of bees under our management the coming season, and to buy cans in which to store all of the honey that we hope they will gather will cost not far from \$200. To secure money for that purpose I have decided to sell a few of the bees here at home—perhaps 25 or 30 colonies.

The bees are all pure Italians; most of the colonies having queens of the Superior Stock. Not a queen will be sent out that would not pass as a breeding queen—such as dealers sell in the spring for from \$3.00 to \$5.00 each. The hives are 8-frame Langstroth, have been used only two years, and are painted with two good coats of white paint. The combs are all built from full sheets of foundation and wired at that. In fact, the stocks are strictly first-class in every respect could not be better and the price is \$6.00 per colony, no more and no less, even if one man should take the whole lot.

I am ready to accept and I book orders accompanied by the cash, and when have received orders for 30 colonies, this advertisement will be discontinued, and no more orders accepted. The bees will be shipped by express, about fruit-bloom time, and safe arrival guaranteed in every respect.

If you wish to stock your apiary with a strain of bees that has no superior, here is a chance to get a tested queen, already introduced, in a full colony, whereby she can be shipped without injury, early in the season, all at moderate price.

W. Z. HUTCHINSON, Flint, Mich.

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Three and five-banded Italians, and silver gray Carniolans. Untested queens, 75 cts each; tested, \$1.00. One-frame nucleus, without queen, 75 cts.; two-frame, \$1.25. Special prices on large orders.

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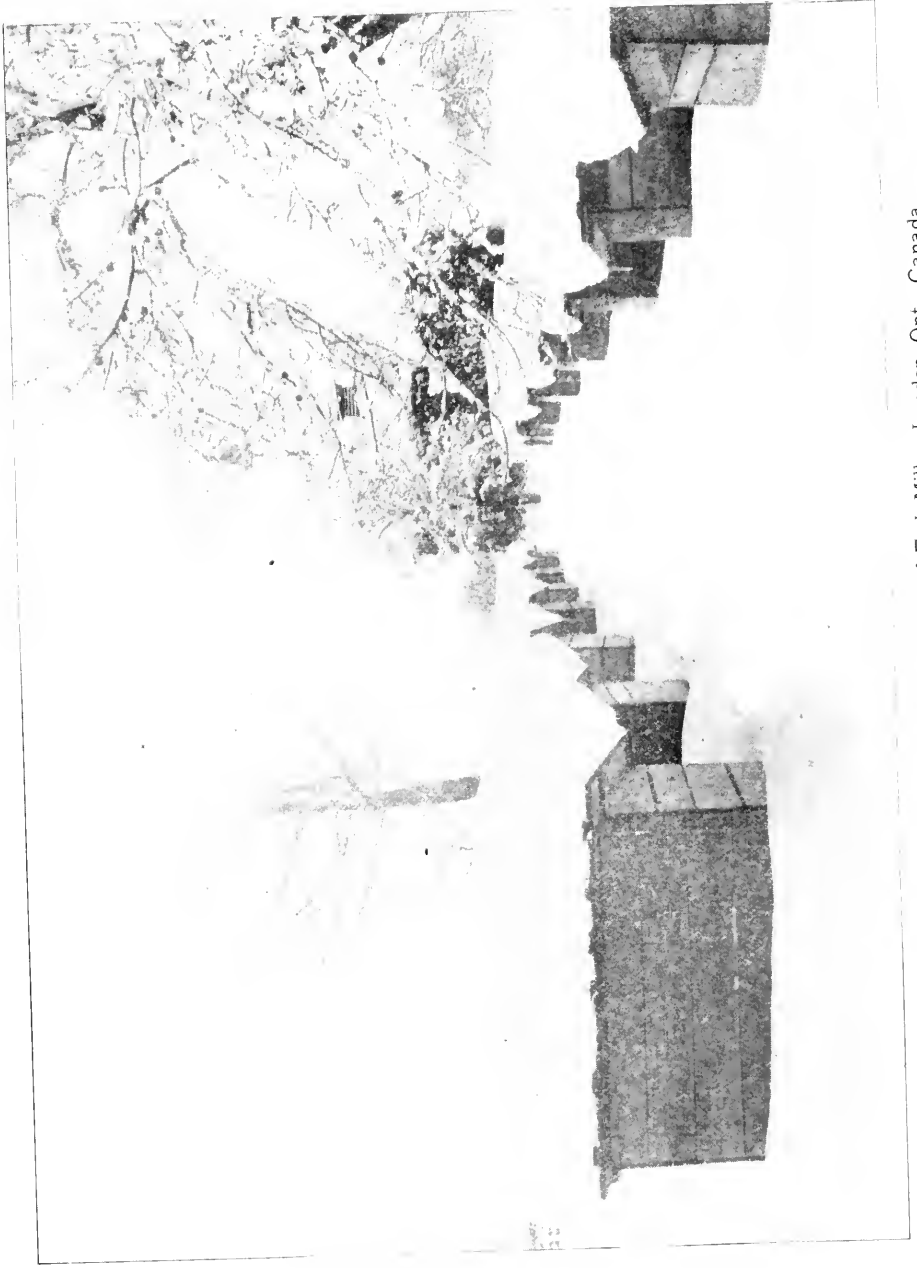
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W. Z. HUTCHINSON, EDITOR AND PUBLISHER.

VOL. XX. FLINT, MICHIGAN, MAR. 15, 1907. NO. 3

Hauling Honey Home from Out- Apiaries to Extract It.

F. J. MILLER.

[Mr. F. J. Miller, of London, Ontario, Canada, wrote me some months ago that he was bringing his honey home to extract it, and using a gasoline engine with which to run his extractor; in fact, he said he had revised and changed his whole system. Having great interest in all such problems, I asked for particulars. His reply contained so much of interest and profit that I begged him to allow me to publish it. He consented, and here it is.—EDITOR.]

LONDON, Canada, Jan. 5, 1907.

FRIEND HUTCHINSON:—Replying to your request regarding recent changes in my system of work, I may say that for several years I was looking for a small engine that could be handled by one man and readily moved from yard to yard. Failing to find this, I concluded to install a heavier engine at home and haul the combs in to extract.

After looking the difficulties all over, I commenced to solve them, one by one, and found the plan to have many advantages that were pleasing.

GASOLINE ENGINE FOR RUNNING AN EXTRACTOR.

In my extracting house, 20 x 20, with good brick cellar, and cement floor under it, I placed a two-horse-power, International Harvester Company, gasoline engine. Two belts (one crossed) connected it with a counter-shaft over the extractor. On the counter-shaft were two loose pulleys with a driving pulley between them. I bolted the extractor to the floor; removed the crank-shaft; putting a longer one in its place that extended out about 14 inches beyond the can to allow room for a pulley, and give an end-bearing resting in an upright. The pulley on the extractor-shaft is connected, by a short belt two inches in width, to the counter shaft above.

The extractor is a four-basket, reversible, with upright shaft running through the bottom of the can in a packed

nut, to a bearing below, thus reducing the vibration of the baskets.

AN INGENUOUS METHOD OF REVERSING THE MOTION IN AN EXTRACTOR.

The engine runs continuously. To start the extractor, draw the proper drive belt to the center pulley. To reverse, push this belt back upon the loose pulley, put foot upon the brake-treadle connected with the wood-pulley on the counter shaft, which breaks the speed and at the same time the other belt is drawn to the center or tight pulley, and the extractor instantly starts in the opposite direction. The honey runs through a tube in the floor to a strainer, then to tank or barrels. No handling.

HOW TO QUICKLY ATTACH A HORSE TO A WAGON.

I had a box made for my spring wagon to hold 70 supers, and by putting oil cloth over the top, all were bee-tight. Then, to move my load quickly, I devised a quick hitchup attachment. The shafts are lifted out of their sockets, and taken a safe distance from the yard, where the horse is hitched to them, and everything is so arranged that the horse carries the shaft balanced, without their striking his heels. The horse is now left tied, while the load is quickly put on from the house where the supers have just been wheeled in. When the load is on, the horse is driven to the wagon, and, as he steps to place, one hand guides the shafts into place, and the load moves forward before a bee can get a crack at the horse.

Arriving at home, unloading upon a platform on a truck makes light work. Then two or three hours work at home makes an extra pleasure of it; and the honey is in the barrels, and supers empty and ready to be loaded for the next trip in the morning.

With my system, visiting each yard every fourth or fifth day during the very busiest of the season, I am able to do this hauling without extra trips; as the

out-yards in my case are worked from home returning there each night.

ONE MAN CARING FOR 500 COLONIES.

Running my bees without help, as I have done for some years, has caused a great amount of short-cut systematizing, and I now feel that I can, with pleasure, handle five hundred colonies, doing all of the work *myself!*

There are yet two conveniences I am longing for; an uncapping machine, and either an auto or a *flying machine*. While I have a horse that is a splendid good driver, as well as a heavier one, yet there are three months of the year when I should like to travel a little faster.

To my sense, specialty in bee-keeping requires so much of the individual perfecting and fitting of details to suit the conditions and tastes of each one, that what is just about right for one man, is not to be considered "in it at all" by the other fellow.

CONSIDERING THE PLEASURABLE SIDE OF LIFE.

The *pleasurable* side of work is always deeply considered by me; and in making the above changes the fact of doing more of the work at home, where my "better half" could spend a few moments occasionally, and lighten the busy hours, was not overlooked.

Wishing you and yours a prosperous and happy New Year, I remain,

Yours very truly,

F. J. MILLER.

[I have always believed that, with good roads, and the out-yards not too far distant, it was practical to bring home the honey to extract it. In our Northern Michigan bee business, the yards are too far from home, and the roads too sandy and hilly to admit of bringing the honey home to extract it. In the majority of cases, I presume it is best to have a complete outfit at each yard, but there is no question but what Mr. Miller is making a success of bringing home the honey to extract it.

Perhaps his plan of reversing the motion of an extractor by means of two belts,

one of them crossed, with a tight pulley between two loose ones, is old, but it is new to me, and strikes me as very simple, yet most ingenious. When the belts are running on the loose pulleys, one belt on one loose pulley, and the other on the other, there is no transmission of power. Run one belt upon the center pulley, and the machine at once starts into motion.

Run this belt back upon the loose pulley, and run the other belt upon the tight pulley, and the machine immediately runs in the *opposite* direction.

Mr. Miller also brings up one important point that I have often thought of, but never seen it mentioned in print, viz., the consideration of the *pleasurable* side of work. It is worth considering. [EDITOR.]



Helpful Hints in Extensive Bee-Keeping.

E. D. TOWNSEND.

LAST spring our bees here at Remus that were wintered in clamps (buried) were taken out of their winter quarters the last week of March. We begin digging them out as soon as the frost is out of the ground. We have left them in their winter quarters as late as April 15th, but have had rather better results when they were taken out as soon as the frost is out of the ground. The pits have no ventilation, and when the bees are removed, the hives and combs are quite damp and mouldy. As the pits have no roof over them, the spring rains seem to make matters worse. Then, we think the bees need all of April and May to breed up, and get into condition for the early June honey flow.

HOW TO REMOVE BEES FROM A CLAMP WITH
NO ANNOYANCE FROM FLYING BEES.

As soon as the time arrives to set them on their summer stands, and we get such a spell of weather that we think the *next* day will be suitable for the bees to fly, we go to a yard with shovels and fork, and throw the dirt off from all the pits in this yard, except an inch or two, or enough so that the bees can't get out and fly from the pit. Wait until just at night, when it is so late the bees can't

fly, then go and carefully remove the balance of the sand and straw. Leave the bees alone until morning, when they will be all nicely clustered in their hives, and can be set on their summer stands without hardly a single bee flying. Before adopting this plan, we used to dig them out, and then set them directly upon their stands. This is the first time the bees have seen daylight, or had a whiff of fresh air, in months, and by the time we could get them set down on their permanent stands they would be ready to fly; and the only time we ever had any mixing up, or drifting from one side of the yard, uniting with those on the other side, leaving the colonies on one side of the yard almost depleted of bees, was when they were handled this last mentioned way.

WHAT TO DO IF THE BEES MIX UP.

If one should get into a mix up like this, the only alternative is to do a little hustling in changing places with the colonies that are getting the most bees, and those that are getting the least. In this way something may be done to equalize the flying force of the yard. When you are through, you will probably conclude that you have done a pretty poor job; and

when night comes, and you have a breathing spell, you will form a resolution, to *never* get caught in such a mess again if it is possible to avoid it.

If the entrance is contracted, so that only a few bees can fly at a time, it helps to keep them flying at a more moderate rate. We sometimes throw a shovel full of sand into the entrance, then, with a small stick, make an opening at one corner, so that only a few bees can fly at a time. This certainly helps to keep them from mixing. I am sure the whole secret lies in so managing that only a few bees fly at a time. In other words, so manage that the strong colonies, are not allowed to show their extra strength in flying force, and with the entrances contracted, the strong colonies cannot throw out a force much, if any, stronger than the weak, or moderately strong colonies. It seems that with this first, mad rush for a flight, the bees forget all about marking their location. Their whole bent seems to be to rush out and get that much needed flight, regardless of consequences. They remember nothing of their previous season's location; or, perhaps, they are set upon a new stand, and, later, when the desire to fly is satisfied, they begin to think of home, and it is then that the mixing is done. They seem to get started to entering a few hives, then a great share of the bees in the air are attracted to these few hives; with the result that these few colonies get the lion's share of the flying force.

This condition seems to be aggravated if a stiff breeze is blowing, so as to blow a cloud of bees over to one side of the yard; for not many of these flying bees have any idea of which hive is their home, so they are ready to enter the first hive they come to. In this case this leeward side of the yard gets this larger share of the flying bees.

THE VALUE OF OUTSIDE PROTECTION.

Quite a considerable of this *drifting* of bees when set from their winter quarters, would be prevented were the apiary located in a *protected* spot. The ideal

place would be to go into a cut-over location, where the timber is a thick undergrowth, and clear off an acre or so. If there is a thick growth of timber, 30 or 40 feet high, this will cause the wind to blow *over* the apiary, not *through* it. Outside of the benefit derived from preventing this drifting, there are many other advantages. Likely the most benefit derived from outside protection is during the bad weather of April and May, or during the heavy breeding season, when the field workers that gather our main white honey crop in June are being reared. So much better do the bees build up in these protected locations, that instances are on record where bees were wintered in the same repository, one-half of them being taken to a sheltered location, and the other half to an unprotected location, with pasturage the same, and the protected yard built up strong; and filled an upper story with honey, before the bees in the unprotected yard were strong enough to need an upper story.

I am sure that this question of outside protection has never been given half enough prominence. Outside of the benefit to the bees, there is a comfort to the apiarist sufficient to make it an object to select a sheltered place.

Is it any wonder that the Pine Lake yard and the Isabella yard get special care? They are beautifully located in the virgin forests, where the cotton tail lives, where the chipmuck and red squirrel are at home, and the bobolink rises and welcomes us as we approach.

After knowing these things, is it any wonder that we all want to attend these especial yards? This is a special advantage in out-yards. We are not compelled to keep our bees except in these ideal locations. This is no idle dream; for we have it well-illustrated in our Heminger yard, where there is no shade whatever. If I ask the boys who will go with me to the Heminger yard today, the answer is usually: "I guess I will go to the Isabella, or Pine Lake, or the Windling yard."

REMUS, Mich., Jan. 5, 1907.

Points to be Observed in Locating Out-Apiaries.

M. V. FACEY.

IN writing upon this subject I shall not write from any ideal of what conditions *ought to be*, but as I have found they actually existed. Practically, I might say that my whole bee-keeping life has been spent in out-apiaries, as you may realize when I say that on two farms I have had bees continuously for about 15 years, on two others about 12 years, and on four others about 10 years each.

MANAGING OUT-APIARIES CALLS FOR EXPERIENCE, SKILL, GOOD JUDGMENT AND SELF-RELIANCE.

The subject of out-apiaries is at present a popular one amongst bee-keepers. Many have already commenced establishing them, and many more are thinking seriously of so doing. The tendency is a healthy one, but it is like stepping *up* in any other line of business. It will try the metal, the good sense and the judgment of the bee-keeper. It will show the stuff he is made of. It is not a fit occupation for a narrow minded or selfish bee-keeper. It means the thorough systemization of our work, but a systemization wherein we are broader and more comprehensive than any set of rules: where intuition and trained perception and prompt judgment will tell us what to do without following any one else, or even ourselves, only as our grasp of the case may point the way.

We also become semi-public in character. It is absolutely necessary that we conduct ourselves so as to merit the good will of the people in general throughout the territory wherein our bees are located. It is our duty to them to be accommodative and obliging in as far as we may, and

I have found that people so treated amply repay the bee-keeper with interest, for his good will. I have just lost \$10.00 by depredations in yards in all of my bee-keeping experience; and if I choose to leave any thing in the extracting house, it is always safe, even though it be left for months.

BEE-KEEPING NOT PROFITABLE IN AN OVER STOCKED LOCATION.

And, above all, we must respect the rights of other bee-keepers who may occupy the field prior to us. The first reason I shall give for this is a selfish one. It is absolutely necessary, if we are going to succeed with a system of out-apiaries, or even with one or two, that we give our bees an unoccupied range. The only way to succeed with bees is to make them a financial success; and where two large lots of bees cover the same ground, it very frequently means disaster to both; so much so is this the case that in average localities, and even in localities where the average yield will run, from year to year, upwards of 100 pounds of honey to a colony, the number of bees in a yard must be limited. I have tested this repeatedly, and here, where my lot of bees average over 100 pounds per colony yearly, I find it is not the part of wisdom to greatly exceed 75 colonies to a yard, spring count.

In buckwheat localities, like that of E. W. Alexander's, with its heavy honey flow and its immense acreage, possibly we can keep bees in almost unlimited quantities, but this condition is found in only a very few sections in the United States. Therefore, for the sake of your own success don't *crowd in on occupied ground*.

THE MAN WHO WILL CROWD IN UPON OCCUPIED
TERRITORY IS AN APIARIAN OUTCAST.

The second reason is the injustice and the dishonor of the thing. In a ranch country no man would think of coolly coming into a locality and planting himself on another man's ranch. It might not be healthy for him; and, besides, other ranchmen would brand him as an interloper. The territory occupied by a bee-keeper is, properly speaking, a bee-ranch, covering many farms, which are occupied by many different families, but working for the benefit of all. Another bee-keeper planting himself on this occupied bee-ranch is also an interloper, unworthy the respect of his neighbors, and should also be treated as an outcast by bee-keepers, and unworthy of their respect.

THE OWNER OF AN OUT-APIERY MUST BE ON
FRIENDLY TERMS WITH NEIGHBORS.

This, of course, does not apply to farmers, for many a farmer likes to keep a swarm or two or a few swarms. In my territory I even encourage this. It interests them in the occupation; and, in all my experience it has never interfered with my results or success in any respect; and the result has been that they welcome my entrance among them with a yard of bees. I have standing offers today from a number of farmers, offering to move the bees to their place, free of all cost, if I will only put bees there; and all the pay any of them ask of me for the use of their place for my yard and the use of what I need of their vegetable cellar (my choice) for wintering in, is from 70 to 80 pounds of extracted honey. I am now offered an acre, such as I may wish to select, and the use of any cellar on the place (there are a number), free of all charges, if I will only move bees to a certain place, and in a good locality, too, and all this is simply because I have tried to treat them all rightly. I repeat, it pays; and I believe, in the long run, it is the only thing that will lead to success, that we treat everybody rightly where we have

our bees, and that we select strictly unoccupied territory. The last item is, I think, *vitally essential*.

Locality is one of the first considerations. We should first of all familiarize ourselves with the flora of the surrounding country tributary to the yard. While there may be breaks in the honey flow, yet it should be as continuous as possible from early spring until our main flow, or flows, are upon us. Broken land almost invariably furnishes the greatest variety of flora and most certain flow. If a stream runs by with broken valleys and flats and ravines, all the better. The early spring and late fall sources of supply should be as near the yard as possible. As the season warms up and the weather settles, the bees can safely go farther for their supplies; but, even then, I prefer to have them as convenient as possible. In the main flow, especially if it be basswood or buckwheat, they will go farther. My bees gather largely from basswood, and they bring a great deal of their stores from one mile to two and one-half miles. I prefer not to require them to go over 2½ miles in any case, as it leaves the result quite uncertain.

GREAT IMPORTANCE OF A SHELTERED
LOCATION.

The locating of the yard is also of the utmost importance. It should be in a sheltered locality, with protecting trees on the north and west sides, but so situated as to catch the morning sun as early as possible, thus giving the bees an hour's start in the early morning when most kinds of flowers are yielding at their best. I do not find there is much difference as to which direction the hives face, except that I prefer to give the bees as direct a flight as possible to and from their hives; but the honey yield is practically the same whichever way they set. The trees on the north and west sides shelter the bees from cold winds in spring, and destructive winds and storms in summer. The trees on the west of the yard begin to throw their shade over the bees, be-

tween two and three o'clock in the afternoon. This will afford the bees a little relief in the hottest part of the day, and towards evening the bees will be altogether in the shade. If the sun strikes upon the hives at sunset the bees are tempted to leave the hives when it is too chilly for work in the fields, and many, especially in the spring season, become chilled and lost; but if the hives are in the shade at sunset, and for some time before, the air surrounding them becomes sufficiently cooled so that the bees are not tempted out at a time when it is too cool for work in the fields. I prefer to have my bees commence work as early in the day as possible, when the air is steadily warming up, and retire early when the air is rapidly cooling.

I find exposed places so detrimental to bees that I will not, under any circumstances, place any yard in any place exposed to the sweep of the winds. I have *paid* for this knowledge. I will mention a case or two: On one place where I kept bees about 10 years ago, I had the bees for a number of years where the yard was exposed to the sweep of the wind. The yield of this yard fell largely below the average, and it frequently was run at a loss. Finally I determined to move the yard, but the man upon whose place the bees were located pressed me to try the place a while longer; so I moved the bees just a short distance, to a sheltered locality, and so situated that the bees, during all the early spring months, also gathered most of their stores without passing over the more exposed places, and since then the complexion of everything has changed. The yield has more than doubled, and this yard is now one of my most profitable yards. The bees were six years in the exposed place, and have now been four years in the sheltered location. I have seen almost one-fourth of the bees in an exposed yard destroyed by two days of heavy wind. It was not so cold but what the bees left the hives, and going to the field with the wind, were lost struggling against it on their return.

Out-apiaries may be placed at distant points, where it may be inconvenient to visit them oftener than four or five times in a season, yet they may be managed with quite satisfactory results. I have netted \$11.00 per colony in one season from a yard run in this way; but, as a rule, the nearer yards, those which I can take in every eight or nine days, have been the most satisfactory. At present I run no home yard, and my nearest out-yard is three miles distant, and the furthest of my eight yards is eight miles distant; and all so placed that I could visit every yard, and not drive over 36 miles going and coming.

PRESTON, Minn., Feb. 22, 1907.

[Elsewhere I have touched upon one or two of the excellent points in the foregoing article, but I must say a word here in regard to the importance of being upon friendly, sociable terms with the people living near an out-apiary. Particularly should this be true in regard to the family upon whose land the apiary is located. Better pay more than it is really worth for the privilege of locating an apiary, than have the owner of the land feel that he is illy paid. One of our apiaries is located near the home of a farmer who has a small clearing of several acres. Before moving the bees, I wrote to him and asked him to clear off the logs and chunks, and cut the few bushes upon a space three or four rods square, back of the old saw mill, where I intended to set the bees. I enclosed in the letter, a \$2.00 bill. When I came with the first load of bees I found the space all nicely cleared off. In talking with one of the boys, one about a dozen years old, I found that his father and mother had cleared off this space with no help, not even the use of a team. The logs had been rolled over and over until off the plat. The chunks had all been picked up, and the brush and berry briars cut. The boy told me that they had worked steadily two whole days. Afterwards, in talking with this man, and telling what a good job he had done, I

asked him if it was not worth really more than I had sent him. He admitted that it would probably have cost more than that if they had hired it done, but, as I had paid a good rent (\$15.00 for the ground and the use of a building for a honey house) he thought it was all right. Finally, I induced him to take another dollar, which he said was ample pay. I have hired the boy several times to do odd jobs, and paid him well. The family gets an occasional taste of honey. If there is ever a broken comb, it usually finds its way into the house. What is the result? Every member of the family is loyal to my cause. There isn't a favor that I can ask for that isn't granted as though the giving were a pleasure. An-

other point right in this line: A modern apiary was a novelty in that region. A honey extractor had never been heard of. The whole neighborhood flocked in to "see." Sometimes when we were busy it was a little trying to stop and answer questions and be polite, but I knew that the novelty would soon wear off, that the curiosity would eventually be satisfied, and that we could not afford to antagonize the people of that vicinity. Our lives are more intimately interwoven with those surrounding us than we imagine; and Mr. Facey has brought out an important point when he tells us that in establishing an out-apiary it is worth while to secure the respect and good will, yes, the friendship, of immediate neighbors.--EDITOR.]



Advantages and Disadvantages of Quilts.

E. S. MILLER.

SHALL we use cloths or quilts over frames and sections? Some of our leading bee men say *no*. However, after trying both ways for several years, I have come to the conclusion that, for me, the advantages of a cloth cover very much outweigh the disadvantages.

In the first place, the cloth tends to prevent the radiation of heat during cold nights, and it helps to keep out the heat of the sun's rays in the heated portion of the day, in case the hive is not shaded.

Secondly, a cloth prevents the bees from daubing the cover with propolis and sticking it fast. If the cover is glued on, it comes off with a snap, stirring up the bees and necessitating the use of the smoker. The whole top of the hive being uncovered at once, the bees have every opportunity to get out; and, if blacks or hybrids, it will usually require consider-

able vigilance to keep them down. If a cloth is used there is no jar; it can be rolled back, uncovering one or more frames, as desired, and requiring but little smoke. Thirdly, in this locality a large amount of propolis is gathered, and a cloth prevents the daubing of the sections, except along the edges where it can be easily removed with a knife. Without the cloth, the whole top of the sections are more or less discolored.

The disadvantages are that it requires time to handle the extra cloths, that it adds about five cents to the cost of the hive, that it prevents the bees from passing over the tops of the frames, and that covers may blow off if not glued on. The last named objection will not hold if the right kind of covers are used. In regard to the first, my experience is that it requires *more* time to keep the bees smoked

down, not to speak of stings, robbers, and other annoyances.

In hives with only a bee-space above the frames, only one thickness of cloth can be used. For this purpose I have found nothing better than a kind of canvas known as 12-oz duck, which can be bought at any dry goods store. Enameled cloth tears too easily, and the bees gnaw holes through it.

VALPARAISO, Ind., Feb. 16, 1907.

I consider the foregoing a very fair discussion of the quilt-question; now that it is up, I am going to quote another very fair editorial on the subject that appeared in the *American Bee-Keeper* for February. It is as follows:—

The bee-space over frames is no barrier to the use of a quilt if one desires to use it. Individual tastes and methods of working must determine preferences in regard to frame covering. For summer use, with hives nicely shaded, a well-fitting flat lid is all that is heeded and is, perhaps, the acme of perfection, but they do not admit of the moderate winter ventilation and absorbent qualities desired in some instances.

In making early spring examinations, as to the strength of colonies just out of winter quarters, the quilt is a decided advantage. Instead of having to pry loose a procolized lid or honey-board, the apiarist can jerk back the quilt and replace it in one second, ascertaining the approximate strength of the colony closely clustered upon the brood on a cool morning. If it becomes necessary to perform some slight operation at a time when robbers are troublesome, such as to remove or insert a frame of honey it is not necessary to expose the whole top of the frames, when quilts are in use. It may be turned back just far enough to expose the frames wanted, and may be flopped back in an instant, with one hand, and the hive thus closed.

The ideal hive covering, for a northern climate, is a flat lid with a rim, admitting of the use of a sawdust cushion inside, with a quilt over the frames. In the South, a flat lid with honey-board and air-space between, fills the bill exactly.

[I have used quilts to a slight extent; that is, I have found them in use in the apiaries that I have examined for foul brood. I have also found them on hives

that I have bought, but have always them thrown away.

It is said that a cover will come off with a snap, which is true in cool weather. It is also said that this snap jars and irritates the bees, and the removal of the whole cover, opening up the whole top of the hive, gives the bees greater opportunity to sally forth and make merry with their keeper. I admit all of this, but here is the way that I open a hive: Smoke the bees at the entrance the first thing I do. After bees are subdued, thumping and snapping things about the hive only adds to their submission. After the smoke has been driven in at the entrance I pry the cover loose with a screw driver, but I don't pull it right off and allow a great host of bees to make an attack. I drive smoke into the crack opened by the screw driver sufficiently for this purpose, but not to let out any bees. With these preliminaries it is perfectly safe to remove the cover with little danger of stings.

If a man wishes to take a little peep into one corner of the brood nest, to see how strong the colony is, and that is *all* that he wishes to do, a quilt is an advantage.

Here is the way that I have found quilts working where I have been. When first put on, if you can get all of the bees down off the top bars, the quilt lies down nice and smooth, but the bees are sure to put a line of propolis along the edges of each top bar. The next time that the quilt is put back, it is not put in exactly the same place. Those little ridges of propolis raise it up slightly from the top bars, and bigger ridges of propolis are put along the edges of the top bars. This thing continues until there are little bunches and lumps of propolis here and there, and the quilt does not lie down smooth. The bees plug the openings with propolis, and even burr combs, in some instances. The putting on and taking off of such quilts is no pleasure for either the bees or their keeper.

In my experience, the top bars of sections are daubed worse with propolis

when quilts are used over them; and for the reasons that I have just given. With a plain, flat cover, and a bee-space above the sections, or the tops of brood frames, no propolis is used except around the edges of the hives where the cover comes in contact, and when the cover is loosened, which is an easy task during the warm weather when most of our work is done with the bees, the cover can be lifted off neat and clean, and free from all of these knobs of propolis and brace combs.

Attention is called to the fact that with a quilt only a part of the hive needs to be uncovered if robbers are troublesome, and there is little work to do, like putting in a

comb of honey, but it should not be forgotten that there is nothing in the world to prevent the shoving of the board cover over only a few inches, instead of removing it entirely, when there is some operation of this kind to be performed.

I like a quilt, something like a piece of carpet, to lay over the frames when the hives are stacked up in the cellar, but that is the only use I have for a quilt. I might add that I don't yet *know* positively that the quilt is any great advantage for this purpose. It is a "notion" of mine that it is, and I am experimenting along that line this winter. ED. REVIEW.]



Extracting Honey Profitably at Distant Yards.

E. F. ATWATER.

JUNE 19th found us again at the distant yard, with a load of cans, which were carefully piled along the fence, and the work of inspection begun as before. We found that brood-rearing had proceeded at a great pace, many colonies were preparing to swarm, even though they had been treated radically on the previous trip. More room was needed by some colonies, and swarms had been issuing and returning, while some had reared themselves a queen and gone away with her.

The men on the ranch were sure that 50 swarms had escaped, but this was not the case. No doubt 50 swarms had issued, counting the several times that some had tried it, but as the queens' wings were all clipped, the actual loss was small.

Right here let me say that our greatest mistake was in not having made another trip for inspection and swarm control,

seven to nine days after the trip of June 5th, or treating more colonies, at that trip, on our new system, which seems to hold the bees for a longer time than any method which simply discourages swarming, like the plan of raising brood above an excluder.

The season was extraordinary for swarming, the worst in that way that I had experienced, but also the best for honey.

The strong colonies were given such treatment as described for the trip of June 5th. The colonies tiered up on the Alexander plan for queen-mating were now divided, each part with a queen and brood, and each was given emerging brood from other colonies, to make them strong. A few more tiered hives for mating were then prepared.

We try to have all sheets of foundation drawn out in the brood-nest, using the brood-combs in the supers, as such old

combs are far the best for rapid uncapping and handling. Mowing the grass completed the work done at this visit.

On July 11th we loaded our extracting outfit on the wagon, and on arriving at the yard, we set up the tent, described in a previous number of the Review, hired a man and a boy, and began work. I brought in the combs on a Daisy spring wheel-barrow, sometimes also doing a little uncapping. Herman C. uncapped and filled cans, and Scott R. turned the crank.

EXTRACTING OUTSIDE COMBS IN THE BROOD-NEST.

In many colonies I found the outside combs in the brood-nest full of honey; these were removed and extracted, the brood spread, and full sheets of foundation put in their places. This would be a ruinous procedure if no second crop were expected, or no continuation of the flow, but we usually get a second crop; and this plan gives more bees for that crop, if it continues as long as usual, enough to pay very well indeed for the extra labor required.

In this connection I have often wondered how some specialists manage to put in their time, handling brood-combs so little as they do. Here, we *must* handle combs to a considerable extent, running eight or more yards, with anything like complete swarm-control. If we could control swarming without manipulation, we would need far more bees to keep us busy. Two of us did nearly all the field work with over 700 colonies this summer, harvesting a total crop of over 36,000 pounds.

DOUBLE BRUSHING OF COMBS.

One valuable thing that I learned, through the American Bee-Keeper, from O. O. Poppleton while I brush one side of a comb a boy brushes the other side so the bees have no chance to run from one side to the other, and the work is done much quicker than by the one-brush plan.

HAULING 6,000 POUNDS OF HONEY AT ONE LOAD.

At this extracting we took over 6,000 pounds. A freighter was hired to haul the honey to Meridian. His big freight wagon had strips of 2 x 4, about 18 inches long, spiked to its sides, inside, on end, resting on the bottom of the wagon-box. There were three pairs of these uprights, one pair at each end, and one pair in the middle. Perhaps five inches of loose hay was then put in the wagon-box, then a deck of inch boards cleated together, resting on the hay. On this deck, with the springy hay under it, the five-gallon cans of honey were placed, four cans exactly filling the box, in width. After the box was filled with the one tier of cans, pieces of 2 x 4 were put across the box, resting on the ends of the upright pieces of 2 x 4, and then spiked to them. Next we took four, 2 x 8's, as long as the wagon-box, and tacked them in place on the cross-pieces of 2 x 4, leaving about 1½ inches between them. These 2 x 8's formed an upper deck, supported only at the ends and in the middle. On this upper deck the remainder of the cans of honey were placed in such a way as to have most of the weight come *between* the supporting cross-pieces, short rows of cans on each plank, between supports, giving plenty of spring to insure safe carrying over 36 miles of fair to bad roads. The entire 6,000 pounds were hauled at the one four-horse load, and arrived at home without mishap.

On July 30th we again found ourselves at the distant yard, as a friend had written to us that the flow had continued, and our bees might need room. Swarming was now over, and the supers again fairly well filled. A few more colonies were made, from the Alexander mating mating piles, and the extra queens used as needed.

We set up the tent, and with the same help we extracted again, getting a little over 5,200 pounds. This 5,200 pounds was freighted to Meridian the same as the 6,000 pounds first extracted.

As the flow ended about August 11th, with a few days of cool weather, we knew that the bees had not accomplished much after the extracting of July 30th, so no more work was done with them until the week ending Nov. 6th.

During that week we again visited this yard, taking with us a Townsend, bolted, take-down, 12 x 16 foot honey-house, in the flat, with a small stove, a few cans, etc. We set up the house, put up the stove, pried off all supers that were free from bees, wheeled them into the shop, and sorted out the combs containing honey. These last were stacked up by themselves in supers, near the stove, piling them as high as we could reach.

WARMING HONEY TO EXTRACT IT.

During the middle of the day we brushed out the bees that were found in mostly small clusters in perhaps $\frac{1}{2}$ of the supers, those remaining on the hives, and these supers were taken to the shop and treated as were the others. At night we built a fire in the stove, one of us staying awake half of the night to tend the fire, when the other took his place.

In the morning we began extracting, and it was a revelation, I can assure you. In fact, so hot was the upper part of the room that some combs had to be very carefully handled, and perhaps three or four had broken loose from the wires.

Owing to the sudden ending of the flow, about August 11th, at this last trip, we only took 800 pounds, besides a lot of partially filled combs for spring breeding, but even this small quantity paid for the shop.

PROTECTING COLONIES WITH BUILDING PAPER.

We spent the remainder of the time in preparing bees for the winter. Perhaps $\frac{1}{4}$ of the colonies (standing in pairs) were simply moved until the two hives were in actual contact, and tarred paper put on top, back, and sides. A few were papered singly, while most of them were piled in rows, about 12 hives long, two hives high,

making 24 in a pile, and ends, top and rear of the pile covered with tarred paper.

After seeing that every entrance was mouse-tight, I took the train for home at noon, Nov. 6th, so as to get home in time to vote, leaving my assistant to *drive* home - *his* political convictions being in a somewhat unsettled condition.

In closing let me say that I find that two good manipulators can inspect 130 colonies, and treat them for swarming, adding supers as needed, in about $1\frac{1}{2}$ days, doing the work with the great thoroughness necessary in a yard that can be visited but seldom.

I cannot afford *not* to clip my queens. I *know enough* to run out-yards without clipped queens, but clipping is insurance against loss, for a few days at least, if one's visit to the yard is delayed for any reason, and in no other easy way can one be sure of the ages of his queens.

PROFITS OF LONG RANGE BEE-KEEPING.

Our crop from the distant yard is over 12,000 pounds, and I think that this compares very favorably per colony with any yard in this valley that was under the constant care of its owner.

We will this year be so fortunate as to receive an average of 7c per pound for this honey, or \$840. Leaving out the April visit, this makes \$168 gross income per visit, or counting the April visit, \$140 per visit.

MERIDIAN, Idaho, Dec. 10, 1906.

[Just a word about warming honey to extract it. As Mr. Atwater intimates, it is an easy matter to get a room so warm that it will melt the combs, or make them so soft that they will drop out of the frames. The best plan is to use a fire of hard coal. The heat is steady and easily controlled. Have a thermometer in the room and don't let the heat go much above 95 degrees; nor below 90 if you wish the best results. The honey will then be warmer than it usually is in the hives. - EDITOR.]

Editorial

The Northern Michigan Bee-Keepers' Association will hold its annual convention April 10th and 11th, at East Jordan, Mich. Special rates of \$1.00 per day at the Russell House. The editor of the Review expects to be present.

The Far Western Bee-Keeper is the name of the latest candidate for apicultural favors. It is a 50-cent monthly; has 18 pages and a cover; is very neat typographically; hails from Riverside, California; and Henry E. Horn is its publisher. Mr. Horn shows, in this first issue, that he wields a facile pen; he has had experience in bee-keeping; and this first number shows that he can give the Far Western folks a very creditable journal. The Review wishes him abundant success.

In a Bee Cellar, which is the better material for the cellar bottom, cement or simply a bottom of earth? A subscriber wishes this point discussed in the Review. The idea has been advanced that having an easy communication between the cellar and the surrounding earth was an advantage, in that it allowed the earth to absorb dampness arising from the bees, also any annoxious gases. How much, if anything, there is in this I don't know. This is the third year that I have been wintering bees very successfully in the cellar under my house, and the bottom and walls of this cellar are of cement. Our cellars up north have bottoms of earth, while the sides are simply boarded up with narrow strips of lumber. The bees are wintering perfectly. I would be inclined to think that it would be better to have the bottom and sides of cement in a heavy, damp, clay soil; but, in a dry sandy soil I doubt if it would be any advantage, and it might not be a disadvantage.

Hauling Honey Home to extract, *a la* Miller, is endorsed by Mr. W. A. Chrysler, of Chatham, Ontario, providing the supers and appliances are adapted to that mode of working; and Mr. Chrysler believes that it will pay to make them suitable for this system.

Songs of Beedom is the title of a neat neat little pamphlet gotten out by Geo. W. York & Co., 334 Dearborn St., Chicago, Ills. Bee-keepers are blessed by having within their ranks some genuine poets and musicians who occasionally break forth in songs of beedom. These have been published here and there in bee journals, or programs, etc., and it is very commendable that they should all be gathered together in one neat little book. Send Bro. York 25 cents for a copy.

Let Individuality Have Full Play.

The rank and file of bee-keepers are too much given to pinning their faith upon some one else—upon some one of the "leading lights." It is all right to read, study and consider the methods that have been adopted by others, but each man ought to have some initiative, some originality about him. Be able to think and plan for himself. The Messrs. Miller and Facey, bring out this point very strongly in this issue. A part of one sentence in the article of Mr. Facey will certainly bear repeating. In speaking of the systemization and comprehension needed when managing out apiaries, he then adds "Intuition and trained perception, and prompt judgment will tell us what to do without following any one else, or even ourselves, only as our grasp of the case may point the way." I wish those words could be printed in gold and set up over the door to every honey house in the land

The Wiring of frames, and the imbedding of the wires, calls forth a variety of opinions and methods. Some tell us to leave the wires a little slack, thus allowing the foundation to stretch a little, thereby avoiding "buckling." I have always drawn the wires taut, so that they would sing like a fiddle string, yet there has been no trouble from "buckling." I have always used the medium brood foundation. Mr. Franklin Fox, of Erwinna, Penn., suggests that, when imbedding a wire, it be caught in the center, by the end of the finger, and pressed down towards the bottom bar. This would give an upward pressure from the wire, and absolutely avoid all sagging. I had often thought of doing this little trick, but there seemed no necessity for it with my management.

Bottom-Starters are favored by a few prominent bee-keepers; and I will say this: If you can't get the combs firmly attached to the bottom bars without the use of bottom-starters, then use them, by all means. I have no use for them. As I have said before, no man by looking at my finished sections could tell which side up they grew. I would like to visit some bee-keeper who can't succeed without bottom-starters, and see his sections before he gives them to the bees—see them as he gives them when trying to succeed without bottom-starters. If the section is not filled full, of course the comb may not be attached at the bottom. I would not expect that it would. If it is filled full, why don't the bees attach the comb all around? They do with me and with hundreds of bee-keepers that I have visited.

Taking Bees Out of the cellar will soon be the order of the day. We are often advised to carry them out in the night, or else in cool weather, and then they will be ready to fly all at once. This advice may be good, probably is, but Mr. A. A. Ludington, of Verona Mills, Mich., told at the Big Rapids convention of a queer but

costly experience he had by carrying out bees in the night. The next day was warm enough for the bees to fly, but the wind started in with a good stiff breeze that continued to increase until it was a perfect gale. The bees were anxious for a flight, and *would* leave their hives, and the wind was so strong that they were actually *blown away*, never to return. Many colonies were lost entirely, and all were so weakened that practically no surplus was secured that year. Just think of it. Nearly a whole apiary of bees *blown away* upon taking their first flight in the spring!

Hive covers of two pieces, with a strip of tin or iron slid into saw kerfs in their edges, all covered with paint when put together, have proved a failure with Mr. Franklin G. Fox, of Erwinna, Penn., but, in telling the particulars, I think he shows *why* they leaked. He says he painted them thoroughly, three or four times before using them, even painted the under side *over the joints*, yet they would gap open and leak in a most tantalizing manner. In describing such covers, I said nothing about painting them on both sides, as I supposed that everybody painted them on both sides. If the under side should be left unpainted, I should expect that the alternate absorption and evaporation of water would cause exactly the trouble that our friend mentions. When I was at the home of Mr. W. E. Forbes, Plainwell, Mich., last spring, I saw a lot of covers made of two pieces, that had been in use several years, and there had been no trouble from their leaking. They were made of well-seasoned lumber, the edges and strips of tin well-painted, then the pieces were put into a sort of frame and crowded tightly together by means of wedges, and end-cleats nailed on, after which the covers were well-painted on both sides.

Mr. Fox overcame his troubles by covering the top of the cover with Neponset paper. He has also been successful by covering a cover with muslin, while the

paint is still green, then painting over the muslin.

Mr. Fox wishes a rim around the edge of his covers, as he says it does away with the use of a weight to prevent the wind from blowing away the covers. If the bees have access to the joint between the hive and the cover, as they do in my case, there is never any trouble from the wind blowing off covers; the propolis holds the cover on all right.

Planning and Looking Ahead.

Of course a large share of a bee-keeper's success comes from careful attention to details, but fully as important is that of looking ahead and working to some definite plan. Every factor in a man's business should be given frequent and careful consideration. Each should be estimated at its true worth, compared with the others, and in relationship to the business as a whole. So many work away, day after day, giving little thought to definite plans, forming decisions on y when actually forced to do so by circumstances. The bee-keeper ought to decide whether his business shall be a mixed one, and, if mixed, what with; or a specialty; or a sole business; how many bees he shall keep; what kind of bees, hives and implements he shall use; what kind of honey he shall produce; how it shall be marketed; etc. All this calls for a vast amount of thought and planning, and there may be occasions when there must be a change of plan. Managing a business reminds me of a pilot taking a ship out of a harbor. All of the landmarks, the buoys, the lights, must be watched carefully; a turn here, and a change there to avoid some rock or shallow. So a man must watch his business closely, and be ready to make any slight change in his course. Quite frequently has some friend said to me: "It was lucky you had the money to do so and so;" or "It was fortunate that your business was in such a shape that you could leave home and help when the honey needed extra-

ing," or, "You could never have come through so well if you had been producing comb honey," etc. Now, there was no luck nor good fortune about it; these apparently fortunate results, I believe, came about because they had been planned and worked for weeks, and months, yes, almost years, in advance. I don't know how it is with others, but, with myself, this planning, planning, planning ahead is one of my chiefest pleasures. No one knows how many apiaries I located last spring before I ever went to northern Michigan; no one knows how many cellars and honey houses I built before a spade was put to the work. I love to sit in a big chair, before the bright coal fire in my office, and, as the shades of night gather around me, let my mind go over the different problems and features of my business. Perhaps some new factor has entered the problem, and I consider everything all over and over again, to see if any changes are needed. I don't know how it is with others, but my business seldom worries me; instead, it is a pleasure. How many times have I wrestled victory from what would otherwise have been defeat, had not there been a definite plan worked out, and everything been ready weeks in advance of any possible need.

Self-Spaced Frames, versus the loose, hanging style, is a question likely to be open for discussion for some time. The American Bee Journal says that I make it appear that the self-spacing is most valuable for holding the frames in place when moving bees, when the greatest value is in the rapid handling that may be done with self-spaced frames—no time used in spacing them. Let's see about this rapid handling. With self-spaced frames some sort of a wedge or spring must first be pried out. Then a dummy must come out—and oh, how it does stick sometimes. Then the frames must be pried apart. Sometimes it is possible to pry the brood nest apart in the middle, but, oftener, the frames are stuck fast so

tightly that it is necessary to commence at one side and pry the frames loose one at a time until the middle of the brood nest is reached, when, at *last*, we are ready to remove a comb. All this does not strike me as very rapid handling. With loose, hanging frames it is necessary only to pry loose a comb each side of the one to be removed, press them over a little to one side, when the comb between can be lifted out. In this matter of getting the combs back, one kind can be put back as rapidly as the other. After they are in the hive, the loose, hanging frames will probably need some spacing with the fingers, but this won't take so very much longer than it does to put in the dummy and get it into place with wedges or springs. As inspector of apiaries I have handled all kinds of frames, and if there is anything I dread to meet it is the self-spaced frame, especially of the Hoffman style. When I come to an apiary with the plain, all-wood, loose hanging frames, what a sigh of relief goes up! I have used the two kinds of frames, side by side, in our own apiaries the last season, and my choice comes from actual practice, not theory nor prejudice.

When it comes to the production of extracted honey, the frames with staples and projections, "excreescences," I call them, are simply not "in it." For several reasons it is better to space the combs wide apart in the supers, when the self-spacing arrangements come to naught. The same can't be said of them, however, when it comes to using the honey knife.



Some of Our Plans for the Coming Season.

I expect that my brother and myself will have somewhere between 500 and 600 colonies of bees under our charge the coming season. Thus far they have wintered perfectly, and before another issue of the Review reaches its readers, it is likely that the bees will be out of doors and on the wing. As soon as the warm days come, which will enable them to fly freely, they will be set out upon their

summer stands; and I expect that many of the colonies, perhaps most of them, will be protected with black, tarred felt. By the way, the need of this protection is not so great when the bees first are taken from the cellar, as it is later, when large quantities have been developed.

As soon as settled warm weather has come, and the danger of cold snaps is practically over, some of the colonies, probably most of them, will be fed. By the way, I have about 1,000 pounds of honey in brood combs, some that I got with the apiary that I bought last winter. The former owner took out these combs last fall, and expected to extract the honey, but farm-work prevented until it was so late and cold that he gave it up. I expect to give this to any colonies that are particularly lacking in stores. When I visited Mr. J. P. Moore two years ago, he told me of a fall harvest that came from asters, I believe, and he saved solid combs of this honey until spring, then put one in each side of each brood nest, and he said it was simply marvelous to see how colonies so treated "shelled out" the bees. Mr. Townsend never said truer words than when he said that a colony to do its best must have an abundance of stores for six weeks previous to the main harvest. This is what our 600 colonies will have the coming spring.

We are having 6,000 frames made and filled with foundation this winter and spring. About 600 supers are being made. We are determined that there shall be no loss of honey from lack of super-room. As soon as a brood nest is full of bees, honey and brood, and the flow of honey is on, we shall put on an upper story, raise half of the combs from below, and alternate them, in each story, with sheets of wired foundation. When these two stories, or the combs in them, are nearly all full, and the flow continues, a queen excluder will be placed between the two stories. In a few days an examination will be held to learn the whereabouts of the queens. The presence of eggs will disclose in which story a queen

is located. If she is in the lower story, which will not be *probable*, all right. If she is above, simply change places with the two stories. At the time of putting the queens below, if not already there, I shall give an additional upper story of drawn combs, next to the brood nest, but, of course, with the queen excluder between it and the lower story or brood nest. The drawn combs will be spaced wide eight combs in a ten-frame super. As soon as the combs in the upper story are sealed over, they will be freed from bees by the use of a bee-escape, and wheeled into the honey house, and another super of empty comb placed next to the brood nest. If at any time it becomes necessary, in order to furnish abundant room, to give more supers before the honey in the topmost super is sealed, they will be given, even if it becomes necessary to tier the hives up four stories high. The empty supers will always be given next to the brood nest. By this management, the oldest, ripest honey will always be in the *top* super, where it can be removed to the best advantage.

As one apiary is here at my home, and one at the home of my brother, and he has three sons, it will be an easy matter for us to keep some one at each apiary during the swarming season, and at the same time keep this "some one" busy most of the time. When a swarm issues it will be hived upon the old stand, given plenty of empty combs, and, where increase is desired, nuclei will be formed from the brood combs of the first swarms that issue, and then these nuclei built up by the addition of combs from the colonies that swarm later. Or we may practice, to some extent, the Heddon method of preventing after swarming. Where no increase is desired, the swarms will be hived on the old stands just the same, and the hives of brood set upon the top of some of the weaker colonies.

The honey house at each yard will have a partition through its center, the honey stored in one side, and then warmed up

with a coal stove when ready to extract it. We shall use the four-frame, Root, automatic extractors, having one at each yard. One man can work alone at each yard very well, taking off the honey with bee-escapes, living the swarms, warming up the honey and extracting it. At one yard we shall extract in a cellar, digging a sort of pit in the bottom, near the extractor, in which to set the scales and the tub with a strainer over it for straining the honey. The honey will be stored in *new*, 60-lb. square tin cans.

At about the close of the breeding season, say, the latter part of September, we shall feed any colonies that are lacking in stores. We shall feed sugar syrup until each colony has at least 25 pounds of stores. The fore part of November the bees will be again placed in the cellars.

The foregoing is a brief outline of our work for the coming season, and is given that we may receive criticisms and suggestions.

Articles Wanted by the Committee on Advertising Honey.

The \$1408.27 raised by the Honey Producers' League has been turned over to the National Association; a committee appointed to spend that money in advertising honey and otherwise advancing its sales. The first plan to be put into operation will be that of publishing in the general press, short articles setting forth the healthfulness, deliciousness, purity and desirability of honey as a food. The purpose for which these articles are written need not appear upon the surface. It is better that it should *not* appear, but there ought to be something about each article that would unconsciously lead the reader to have a better opinion of honey, to have greater confidence in its purity and healthfulness, or knowledge of its economic value as a food. That honey is not an expensive food, requires no cooking, no sweetening nor other special preparation, but is the "whole thing" ready for use. That choice bakings sweetened with

honey do not dry up as sugar sweetened goods. Also call attention to Pure Food Laws and no adulterated honey now sold. These articles should leave the reader with his mouth watering to test the true deliciousness of honey. These articles must be short, not over 300 to 400 words, and will be judged with reference to their value. (1st) Will this article attract attention and interest the general reader? (2nd) Will the reader who is not acquainted with the use of honey, be likely to investigate and use honey? Of course, it would be an easy matter for us to employ one man to write a series of articles for this purpose, but the committee wishes to secure the very best that the country can produce, and takes this method of inviting everybody to send in articles of this nature. Not over 400 words, perhaps less, to include the thought. Mail each article

to W. Z. Hutchinson, Flint, Mich., who will read and mark each according to its merits. The best to be marked 10, next best 9 and so on. They will then be sent to R. L. Taylor who will also read and mark the same. They will then be sent to N. E. France who will also mark them. The articles receiving the highest markings in the aggregate will be used and the authors paid \$5 for each article used. Everybody is invited to contribute. No limit to number of articles each person may send in. Perhaps 30 or more articles will be used. Please write plainly on one side of paper, or better still, use a typewriter if possible.

Committee :—

N. E. FRANCE, Plattville, Wis.

W. Z. HUTCHINSON, Flint, Mich.,

P. L. TAYOR, Lapeer, Mich.

EXTRACTED DEPARTMENT.

QUEEN REARING.

Can it Ever be Made as Profitable as Honey Production?

Occasionally some one writes to me and ask my advice as to whether he better embark in the queen rearing business, and my reply has been almost exactly like that given by Mr. W. H. Laws in his excellent paper on this subject that he read at the San Antonio meeting of the National. The few paragraphs that follow cover the whole ground.

There is only one reason why a person should embark in the queen rearing business in a commercial way, and that is environment, coupled with a natural love for the business.

Environment, we mean where a person is so situated that he can not obtain a marketable product of honey in any locality, or where the flow of honey is slow and of long duration, so that the beekeeper the greater portion of

the season in swarming, or as was the case with myself in a former locality where at times the honey was so bitter that it was impossible to dispose of it on any market.

Where the above conditions exist we can readily see where the queen-breeder might do well, while the honey-producer might have a profound failure.

On the other hand any locality that has short, heavy flows, one or more during the season, and between these flows comparative idleness of the bees, these conditions would be much more for the honey-producer than the queen-breeder.

The best possible condition therefore for the queen-breeder is one long-continued, slow flow of nectar throughout the entire season.

Since the keeping of out-apiaries for honey has become so practicable and popular, the advantage to the honey-producer exceeds that of the queen-breeder. Hundreds of colonies of bees can be run for honey, systematized into out-apiaries, and be made more profitable to their owner, than if he were to devote the same amount of labor to the production of queens, and, necessarily, to a fewer number of colonies.

BEE-KEEPING AS A BUSINESS.

—

The Importance of Being Fitted for it;
Choosing an Occupation; Special-
izing and its Advantages.

—

The choice of a business or profession is one of the most important questions that ever a man is called upon to solve. His happiness, his success, almost his very existence, depends upon the wisdom of his choice. So many times have I seen young men changing from one kind of business to another; and I have talked with them and tried to find out what kind of business they liked best; and so many times the reply has been: "Oh, it doesn't make much difference what, so long as I can make the most money at it." In short, most of them made the change, not because they thought that they were better fitted for the new business, but because they hoped to make more money at it. To wish to make money out of a business is a laudable desire, but, even from a financial standpoint, success is more likely to follow if the man is adapted to the business. Instead of asking "In what branch of business, or in what profession, can I make the most money?" let the young man ask "For what business am I best fitted? What profession or calling appeals to me the most strongly?" And once a choice has been made, only the most serious consideration should lead a man to make a change. A man never ought to change his business on account of ordinary difficulties, or temporary embarrassments. If fundamental principles are correct, any defects in detail can be corrected. In other words, if a man has gotten into the right kind of business, one to which he is adapted, obstacles will not debar him from success. If he has made a poor choice, then no amount of help or "boosting" will enable him to succeed. Select that kind of work that you love well

enough to do for the sake of the *work alone*. Throw your whole soul into it, and don't worry any but what the "pay" will come. But I am stealing the thunder of the man whose article I wish to copy, that of my friend E. W. Alexander, of Delanson, New York, who is writing such excellent articles for *Gleanings* that I sometimes feel like copying all of them. Here is one of special interest to the man who is trying to decide whether to make of bee-keeping a business for life. Mr. Alexander says:

When our attention is called to some new line of business, usually our first thoughts are, "How much money can I make out of it?" or, "How many dollars can be made annually clear of all expenses from a given amount of capital invested?" While I will admit that these are questions of much importance—questions worthy of due consideration—there is still one question which is of paramount importance above all others, which, I am sorry to say, we seldom think of. That is, "Am I naturally qualified for that line of business? If so, then I have the principal requirement of success; if not, then no amount of study or hard labor can fully take the place of my inability to fulfil its requirements." Oh how many of us spend our whole lives like water seeking its level, and never find the business that God fitted us best to follow! My young friend, if you have any thoughts of taking up bee-keeping as a business, then think this business over carefully before you invest much money. My advise would be to work one summer, at least, for some successful honey-producer—one who would take pains to teach you all he could in regard to rearing queens, forming nuclei, increasing colonies, wintering, and producing honey—yes, and a thousand and one little things, which only experience can teach. In this way you could be earning your board and fair wages while learning your business.

In regard to the amount of money that can be made from bee-keeping, it is like all other rural pursuits—it depends to a great extent on the season. It is no get-rich-quick business; still, if rightly followed, it will give as good returns one year with another as any business of a rural nature, considering the amount of capital invested and labor required. About five dollars per colony, spring count clear of all expenses, is a moderate esti-

mate of the profit from the business—that is, if run wholly for the production of honey without any special care to see what might be accomplished; but if run by an expert on high-grade methods, then \$15 or \$20 per colony.

Here is where the specialist has a great advantage over the man who divides his capital into two or more channels. These men soon find that they have twice or three times the trouble to contend with, and only a third or a half the capital to use in making a success of any one of the several lines they have taken up; but the lack of necessary capital is only a small factor, for that can be got at the bank, but the necessary intellect, business capacity, and experience cannot be borrowed, and without these elements to success there is only one alternative, and that is and always has been simply failure.

Then there is another thing to take into consideration. It is pleasant to have a paying business that requires your time only about half the year, and that the pleasant part, when you can be out doors and enjoy all the pleasures of nature's spring and summer. With me it is a real pleasure to breath free air unsoiled by either bell or whistle calling me to labor.

I will now take it for granted that you have spent one or two seasons in learning all that you could during that time from some competent person, and you still want to follow bee-keeping. I can not advise you to go slow, as some do. That "go slow" is a blight on any man. First be sure that you are right, then go ahead with willing hands and a good stock of perseverance ever ready to overcome the unexpected troubles as you meet them. Make up your mind from the first to take good bee literature; have good bees; use good tools and hives, and then produce good honey. Take pride in your business. If you have taken up queen-rearing, forming nuclei for sale, or increasing your colonies for sale, or producing comb or extracted honey, don't forget to look well to quality. Then advertise and let the public know what you have, and you will in a short time not only surprise your friends but yourself with your success. You now have a clear track and a light grade compared with what some of us older men had fifty years ago. We then had a hard time of it—no bee journals, no Italian bees, no comb foundation, no honey-extractors, no bee-smokers, and no market for the little honey we secured.

How different now, with our large markets established, where our honey is annually sought for, either in small lots or by the carload, and with our new inven-

tions and improved methods enabling us to produce five times the amount per colony we did then! To me bee-keeping now seems like quite a good business. Still I never advise one to take it up, not even my own sons, for I have always thought that, when it comes to choosing a life business, each one should choose for himself. While it is true that man to a great extent makes his circumstances, still it is also true that circumstance to a great extent make the man.

I am well acquainted with a man who was born on a farm, and worked hard on it for several years after he was married. He was temperate and of excellent habits, working early and late; but still his farm life was a perfect failure. After toiling in close circumstances for several years his wife's friends got him a situation in New York city. Then the scale turned. He struck a place that God had fitted him for, and for the past thirteen years he has had a net income of over twenty thousand dollars a year. I speak of this case to show that many of us are trying to make a success of some business to which we are not at all adapted; also to show the importance of trying hard while young to start right.

You should look upon your business as your bank; and whenever you can add a dollar to it, do so, and it will return in due time many fold. Take pride in having a good apiary, and remember there is far more in the man than in the business. If the bee-keeper in the future will take our leading bee journals he can, through their advice, shun so many troubles that we older men had to bear, that it is almost like another business—not but that it is still subject to many discouraging conditions; and our inability to have any control over the season is and always will be its worst feature. But all lines of business have some troubles with which to contend. When the farmer loses his stock it is hard and costly to replace, and it often takes some time to do it; or when his crops are ruined by untimely frosts or protracted drouths the loss is hard to bear and overcome. But when the bee-keeper loses a large per cent. of his bees he still has the hives and combs left; and if he has some good colonies he can soon have his original number again with but little expense, and usually secure some surplus besides.

Here is one great advantage our business has over many others. Taking our bees safely through long cold winters and very changeable spring weather, with small loss, has been a hard problem to solve; but this part of the business is now

so much better understood by nearly all bee-keepers than it was a few years ago that we feel much encouraged in eventually overcoming other troubles as we have this.

Each year brings some new methods whereby our business is placed on a more reliable basis than it formerly was, enabling us to produce honey cheaper than we ever could before. Still, we have some dark clouds of losses and disappointments hovering over us. I have seen many through which it was almost impossible to see a ray of silver lining; but as the mariner's compass will guide the ship safely through ocean storms, so will continual perseverance lead you on and on through these trying hours until a clear unclouded sunset welcomes you to a land of rest.

It is not so very many years ago that bee-keeping as a specialty was in its infancy; and bee-keeping as a sole business was very seldom attempted. The

solving of the wintering problem for northern bee-keepers, the overcoming of foul brood, increased facilities for transportation, methods of controlling increase whereby one man may manage several apiaries, and, most important, a steadily increasing demand for honey, all these are rapidly leading men to make of bee-keeping a sole business. Many men will always keep a few bees as a recreation, others will follow it as a specialty, but no man who has a love for the business, is adapted to it, has a good location, or will secure one, and stock it with a good strain of bees in sufficient numbers, and adopt the right kind of hives, implements and methods, need fear to make of bee-keeping his sole business for life. The prospects for bee-keeping as a business were never brighter for the man who will follow it in a *business-like manner*.

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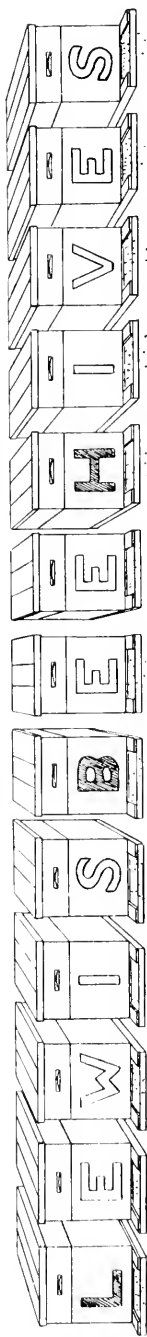
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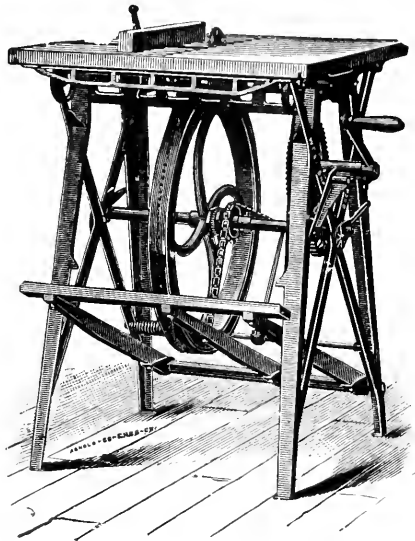
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Last month I yielded to the temptation to publish a letter in praise of *ADVANCED BEE CULTURE*, and now comes a temptation equally as great.

BRIDGEPORT, Wis., Jan. 29th, 1907.

Friend Hutchinson:

ADVANCED BEE CULTURE is a work of art; but that is not the main point, its teachings are practical and not theoretical; the results of long experience in the apiary, and in the study of bee lore. The language is concise yet clear, and the different topics so divided as to enable the reader to grasp the line of thought.

I am not much of a book man, having given more attention to the study of the journals, but in *ADVANCED BEE CULTURE* we have gathered into compact and convenient form, what is probably the best expression of facts relating to practical advanced bee culture, that have heretofore appeared in fragmentary form, scattered through many publications for a period of many years. Any one can see the advantage of having such a book, and I can earnestly recommend it to any one who wishes to know how to keep bees for practical results.

I have never followed your advice wholly in the matter of throwing aside all occupations except bee-keeping; but neither has "W. Z." taken his own medicine, if he had, what would have become of the *Review*? "W. Z." may be a practical honey producer, but he is, first of all, an editor; and the bee-keeping world could not afford to allow him to retire from that position if he *wanted* to take his own medicine and follow his own advice. Therefore, honey production, with him, is, and must continue to be, a side issue. I say this in order to emphasize the fact that I consider the publication of *ADVANCED BEE CULTURE* and the *Review* the most important work that "W. Z." ever did; but the other had to be done in order to prepare him for this work.

Sincerely yours,

Harry Lathrop.

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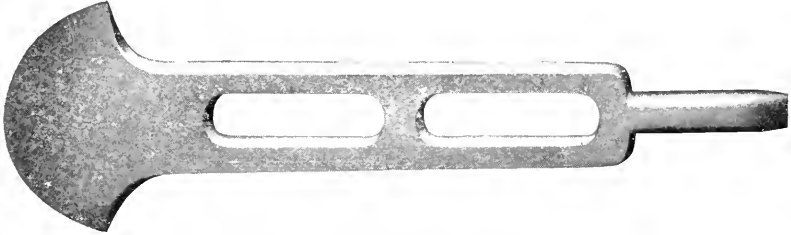
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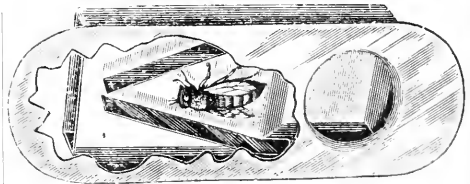
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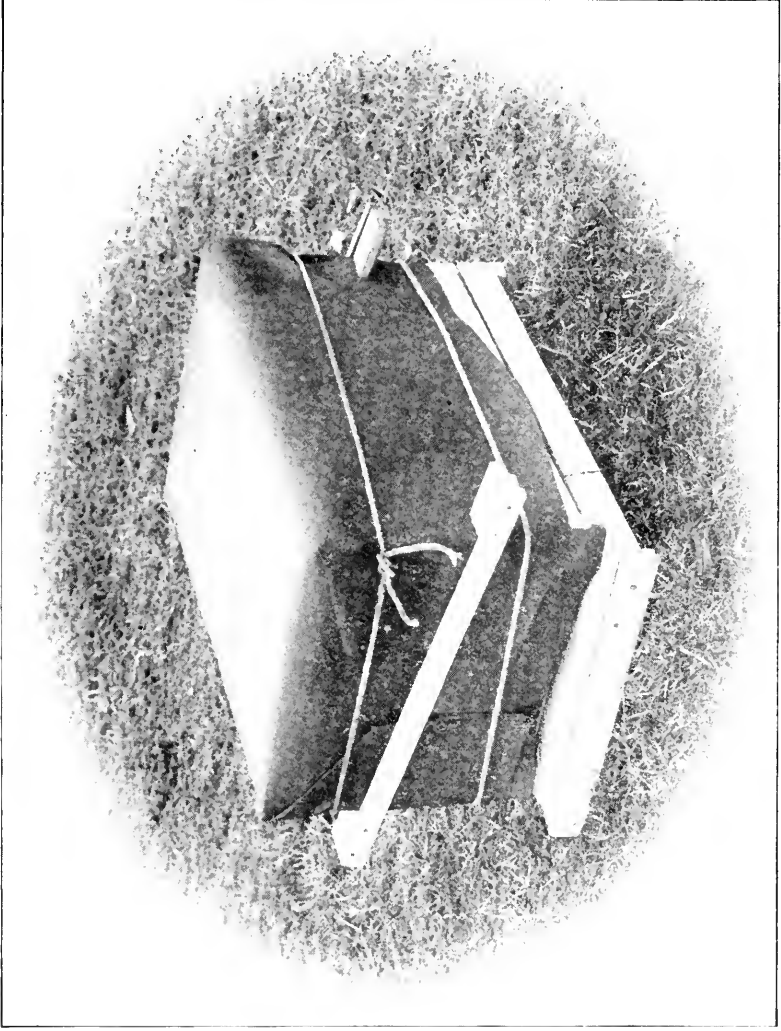
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W. Z. HUTCHINSON, EDITOR AND PUBLISHER.

VOL. XX. FLINT, MICHIGAN, APRIL. 15, 1907. NO. 4

Spring Protection and Securing Workers for the Harvest.

W. Z. HUTCHINSON.

IT IS possible to have a good flow of honey, and yet secure no surplus. If the bees are weak in the spring, and the white clover harvest is early and short, it simply puts the colonies in good trim; then, if basswood furnishes no honey, the season is practically a failure, when it need not have been had the bees been strong early in the season. How to have colonies strong in numbers at the opening of the harvest is well worthy of consideration.

Aside from food in abundance, *warmth* is the one great thing needed to promote *safe*, early breeding. An ordinary colony will generate sufficient heat to enable the bees to rear as much brood as they can tend; the trouble is that so much of this heat is lost by radiation.

Early in June, the late Dr. Whiting, of East Saginaw, Michigan, once showed me a colony the frames of which had had no other covering than a piece of wire

cloth, for a period of two weeks. The colony had been sold, and prepared for moving, and then the purchaser had failed to come after it. There had been a loss of at least two combs of brood, as compared with colonies well-protected above the frames.

One spring, at my request, "Cyula Linswik" and her sister left one colony packed until I arrived to buy a part of their bees. The next night was so cool that the bees in the unprotected hives packed themselves away snugly upon their brood, while, in the chaff-packed hive great masses of bees crawled out and hung upon the outside of the division boards upon both sides of the brood-nest. This colony was no stronger than many of the others.

I remember going out one morning May 21st and finding the mercury down to 32 degrees, and the snow flying; and this was after three weeks of fine weath-

er during which considerable honey had been gathered, and the combs filled with brood. The cold weather lasted three days, and how the weaker colonies did suffer! Some of them lost half of their brood, and a few died out-right. Had the bees been warmly packed the damage would have been avoided, or, at least, greatly lessened.

Another year there was a cool spell of weather in May, during which the mercury remained at about 35 degrees for nearly a week, and some fair colonies actually *starved*; the bees being closely clustered upon their brood, and unable, or unwilling, to leave it to bring honey into the cluster.

Another spring the warm weather came quite early; and continued so many days that I finally ventured to place my bees upon their summer stands; but, knowing from sad experience, the uncertainty of early spring weather, I packed the hives in fine hay, the same as for winter. As an experiment, two of the strongest colonies were left unprotected. Unexpectedly no very severe weather followed, although there were many quite cool days in which the bees were closely clustered in the two unprotected hives. At such times what a pleasure it was to examine a colony that was protected. The bees were never found clustered, but crawling actively all over the combs, while a puff of smoke would drive them down an inch or two, and expose large quantities of sealed brood. When the honey harvest came, the majority of the protected colonies were actually *stronger* than the two left unpacked.

Numerous instances like the above have convinced me that it pays to protect bees soon after taking them from the cellar, and to allow the protection to remain until the time has arrived for putting on the supers.

If spring protection is so important that it is advisable to give it after taking bees from the cellar, it may be asked why not practice out-door wintering, then winter protection will answer for spring, and the

expense for a cellar, and of carrying the bees in and out, will be avoided? In the first place, the saving in stores in cellar wintering will pay for the expense four times over; and, in the next place, and of far greater importance, it is only by the cellar method that the wintering of bees, in the North, can ever be reduced to a *perfect system*. By a selection of natural stores, or, better still, by using sugar largely for winter stores, we can secure uniformity of food, but it is only in the cellar or special repository that uniformity of temperature at a desirable point can be maintained.

I once believed that it was better to leave the bees in the cellar until late in spring, but, as warm weather comes on, they often become restless; sometimes, too, there is discomfort from the long continued confinement, and, as a flight in the open air, and a little freshly gathered pollen, honey and water seems to act like a real charm, putting new life into their veins, and encouraging brood rearing as nothing else will, I believe it is better to place them upon their summer stands as soon as pollen can be gathered in abundance; and, as we almost always have cold snaps after this, I would protect the hives.

SPRING PROTECTION NEED NOT BE AN EXPENSIVE AFFAIR.

Spring protection need not be so expensive nor elaborate an affair as that needed in the winter. Wrapping a hive in tarred felt is all that needed is really superior to a thick, heavy packing that shuts off the heat of the sun. Its color is also in its favor it absorbs all of the rays of the sun. Its cheapness and the ease and quickness with which it can be put in place and removed are also great points in its favor. I believe Mr. Arthur C. Miller was the first to suggest the use of this kind of protection at least, he was the first to bring it prominently before the public. At first I was somewhat skeptical as to its efficacy. Only last spring I thought I had a pretty good example of its worthlessness. My brother dug 50

colonies out of a pit, up in Northern Michigan, where Mr. Cavanagh had buried them the previous autumn. He then put paper on about three-fourths of the colonies. About the first of June I removed the packing and moved the colonies some three or four miles to another location. My brother asked me how the protected colonies compared with those having no protection. I told him that I could not see as they were much, if any, ahead of those that had no protection. In fact, I was almost inclined to believe that those that were unprotected were fully as good as the others. He let me go on in this style for awhile, then he told me that the ones left with no protection were the very strongest colonies in the yard. If the covering of paper had helped the weaker ones to catch up with them, then it had shown its usefulness.

FASTENING ON THE PROTECTION WITH STRINGS.

The usual method of putting on the felt is to fold it down over the hive and fasten it by tacking a strip of thin wood along the lower edge, on each side of the hive, but I have tried a plan that I like better, viz., that of tying it on, putting a piece of wool twine, or some coarse twine, around the hive, in two places, and drawing it up as tightly as possible, then tying it. The only difficulty with this method of fastening on the paper is to keep it in place while the strings are being put on and tied. Ordinarily, it would require the services of two or three persons, but I hit upon a scheme whereby one man can do the act easily. The felt is a yard wide. Cut it off in lengths just long enough to reach over the top of the hive and down each side to the bottom. Then cut out pieces just the size of the end of the hive. The piece that is to go in front of the hive should be cut on a slight circle, on one edge, and this edge turned down so as to leave a place open at the bottom for an entrance. To hold the paper in place while it is being tied, I tacked a block to the side of the top-bar of a brood-frame (of course, any stick will

answer) at each end. I had the blocks at such a distance apart that when the felt had been folded over the hive, as one would fold paper over a package that was being done up, these blocks would just nicely slip over the end of the hive. (See frontispiece.) Then by pressing one end of the stick up, and the other down, any amount of pressure could be brought to bear: enough so that the stick would remain in place, and hold the felt in place while it was being tied. I made two of these sticks with blocks nailed on, one for each end of the hive. Lay the large piece of felt over the top of the hive, set the end-piece up against the end of the hive, place the knee upon the top of the hive, fold down the felt around one end exactly as you would fold paper in doing up a package, put on the stick to hold it in place, turn to the other end of the hive, and serve it the same. Have the strings cut off the right length, put one around, draw it up tight, tie it, then put on another string in the same way down near the bottom of the hive, remove the sticks, and the work is done.

SOME OF THE ADVANTAGES OF THE TYING-ON-PLAN.

The foregoing seems like a lengthy description, but the actual work can be done in *one minute*, and does not disturb the bees like the nailing on of strips of wood. It can also be done four times as quickly. If, at any time, it is desired to examine a colony, it is only necessary to untie the strings, and remove the felt, the work of a moment, while it is quite a little task to remove strips that are nailed on, and to replace them.

Five cents worth of tarred felt will cover a hive, and, with this method of putting it on there is not much likelihood of its being injured, and it can be plied away and saved to use another spring.

Reader, if you live in the North, and have never tried protecting hives in this way in the spring, just try a few, and note the result.

FLINT, Mich., Mar. 20, 1907.

Honey Flows, Localities and Their Influence in Swarming.

ADRIAN GETAZ.

IN the November issue, of 1905, request is made for the discussion of the management of out-apiaries, in regard to the swarming question; the object being to learn how to manage a large number of colonies with the least possible work.

Those who have successfully managed large apiaries are the ones best qualified to speak on the subject. That rules me out. I might say, however, that I always have had some other business to attend to, besides the bees, and usually the time that could be given to them has been very limited. In fact, during the first three or four years of my bee keeping, the only time I could devote to them was at night, after supper, except now and then a half day. So you see, the question of short cuts, and time-saving-devices and processes, have been as important to me as to many owners of hundreds of colonies.

But this is not the point I am going to make; I want to call the readers' attention to the relation between the locality and the management to be adopted. It is not altogether a question of which method requires the least work, but which will give the best returns, everything taken into consideration.

THE NATURE OF HONEY FLOW.

What we call locality consists, in a general way, of three features, which are:

1st the climate.

2nd the length and nature of the honey flow.

3rd the market; whether extracted or comb honey is required, or both, and, in the latter case, in what proportion.

Concerning the swarming question, the chief point to consider is whether at that time of the year, the apiarist works for comb honey or for extracted honey. I say

at "that time of year," because where there is white honey at some time of the season, and dark honey at some other, it might often be profitable to harvest the white honey as comb, and the dark as extracted. A very late flow has to be taken in the extracted form, because, at that time of the year, the weather is too cold to admit of anything like brisk comb building.

The question of climate may be set aside, but that of the nature and length of the flow is the most important and the most difficult to deal with. There are many kinds of honey flows, or, rather, honey seasons; here are a few by the way of classifying them.

1st. A long, uninterrupted flow of several months, that is, in good seasons; beginning rather late, after the swarming is over. That, I understand, is the conditions in a portion of the Pacific Coast. Under such circumstances, it is said that a colony and its swarm will give almost twice as much (in a good season) as an old colony not having swarmed.

2nd. A locality with two distinct flows. For instance, in some of the Western states where the surplus is obtained from the two crops of alfalfa. Or in New York and some other North Eastern states, where there is a flow from basswood and white clover and another from buckwheat.

3rd. A locality with a single flow of a few weeks duration; usually very heavy, comparatively, and opening suddenly. That is the situation in most of the Northern States where white clover and basswood are the main sources of surplus. As the great majority of your correspondents are in that kind of locality. I expect to see that part of the program fully discus-

sed. Judging by their contributions during the last two or three years, I look for some very interesting descriptions.

4th. A long honey flow, or, rather, honey season, made up of a succession of small flows from different sources, with more or less interruption between them. The flows very irregular; sometimes longer, sometimes shorter, sometimes heavier, sometimes lighter. No certainty as to which flows will yield and which will not in a certain year; the main cause being a sufficient amount of rain at the time to produce nectar. The only certainty known in advance is when a late freeze destroys the blossoms or the buds that would produce them when the proper time comes.

This describes my locality, and if it were so only in East Tennessee, it would not be worth while to write about it. But it is a condition met throughout the whole Southern States, and one that has not been yet fully studied out. It is true that the length of the honey season is not everywhere the same. Four months here, up to six or seven or perhaps more in Southern Texas. Nor are the sources of surplus or flora the same. But the *nature* of the honey season is the same: that is, a succession of flows of different lengths and strengths, with more or less interruptions, varying exceedingly from one year to another, and always very irregular. Very seldom as heavy as the basswood and white clover are in the North, except occasionally a flow of honey dew.

Under such circumstances, there is only one policy to follow, and that is to have the colonies as strong as possible throughout the whole season; so as to make the best of every flow that may happen. And to keep a colony as strong as possible during several months, it is necessary to keep up brood rearing during that time, and keep together bees, brood, and combs.

MANAGEMENT FOR EXTRACTED HONEY.

This is easy enough. Have a brood nest large enough to accommodate the queen, provide enough empty combs for the

supers so that the bees can put in any amount of nectar that they may bring in, and not more than four or five out of a hundred colonies will swarm; and those that do swarm are among those which are superseding their queens, at least this is what Dadants say, and have persistently said, for a number of years. While I have not produced enough extracted honey to fully verify their assertions, I have not the least doubt about their being correct. Since what swarming occurs is due to superseding, I presume that if the apiarist were to requeen his colonies regularly, practically none would occur.

MANAGEMENT FOR COMB HONEY.

I am writing this for comb honey management, and for such honey flows as described above for my locality. As already said, the point is to keep the colonies as strong as possible during the whole season, which means to keep bees, brood and combs together, and have as little interruption as possible in the brood rearing. These conditions necessarily exclude all systems of prevention of swarming that require a considerable withdrawal of brood from the colonies.

Now let us see how the modern systems of shook-swarming and other similar treatments would answer; and to be more explicit and more easily understood, let us take the usual course of events in my own locality.

The swarming takes place during the whitewood flow. This flow lasts seldom more than three weeks; sometimes only two. When the swarming occurs there may not be more than a week left. Suppose we adopt the shook-swarming plan, and, to put it upon the most advantageous basis, set the old hive aside, close to the old stand, so as to throw all the young bees in the swarm as fast as they come, so as to make the swarm as strong as possible. Now, three kinds of conditions may confront us.

1st Suppose the whitewood flow is heavy and immediately followed by a

heavy flow of honey dew, which is very seldom the case. Then the brood nest has to be reconstructed, and we are out of pocket on two items. First, the honey consumed by the bees to produce the wax necessary to that effect. Second, the honey that these bees would have brought in and stored in the sections had they not been busy in building the new brood nest.

2nd. The white wood flow may be only medium, and this followed by an interruption during which enough may be brought in to keep up brood rearing, at least, to some extent. This is the most usual case. Then we are without surplus from the whitewood during that period; while, if there had been no brood nest to rebuild, we would have had some. The amount of brood raised will be from none, when the "shaking" is done, to but little, for a good while; and the resulting loss of bees will be keenly felt in June and July, when the basswood and sourwood are in blossom.

3rd. The whitewood flow may be light, or spoiled by bad weather, and then followed by a nearly total interruption of a week or two. Then no brood nest will be rebuilt until the next flow, and no brood reared during perhaps three or four weeks.

That colony will never give any surplus this year.

Now suppose that instead of "shaking," we had caged the queen. Then, in every case, we would have been ahead at least all of the honey consumed in making wax to build the new combs, and that which would have been gathered by the bees that, instead, were working on the new brood nest. In every case the loss of brood would have been less, especially in the last one. With combs already there, and containing more or less honey, the brood rearing would never cease completely, and is quickly resumed, at least, to some extent.

As to the question of work, there is no more work in the caging method than in any other, and considerably less than in most of them. One visit to cage the queens, another a week later to destroy the queen cells, and a third one four or five days later to release the queens. This last takes but little time, as it is not necessary to go all over the combs. No shaking of combs, no moving of hives, no extra hives to contain the swarms; in a word, the simplest way of all, consistent with the object in view.

KNOXVILLE, Tenn. Dec. 10, 1905.



Helpful Hints in Extensive Bee-Keeping.

E. D. TOWNSEND.

REALIZE that I am using considerable space in this spring protection talk but we must take into consideration the fact, that in getting our bees through the spring in the very best possible condition, to take care of our surplus in June, lies much of our success.

The majority of our bees are wintered with the hive covers removed. Thus the

propolis is broken, and when the covers are replaced on the hives, if no protection is given, there would be a direct draft through the hive. To overcome this trouble we wrap our hives in tarred paper, folding it over the top of the hive, and fastening it with four laths at the bottom of the hive.

We sometimes remove the cover and

place the paper next the bees. In either case the idea is to retain the heat in the hive that would otherwise escape through the hive from the top.

Bees protected in this way at our Kalkaska Co., yard last spring went through the heavy breeze of May 10th without the loss of a particle of brood.

We have examined many colonies of bees, in the spring, both in chaff packed hives and those that were paper-wrapped, and we could never see much, if any, difference between them.

DON'T PAINT HIVES IN COLD WEATHER USE
PLENTY OF "ELBOW GREASE."

Never paint hives during cold freezing weather. The paint will not penetrate the wood, just sear over, and about one season will be the life of it.

During April or May is when we do our painting. Now there is a knack about this painting. In the first place, we buy pure mixed paint. Be *sure* it is pure. I don't know as I can tell you how to tell pure paint, but good painters tell me that a pure paint does not separate; or, if it is a mixed paint, there should be no sediment. It should be of one consistency, like a paste, when you buy it. As soon as it is warm weather in April we are ready to do our painting. Stir the paint until it is of a good, smooth consistency, then *rub it well into the wood* when applying it. Use a good pliable brush. We like them about three inches wide for hive-work; rub the paint in well, for here lies the great secret of good durable work. The majority in learning to paint, use about twice the paint they should, at each painting. Put on a light *smooth* coat each time, and instead of trying to put it on with one or two coats, go over the work two or three times: this will give you a very smooth surface. Then do not forget the most important part of letting the paint dry thoroughly between coats. This will insure a lasting paint; while if just daubed on, it will only last a very little while. I have had good paint commence to cleave off from our hive covers,

in one season, for no other cause than being improperly applied.

PUTTING FOUNDATION INTO BROOD FRAMES.

April and May are the months in which we put in our foundation. Only a few have a suitable place to handle foundation during cold weather; so we plan to have our hives and frames all nailed up and wired during winter. For you see, with our management, after our bees are on their summer stands, and papered, there is nothing more to do with them, until the upper stories are put on the last of May.

This gives us April and May to do our painting, putting in foundation, moving bees, etc.

We use the double groove and wedge to fasten our foundation into all brood-frames. Have the wires just moderately taut, be sure to push the wedge clear home, then you will have no trouble with the foundation dropping out.

The rocker wire-imbedded is as good as any. Although not so fast as the spur wheel, it leaves the foundation as smooth as a board, while the spur wheel weakens the foundation; so much so that, in extreme cases, it breaks in two along the wire, when given to the bees. We always use full sheets of foundation in both brood-frames and sections, and consider it money well spent.

MOVING BEES ON A WAGON.

We usually have a plenty of cool days during May, in which to do all our moving of bees. We used to move during the night, but, of late, we have found we could do just as well to move them in daylight. It is much more agreeable to do it in daylight; then we found that, by watching our chance, we could select a day, or days, that the bees could not fly on account of cool weather. This is much more desirable than night moving. For short hauls, where one is sure of reaching one's destination before the weather would have a chance to change, a piece of section, under the corner of the cover, just to give a little ventilation, is all that is nec-

essary; the cover being held in place with box staples at each corner, and a lath nailed over the entrance.

But if you intend moving far, even in May, you better nail a wire screen on top; then if you should get into a hot spell of weather, you would be prepared for it.

In hot weather it is absolutely necessary to give additional ventilation, in the shape of an upper story where the bees can leave the combs at their will. This upper story should be covered with a wire screen.

Well do I remember moving our first load of bees from Clinton county. It was after a good flow from clover and bass-wood, and the hives were heavy with honey and bees. 'Twas the first week of August, and it was hot. It took us two, hot, sunny days, the best we could do, and we lost a good many bees and some brood. Every chance we got, where we could get water, we would wet them down. Not only would we wet the bees, but the outside of the hives and rack were kept wet.

Although we lost no colonies outright, many were so weakened that they did not do anything in their upper stories that fall. This load of forty colonies, after the hard usage they got in moving, stored \$75 worth of buckwheat honey, after being moved in such poor condition.

If we move bees in the fall, we do it during a cool spell in October. The disadvantage of moving in the fall is, they are heavy with honey at this season of the year. This makes it more likely to break out combs, and they are heavier to handle, and to draw. The first difficulty can be avoided by carefully handling. While we prefer to move in May, we have moved a good many in the fall. In moving bees in the fall, or at any time when the ground is rough, or frozen, we use bolster springs on our wagons. Our bee rack is a flat one, with a "dash", or, in other words, the front is boarded up about three feet high, to commence our load against. This tight, boarded-up-front, also protects the team, somewhat, should

the bees get out in transit. Then, on top of this "front" is built a seat for the driver.

The rack is 17 feet long, and seven wide. When we only have a part of a load, we couple our wagon up short, and only use what we need. With this large rack, we do not have to deck up, usually, to get on all we can draw. With one deck, a strip of board tacked around the edge of the rack is all the fastening the hives need in ordinary hauls.

MOVING BEES BY THE CARLOAD.

In moving bees in car lots, everything should be in readiness at both ends of the line. In the first place our new location should be in perfect readiness for the bees when we arrive; for, it is best to unload immediately after arriving.

In preparing colonies to move by rail, one must take into consideration that they *may be* confined to the hive several days, and another point is, we cannot select our cool period as we did when moving with a team. While all the moderately good, to good swarms, will not need more than a screen over the top, all the very strong swarms will need additional space above, but it need not be on so extensive a scale, as if it were to be a hot-weather-journey. I would not think of putting off moving later than the middle of May; and if the bees have wintered well, so there are plenty of young bees hatching, I would prefer moving, say a week earlier or the second week of May.

You will notice I want quite a per cent. of young bees, as this confinement is hard on those old bees that have gone through the hardships of wintering.

USE A STOCK CAR FOR SHIPPING BEES.

Previous to packing up our bees for shipment, we better see about a car to ship in. This should be a single-deck stock car. This open, well-ventilated car is *the car*; and I think the *only* car fit to move bees in. If it should turn hot as it did once when we moved our Kalkaska Co., yard, nothing would have saved the bees. Whatever you do, do not make the

mistake of using a box car in moving bees.

Now, it sometimes happens that one cannot get a car when it is wanted: in this case, do not close the bees in until the car is ready, and at the depot. It is not always possible to find out by your agent *when* you will be able to get a car. So, it would be a good idea to go to the agent and get his idea, of how long before you will need it, you had better order. This may save you vexatious delays.

HOW TO PACK AND FASTEN THE HIVES IN THE CAR.

We will now suppose your car is ready; at night shut your bees in, so there will be no delay in getting a good start the next morning. Secure teams enough to put them all on the car in one day. I hope the hives are all of the same size and shape for we want to place a tier of hives covering one-half of the car; then, when we get one tier of hives covering the floor of the car even with the door, four or five inch strips of boards are tacked along on top of the rows of hives, one next the outside of the car, but on the edge of the first row of hives, then the second strip is tacked on the space between the first and second row of hives. If you get the idea correct, these strips will come just right to set your second tier of hives on. These strips run lengthwise of the car; this is so that should there be any moving about of the hives, they will not slip off these strips; as all the jolting is from front to rear, or vice versa. Now, we will suppose you have one end of the car full, I said full (?) There should be space enough inside of the door frame to put in a 2x10 scantling, lying down flat. These 2 by 10 scantlings should be eight foot long, as that is the width of the car outside, they are to be placed crosswise of the car, and as they are the length the car is wide, they have to go in the openings formed by the sides of the car being open. Slide them toward the car door until they come up against the car door post, this gives us a good solid support to quey up against. One of these is placed against each tier of hives. Now, with bottom boards, or

covers, wedge up every row of hives. This is important for the jolting they get has never been told. Our load, on its trip north, seemed to be in that luck, if one could call it luck, to get in between two loaded gravel cars, or similar positions; at any rate, it would seem as if those railroad men were trying to even up some old grievance against those bees, the way they pounded and bumped them every chance they got.

With all of this pounding, however, there were only a few combs broken; and this is all the more strange, when we take into consideration that several of these colonies were of the previous season's new swarms.

Fifty of these colonies were in old rickety hives, some I had bought that spring, and were not yet shifted into our new hives. It was almost impossible to calk them so but what more or less bees would get out. The fact is, several of them *did* get out and, as it was fine weather, whenever we would side-track for any length of time, these bees would carry pollen and water. The point I wish to impress is that these bees were very cross. Although they did not sting anyone, I think they would, had I not attended to them, by smoking them; also keeping them well wet down whenever it was possible to get the water. The moral is to have one's bees so well secured that it is *impossible* for them to get out. For you see how easy it would be to cause a bad feeling among the railroad men that might prove disastrous should we ever ask for a lower freight rate on bees.

I should have mentioned in the proper place, that all our bees that had an additional upper story on, were placed on the upper deck, as we could not deck up on these double story hives without a good deal of labor; for, if we should have set another tier directly upon them, they would have been smashed to pieces, with the pounding they got.

I have always thought that were I to move two-story colonies, I would order a double-deck stock car, then put one tier

on each deck. About 200 colonies could be moved at one load in this way, and put only one tier on each deck.

It was about May 21st, three years ago, that we loaded about 80 colonies of bees and started for the woods, or more particularly speaking, for the wild raspberry district of Northern Michigan. These were the famous Clinton Co., bees that I worked two years with only six visits during the three years, and harvested \$1,200 worth of honey.

We got them loaded, at Carson City, our shipping point, about four o'clock p. m. and went as far as Greenville, 25 miles, where they were "kicked" off on a "Y" of the P. M. railroad where we layed over the first night.

Right here I learned a lesson, and that was we could not load our car with the idea it would go one particular end ahead. When this car was pushed in on this "Y" it was destined to go the other end ahead

for some time at least. About seven o'clock the next morning we started for Remus, where 60 more colonies were to be loaded on. We left Greenville "wrong end front," as I predicted, and reached Remus in good condition about 4 that afternoon. As far as the railroad was concerned we were at our journey's end, for we had to re-hire the car here to continue the trip.

The evening of the 23rd we were again on the road north. The balance of our trip was via, the P. M. R. R. and we were "armed" with a lay-over for Big Rapids, 20 miles north, where we had 50 more colonies to load, this took us nearly a day. Sometime that night we got to Baldwin, perhaps 50 miles, where we lay until morning. The next day, or the night of the 25th, about 4 p. m., we arrived at our destination; the first loaded bees being on the road five days.

REMUS, Mich., Jan. 8, 1907.



Covers, Hand-Holes, Bottom-Boards, Frames and Wires.

WALTER HARMER.

MANISTEE, Mich., March 2nd, 1907.

DEAR EDITOR and Friend—As you are one of the best that I know of to take suggestion and criticism in that, "I'll help you, you help me, and all pull together" spirit, I will proceed in my rough way (which you have before accepted) to pull to pieces some of the mechanical ideas represented in that beautifully made picture in the February Review.

I will commence with the cover. I had an idea that you had adopted a flat reversible cover, but I see yours has a groove cleat which folds over and projects on both sides, or top and bottom, of it, which prohibits the sliding-on from al-

so prevents ventilating the colony to a nicety when needed at the top.

Don't you find those finger-holes insufficient when handling a heavy colony or supers? Those short cleats sent out with new hives are fine for nailing just over, or one-eighth of an inch down over the saw-wabble-cut; this gives a fine grip; or a strip nailed all across the ends of the hive, a good long finishing nail at the ends of it driven into the sides, and short ones in the end board, makes a good grip, too, with the finger-hole and it also helps to hold the sides of the hive to the end boards; and, if I were making side-boards, or ordering them, I would have no finger

holes *there*, for I do not remember ever making use of such; and they are only a harbor, for spiders, bees, moths, and more paint.

Now, in my lake shore, backwoods, opinion, those bottom boards will soon be a thing of the past; at least, mine would, what I have of them, if I could only afford to put them on the kindling wood pile. For instance, in the spring when sometimes it is necessary to put a stop in front long enough to let only one or two bees out at a time, then, the next day the weather or temperature goes up 15 or 20 degrees, and the bees want to clean house, what happens with your part? You cannot slide your stops back. You have to get shorter ones, and then change back to your long ones in the evening again. What I have like that, I have the bumpers sawn off with a fine saw. You would have to have your screen stops cut and fitted to a nicety also to go between them.

In reversing, do you adopt the deep spaces in the busiest and most crowded time, say July, the shallow one in the fall, then the deep one again in the cellar, and shallow again in spring?

The hardwood triangular block system, illustrated on page 49, fig. 18 of Langstroth's work, published in London in 1865, would work on these projections. I use them with the portico hive, for which they were originally intended by the inventor. I think the portico is worth a little extra trouble and work, as I consider it a comfort and shelter on rainy and windy days, also a little protection from cold.

There is one more objection to the bottom board before I forget it. It is the projecting strips along on the bottom side which make it unsteady in piling them up in the cellar, or on wagons or sleighs, (a smooth bottom is always steady on a flat surface) and they require more lumber and machinery in their manufacture.

As you may be wiring frames, I will mention one little thing in regard to a little turn in the wire I saw in a previous cut

of a frame. The wire was turned around the corner and tacked to the edge of the end bar. You will find a slight mistake in this latter one, as the edge of an end bar requires scraping oftener than the outer side of bar, and, in doing this, your sharp instrument stops or jumps over the tack and wire, making an incomplete job and taking up more time.

Now, dear sir, if you can get a good idea out of all this jumble of a scribble I shall be well repaid for my time, as you contemplate handling about 600 colonies, you will need about the best you can get, short cuts and all, and then you know you are taking us with you by means of the Review, and, taking a suggestion from the man at the cross-cut saw, who said he did not so much "mind his partner riding on the saw but he didn't like to have him drag his feet," I don't want to drag my feet. Yours truly,

W. HARMER.

[I wish there were more like Bro. Harmer, ready to criticise and suggest in his free but kind manner. Now, about the cover, there *is* a way of cleating the cover at the ends that suits me just as well as a grooved cleat, and it would be of a style that would please Bro. Harmer. It is that of simply nailing the cleat on top of the cover, flush with the end of the cover, driving the nails through and clinching them. With this style the cover may be a trifle shorter, only as long as the hive, and it can be slid on as Bro. Harmer suggests; but, let me say that I don't slide on covers. After a cover has been in use awhile there is sure to be an occasional brace comb attached to its surface, and the top bars will also have brace combs. With such a condition the sliding act is not very agreeable. Yes, the brace combs might be scraped off; but that is something I very seldom do, certainly not in the busy season. However, I know of no objection to making covers in this way, and, if we are to wrap up our hives in the spring, in tarred felt, a cover only as long as the hive is desirable.

Yes, a block above a sawed-out-hand-hole is an advantage in handling hives heavy with honey, but I should certainly wish a hand-hole on the *side* of a hive, as I use that ten times as often as the end-holes. When I pick up a hive I step up behind it, reach down and put a hand, or the finger-ends, in a hand-hole on each side, raise the hive, and rest the back end of the hive against the front of my person, and walk off with the hive. The frames are parallel to the motions made in walking, hence, there is no swinging of the frames. If I took the hive up by the *end*-holes, holding the *side* of the hive against my person, there would be a swinging of the frames at every step I took. I have seen a novice take up a hive in that manner, and there was a "clack," "clack," "clack," of the frames at every step he took.

Very few of my bottom boards have the side-cleats extended out beyond the front of the hive, as shown in the cut last month. Most of the bottom boards were stacked up behind the bees in the cellar, where it was difficult to get at them, and I was obliged to use one that had these side-cleats extending out beyond the front of the hive. These bottom boards were made that way without my ordering them so-made, and I never bothered to saw them off.

Yes, I used the triangular blocks years and years ago, and I know of no more simple and practical manner of controlling the size of an entrance, but, as

years went by, I found that they were used less and less; lying on the ground in front of the hive, kicking about, here and there, and, finally, they found their way into the department that goes with every well regulated apiary—the scrap heap. When set out in the spring, the narrow entrance is used. When the heat of the summer comes on, the bottom boards are turned over, and left so the rest of the season. I put my bees into winter quarters so early that there is no necessity of changing to the shallow entrances. The bottom boards are left off entirely in the cellar. My hives set upon two, square, 2 x 2-inch strips of wood as long as the hive is wide. There are always plenty of these strips about the apiary, and, if I ever find it necessary to contract an entrance, I simply lay one of those long blocks in front of the hive, and shove it along until I have an entrance of the desired size.

In wiring frames, I drive the tacks in the edge of the end bar, simply because it is handier to do so. No picking up of the frame and laying it over the corner of the bench to get something solid to pound upon. As mentioned elsewhere, I seldom scrape off burr-combs, and very, very seldom do I find any upon an end bar. If I did, and wished to scrape them off, the tack and wire would do no harm, as I give them such a whack with the hammer when driving them in, that they sink down even with the surface of the frame.

EDITOR.]



Use of Smoke When Carrying Bees in or Out of the Cellar.

E S MILES.

DEAR FRIEND:— In pursuance with your invitation in the December Review, I am going to "talk bees," with you

awhile today. We had about 140 colonies last spring, and got about 5,000 pounds of comb, and 2,700 of extracted,

all clover and basswood, as there was no fall flow this season or last, which made a good many light colonies. We fed 1,300 pounds of sugar and some honey; and got ours into fair shape; and they seem to be wintering perfectly, thus far. We increased to 170, and purchased a few, and now have about 184 colonies, all in the cellar. We winter in caves; tier the hives up on top of one another, with bottoms off, tops on, and two-inch strips between each two hives. If for any reason we find a light one when putting them in, we take off the cover, and lay five or six, or more, sections of honey directly over the clusters, put two or three thicknesses of burlap over all, leaving the bottom on. As a rule, I think these winter better than those with bottom off and cover on. We are trying 18 or 20 colonies this winter with bottoms on, covers off, and quilts over the frames, with inch-strips between each two hives.

By the way I do not remember of seeing anything in the journals about using smoke in putting bees in, or taking them out of the cellar. Did you ever try it? I consider a smoker about as valuable at putting bees into a cellar, as at any other manipulation. A great many colonies will get pretty well roused up by the change from the outside air to the comparatively warm air of the cave, and when several such are in, the *smell* of the venom gets quite noticeable in a cave, which I think aggravates the trouble considerably. Now, have a good smoker well going, puff smoke all over the floor before putting any bees in, and let the smoker set and "smudge away" till the cellar is about as full of smoke as one can stand to breathe fairly well. This overcomes the smell of the excited bees and also intimidates them so they soon settle down to that peculiar hum that you *know* but I can't *describe*; and, by using the right amount of smoke all the time while putting them in, they can be kept that way, and very few will leave the cluster. If an extra cross one needs more, I do not hesitate to use the smoke directly, and enough to make the

bees go back to the cluster and set up that "hum."

The same holds good at setting-out time. Smoke up the cellar thoroughly before starting to set 'em out, and they won't fly out nearly as bad. I expect, friend H., this is all old to you, but I have often wondered some one didn't say something about it in the papers, if it is generally known and practiced.

DEVELOPING A NON-SWARMING STRAIN OF BEES.

Now, friend H., I want to ask you whether you think it possible to produce a non-swarming strain of bees by select breeding? And, whether you answer yes, or, no, I am going to tell you that I have been at that for five or six years. We have over 100 such colonies. A year ago, we had, I think, 12 swarms from about 138 colonies. This last season we had seven swarms from about 140 colonies. I say "about," because I am going from memory; although we keep a full record with each colony, I am not looking it up just now. These swarms, however, were from other than the non-swarming strain, except two or three; or, in other words, we have not had from this strain altogether more than four or five swarms. We usually put on one shallow extracting super, then, sections. We do not have much trouble, however, with *any* strain swarming, where we run for extracted honey alone. We are expecting to have some more time to devote to the breeding next season, and hope to requeen everything with this strain, and then we shall see what we *shall* see! We raise our queens in queenless colonies, using Doolittle artificial cups and transfer the larvae. The original queen of this strain we purchased of W. Z. H. in the fall of 1896, but we have not been able in the 10 years following to buy anything equal to this stock, though we have bought several dozen from five or six different sources. Those of the J. P. Moore stock, that we got of you about five or six years ago, did not pan out very well.

They were pretty fair gatherers but they did not breed true for me; hybridized too easily, and took to swarming. They were good winterers and built up well in spring though.

Well, friend H., if your subscribers *all* accept your invitation to write a *long* letter, you will be swamped sure; but I trust not *too* many will, and in conclusion

I wish to thank you for the Review, and for your good wishes and good cheer expressed therein. I like your writings about the bees in Northern Mich., only it makes me want to come up there and do likewise, which I guess may never be. So, I wish all yours a happy and prosperous New Year.

DENISON, Iowa., Jan. 2, 1907.



A Sheltered Location May Double the Profits of an Apiary.

HARRY LATHROP.

IT TAKES years and decades to learn some lessons in bee-keeping; and some are not so situated that they can ever settle some questions by means of comparison or other experimentation.

One of the things that I was slow to learn was that there is a great advantage in having an apiary located in a sheltered place. One occupying such a location, for instance, as one of the little pockets so common in the hill country of Southern Wisconsin, may work on for years, not realizing the immense advantage he has over his neighbor whose apiary is situated on the summit of a windy ridge, perhaps only a few miles distant.

Some valley situations are not good on account of a draught causing a passage of wind along certain channels. But a pocket opening into a sheltered valley, and having its opening to the south, makes a very fine place for the location of an apiary. Then, if this sheltered spot furnishes natural pollen in plenty for early spring, and water is handy, the colonies are nearly sure to build up rapidly, even if they are only mere nuclei at the close of winter. I know, for I kept bees in such a place for 17 years, and only realized the advantage after I had estab-

lished another yard in a place not so favored for shelter, but having just as good sources of honey during the white clover and basswood season. The apiary situated on the high and unprotected ground, never increased. The other increased so rapidly that it always bothered me to know how to keep down increase or what to do with my surplus stock.

There is one balance that I have been unable to strike however, and that is to know just how much of the prosperity in the sheltered location was due to the fact that it furnished honey from the autumn flowers, having much low ground on the field, while the other yard lacked in this respect, and the colonies were very apt to be idle during some weeks preceding the end of the season.

In a level country the best means of providing protection is, of course, by planting groves or belts of trees, or leaving such portion of the natural forest as will be necessary. Even with these, tight board fences are an advantage as furnishing nearby protection and making sun reflectors.

In our Wisconsin Bee-Keepers' convention last week, President France advised the members to protect their colonies by

wrapping each hive with tarred paper as soon as it was removed from the cellar. He said such protected hives would have double the amount of brood in them that the unprotected would when warm weather came. A good many will be likely to try this plan, but I do not believe any method of hive protection will compensate for the lack of yard protection. It is after the bee leaves the cluster and the hive entrance that it needs the protection of sheltering trees, fences or wind breaks, and the full benefit of the sun's rays.

At our convention a good deal was said about making experiments along certain lines. It seems to me it would be a fine thing to have this matter of protection so thoroughly tested that it could be told

what per cent. of advantage there is in having a protected yard as compared with a bleak location.

I am so fortunate at present as to have an apiary situated on the north bank of a large river where the sun beats into the sheltered nook or gully in which the apiary is situated, and where the bees have ready access to acres and acres of willow, soft maple, elm, and other early pollen bearing trees. For a drinking place they will go to the edge of the river where the sun shines down on the warm sands and is reflected from the face of a great rocky hill side. If this apiary proves to be as prolific in brood rearing as my old yard, I expect to try the experiment of producing bees for sale.

BRIDGEPORT, Wis., Feb. 15th, 1907.

Editorial

Pollen was gathered here freely the 27th of March—soft maples and pussy willows were in bloom.

Messrs. Facey and Atwater sent articles for this issue, but, for reasons that would require too much space to give, they are not printed this month.

Alvin A. Vinal, of Marshfield Hills, Mass., has been appointed Eastern agent for G. B. Lewis Co. This announcement came too late to add it to the list in the advertisement on page 122.

The Bees were taken from the cellar here at home on March 22nd., all alive and in good condition 100 colonies wintered without the loss of a colony. A postal card from Bro. E. D. Townsend, written that same day, says: "Took the bees from the pits at the Windling yard

today. Every colony alive and in good shape. They are dry and almost free from mold--this is the result of having no spring rains."

Missouri bee-keepers now have a foul brood law, thanks to the energy and perseverance of some of the bee-keepers of that State. The State Board of Agriculture appoints the Inspector, who receives \$4.00 a day and his expenses; \$1,000 being appropriated each year for this purpose.

Advertisements came in to such an extent after the regular advertising pages were printed that the only way to get them in this issue was to leave out the market quotations on the cover, which has been done. Not so very much is "doing" in the honey markets at this time of the year, and no great harm will be done if the quotations do not appear this month

An Upper Entrance, just above the queen excluder, is used by Mr. W. A. Chrysler, of Chatham, Ontario, in the production of extracted honey. He makes the excluder a little longer than the hive, so that it projects and furnishes an alighting board. He says that it relieves the brood nest of the traffic that otherwise must pass through it, and saves the bees from passing through the queen excluder. He also believes that its use has a tendency to prevent swarming. So well-satisfied is he with the arrangement that he is going to use it entirely upon his colonies worked for extracted honey.

Decoy Hives, put up in the woods to catch stray swarms, are an indifferent success in a wooden country, but in the West, in Colorado and California, where timber is scarce, there is no trouble in catching swarms by putting out empty hives. One of my California subscribers, Mr. Roy K. Bishop, writes that if one wishes to start an apiary there it is only necessary to put out some empty hives or boxes, and by the first of June he will be well-started. When I was out in California, and visited Mr. Mendleson, there were three empty hives standing in his wagon shed, or they were empty when put there, but the bees were flying merrily from two of them. In a pile of perhaps 25 hives standing outside, half a dozen were occupied with swarms. When out riding with Mr. Gill in Colorado, we passed a house in the walls of which five swarms had found a home—going in through some crack or knot hole.

Michigan Has a New Inspector of Apiaries

When I accepted the office of Inspector of Apiaries for the State of Michigan, I did it with the feeling that some one else would soon be found to relieve me, that my holding of the office would be only temporary, but many things seemed to conspire to keep me at the work. The time has come, however, when I simply must give it up; in fact, I feel that it

ought to have been done sooner. The publishing of the Review is enough work for any man, and, with the bees that I now have under my care, it is simply impossible to have other duties and do justice to all.

There is, however, one satisfaction in laying down the office, and that is in seeing it pass to the Hon. R. L. Taylor, of Lapeer. If any man in the state has had successful experience with foul brood, it is Mr. Taylor. He has an excellent knowledge of human nature, any amount of tact and persistence, and a calm and judicial manner. It seems to me that he will prove the ideal Inspector.

Shallow Extracting combs, for use in the supers, are praised by Mr. W. A. Chrysler, of Chatham, Ontario. His combs are staple-spaced. There are no staples in the frames, but staples, like double pointed tacks, are driven into the rabbet of the hive, each staple being of such a width as to hold the adjoining frames the correct distance apart. By raising a frame slightly, so that the ends are clear of the staples, the frame can be pressed either way, the same as though there were no staples present. By certain up and down movements, he says he can shake nearly every bee out of a super. The frames may loosen, but will rattle down into their proper places again. He says that he can take off twice as much honey in a given time by this method as by handling a frame at a time, as must be done with a deep frame. Very true, but how about using bee escapes?

Sheltered Locations are of more importance than they have been given credit for in the past. Two experienced men, Messrs. Townsend and Lathrop, give their experience in this issue on this important point. The last two years, here at Flint, my bees have been in a very exposed situation, but I am now making arrangements to locate the apiary a few rods back in a grove of several acres, with the great body of the woods at the north and

west. I shall also try and take advantage of a little hollow, or ravine. One of our yards in Northern Michigan is back some five or six rods in the woods, sheltered by a dense growth of underbrush. This apiary was out in the open last year, but the cellar was built last fall in the new location, and the bees carried to the cellar - and it was a long, hard job, I can tell you. Another yard up north is sheltered by woods on the west and north, perhaps ten rods away, and, in addition, is in a hollow a regular "pot hole." Not a breath of wind can be felt there when a strong breeze is blowing 15 rods away. What might be called the "home-apiary," up north, is not sheltered by trees *close by*, but it is in a valley with high hills upon all sides, except one, and that opening is filled with a forest. Taken all in all, our apiaries are in fairly well sheltered situations. I am satisfied that this is a point not to be overlooked.

Eloquence in writing or speaking is certainly a great talent, but there are other traits equally valuable. To illustrate: I recently attended a public meeting in which two particular men were prominent speakers. Each had been a candidate for a high office in the gift of the State. One had been elected, and the other was the defeated candidate. The latter was an eloquent speaker, holding his audience spellbound, bringing forth laughter or tears at will. The successful candidate was no speaker - didn't claim to be. The next day, in a crowd at the post office, I caught a few words of conversation between two men. One was saying: "I don't see how Brown was ever elected over Jones (fictitious names, of course), and I think any one who heard them speak last night would come to the same conclusion." His companion replied: "Of course, Brown is no speaker, but he *does things*." That remark rang in my ears all day, and I found myself thinking that we had men in our ranks who, at a bee convention, can flood the hall with eloquence at a moment's notice,

and still others who can write column after column with apparently no effort, and then there are men who neither write nor talk with fluency, but they *do things*.

I would not speak disparagingly of eloquence, great things are done with the tongue and the pen, but let the man who has not this gift, remember that it is fully as important to *do things*.

The Hershiser wax press may be a trifle expensive, but I believe it stands at the head of the presses for getting out every last bit of wax. It is different in principle from the others. Here is an illustration of the way in which it works. Let a sponge be saturated with some coloring matter. Dip it in water and give it a squeeze. A large portion of the coloring matter would be washed out. Dip it again into the water and give it another squeeze. Still more is removed. Continue the dipping and squeezing, and, eventually, the sponge will be freed from the coloring matter. The Hershiser press works upon the same plan. It admits hot water to the slumgum; then gives it a squeeze. Then it releases the pressure; then gives a squeeze. Then it releases the slumgum from pressure and admits hot water again, only to give it another squeeze. This process may be continued until less than one per cent. of wax remains.

Many bee-keepers don't realize the amount of wax that is left in slumgum when the wax is rendered by the ordinary methods. Mr. W. L. Coggsball, of York State, is reported to have said, at a recent Canadian convention, that by using the Hershiser press on 20 barrels of slumgum, he had secured 700 pounds of excellent wax. This strikes me as an extreme case, but there is no doubt that large quantities of wax are wasted by the ordinary methods of rendering. Were it not so, Mr. Hershiser and others could not afford to buy slumgum at a cent a pound, pay freight on it, and then make a profit by running it through the Hershiser press.

EXTRACTED DEPARTMENT.

WHAT DO WE REQUIRE IN A BEE ?

An Interesting Review of the Differences In Bees.

To nine bee-keepers out of ten, bees are bees—no great difference in them. Every bee-keeper of large experience with different strains knows that there is a wide difference in many respects, but how very, very few of those who know there is a difference *do* anything about it. At present there are few more fruitful fields for the extensive bee-keeper than that of securing the stock that is best suited to his needs. Of the different ways in which bees may vary, in short, for a thorough review of this whole subject, I remember to have seen nothing better than a short article from Mr. R. F. Holtermann, that appeared in *Gleanings* for March 15th.

Probably in almost every line of live stock found in the class of domestic animals we have ideals mapped out, and then an effort made to breed to that type. In this way we have some, if not all, of our most famous breeds in cattle and sheep. In bees we have not so far been able to control the drone parentage; or if it has been done, as some think, it has not been recognized to any extent. That such control can be secured I believe, but this is a matter which, in my estimation, the governments of our countries should take up, as the work is too expensive for the individual bee-keeper to undertake; and if undertaken, and success attained, others would share the fruit of his thought, labors, and expense. But with all our uncertainty in the direction of controlling the selection of males, when the importance of breeding is more fully recognized, and we can agree and keep before us a definite type, then some breeder will undertake to locate in a section where he will be isolated, say on an open prairie or the like. Or extensive honey producers will club together or pool their orders so as to control the stock from which their breeder shall propagate.

But have we ever agreed on a definite type which we may practically desire? and if not, how shall we find out with the

least trouble if the bee possesses these qualities? Beauty of the bee has been considered, as well as gentleness and tongue reach; but the few who have done this have worked in a more or less disconnected way. There is much more to do, and the need for a more general awakening as to even these points is plainly evident. It is generally admitted that bees vary greatly, for the reason that colonies apparently similar so far as bees are concerned give vastly different results in gathering honey. Can we, by tests, get more accurate information as to what traits shall be kept for breeding, and what weeded out?

One in my own country, and of my own country, recently made the assertion that if the black bees had been selected as carefully as some other varieties they would have made as good showing. I do not think that this gentleman claimed to have much practical knowledge of bees or of work in the apiary, for I think that, when one country is taken with another and time is considered, the black bee has had quite as good a chance to acquit itself with credit as any other variety.

There is no use in beginning with any thing less than the best strains of the best varieties. I do not breed queens for sale, but I have bought hundreds of them, and have even bought from the Arctic Circle.

Bees vary in size much more than the average bee-keeper thinks without actually measuring by scale. I feel sure that I have bees which individually vary in weight thirty-five per cent. We might naturally expect that the larger bee would not only gather the larger load, but would have the strength to press more deeply into the blossoms. We might also hope that it would have a longer tongue reach.

These matters should be the subject of careful tests and experimental work.

Again, bees vary as much constitutionally as do the individuals in other animal families. Some are stronger than others, and can naturally stand more hardship than others.

We have heard that changing the queen appears to check certain diseases. We have heard of starved brood and the death of this in the cell, and in this connection I owe Mr. Wm. McEvoy, inspector of apiaries, thanks for drawing my attention to the great difference in the way in

which one colony feeds the larvae. But I think that certain varieties of bees and strains in them have constitutional weaknesses which tend to earlier death than others.

There is a good deal of dead brood complained of that is not diseased. I have seen some of this in my own colonies, and much of it in the apiaries of others, and I have yet to see any of this form of dead brood in what I call the better strains or varieties of bees. For years I have sought to find it in Carniolan or Italian bees, but failed. It is always found in those strains in which black blood largely predominates. I know of more than one bee-keeper now who is changing the strain of bees to do away with this, and in one case at least doing it after observing this feature in my apiary. I do not say that these varieties of bees prevent foul brood; but if a strain of bee is more strongly constituted it can resist more unfavorable conditions, just as a strong or healthy person can throw off tubercular germs or other infectious diseases when a more feeble person can not. It may be that certain strains of bees are more immune to the disease known as foul brood. Such a strain, too, should winter better, and withstand cold winds in spring and live longer. Longevity is a strong point. It takes three weeks of care, attention, nursing, comb room, and food to produce a bee, be she feebly constituted or robust. If the life-time of a bee is, in the active season, six or eight weeks, and we can have a bee which will live under the same conditions two weeks longer than another, which, from my observations I believe we can, then we have in this point alone a great difference in the amount of honey two colonies can gather under the same conditions.

Some colonies, without robbing, will continue to gather surplus when others are getting no more than is sufficient for their own requirements. I have noticed this particularly at the latter end of a flow. Colonies that appeared to do alike during a good flow would vary greatly in a poor flow. Probable reasons may be given; but how few recognize even the *fact*! Then it is markedly the case that one colony will be bringing in light honey when the other is bringing in dark. In a general way I have noticed this difference between blacks and Italians. Some bees stop breeding almost the moment the honey-flow ceases. Such bees in many districts are difficult to build up in the early part of the season. Others go to the extreme of breeding too long after the flow ceases. The one trait is about as objectionable as the other. Some bees

are easily irritated, and a continual annoyance when handled. Some are made so by improper handling. There was a time when I thought such a bee might have other favorable traits which could not be secured separate from natural irritability; but after more than 25 years experience I know that such is not the case.

It is well known that some bees are more inclined to swarm than others. We can control this to a greater extent than formerly; but it is a dangerous trait for the average bee-keeper to deal with, and this trait must, with all our modern improvements, be a leading consideration in selection. I have colonies of bees which are of about the same spring strength, side by side in the same apiary. Some breed up faster, of course consume more honey in breeding, yet they actually have more surplus honey right along, and therefore do much better work. But too large a percentage, if in the least neglected, for room or ventilation, swarm or get the swarming impulse. Bees should be weighed full and empty, and their loads compared. Efforts should be made to compare the time they take to load. The degree and duration of cold to which they can be subjected, and yet survive, should be tested. The way in which they guard and defend their hive is important.

In some strains or varieties of bees we find frequently the work of the moth larva, while others rarely have such.

The degree to which bees ripen honey under apparently similar conditions appears to vary. J. H. Shaver, Cainsville, Ont., first drew my attention to this. The variation in capping is well known, and important, as is also, to a less degree, the amount of propolis they gather. Take it all in all (and I have enumerated only a few points), there is a large and useful field right here which, in my estimation, experiment stations can best invade and cultivate. Let us, upon these and other points along the same line, set ourselves to thinking seriously, and good to the industry is bound to result.

After we have decided what are the desirable qualities, the manner of securing them is another great problem. I may say this much, however, nothing, or not much, can be accomplished by buying queens here and there year after year. Get the best possible stock, that comes the nearest to your ideal, then practice selection, year after year. I know of nothing better to do.

THOUSANDS OF DOLLARS THROWN AWAY

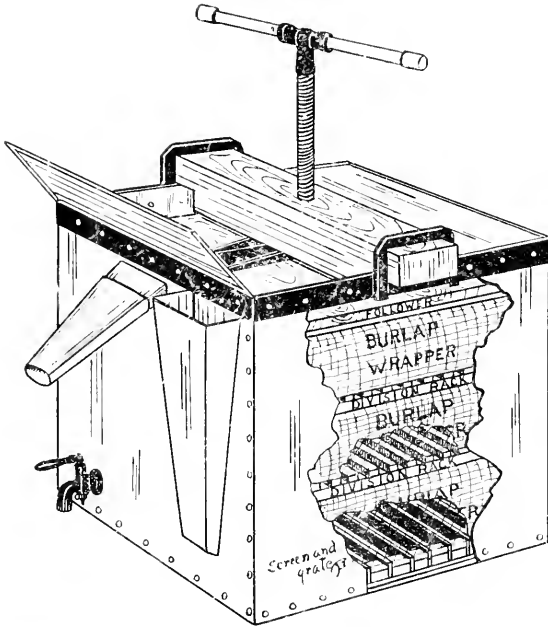
In the shape of good wax in the refuse heaps: which can now be **SAVED** by means of the

Hershiser Wax Press.

We are offering to our customers this year for the first time the Hershiser Wax Press a cut of which is here given. This wax press has just been invented and controlled by the G. B. Lewis Co., we having the exclusive rights. The Hershiser Wax Press is not only the best wax press ever put on the market, but it is an almost perfect device for extracting wax.

We will guarantee it will extract within one per cent. of all the wax contained in the slumgum placed in it, if properly operated.

All the wax presses now in common use will necessarily leave in the slumgum a large amount of wax, the quantity varying from 8 to 25 per cent; in other words, the Hershiser Press is able to get about 7 per cent. of wax out of slumgum after the very best of all other wax extractions has obtained the greatest possible amount of wax from it.



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"IF GOODS ARE WANTED QUICK SEND TO POWDER."

ESTABLISHED 1886.

Every Success Has Its Reason.

By *The Bee Crank.*

I have been successful in the bee-supply business, and I believe I know why.

First of all, I'm a practical bee-man. I know the business from A to Z. I'm as familiar with this subject as the worst bee crank you ever saw.

I am pretty much of a crank on bee culture myself.

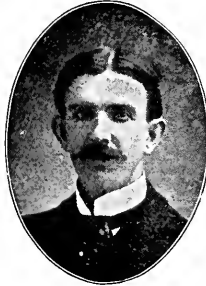
The business I've built up is the result of eighteen years of hustling - 313 days of hard work every year, with close attention to detail and careful consideration of the wants of my patrons.

Some of my customers have been dealing with me all of those eighteen years - most of those who have ever bought any thing from me are on my list of permanent customers.

This, I believe, is because the man who sends me an order is never dis-

appointed. "If Goods are Wanted Quick, Send to Powder." That's good advice. Remember it.

Of course my location has helped me. I'm in the best shipping point in the country, and can save you not only time but MONEY on transportation charges.



I sell Root's goods at Root's prices. Can supply you quickly with the new metal-spaced Hoffman Frames, Danzenbaker Hives, Dovetailed Hives, Section Honey-boxes, Weed-process Comb Foundation, Honey and Wax Extractors, Bee-smokers, Bee-veils,

Powder Honey-jars, or anything else that a bee-keeper might require.

Let me send you my new catalog - it tells you as much as I could on forty full pages like this and it won't cost you a cent, except for the postal you use in writing for it.

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Bee - Keepers
Will save money by
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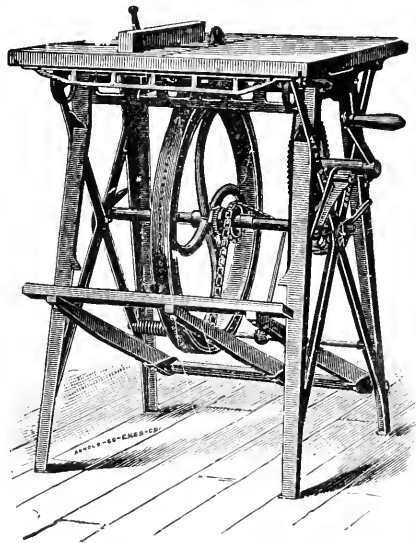
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1-07-12t



Choice Bees for Sale.

My brother and myself will have about 600 colonies of bees under our management the coming season, and to buy cans in which to store all of the honey that we hope they will gather will cost not far from \$200. To secure money for that purpose I have decided to sell a few of the bees here at home—perhaps 25 or 30 colonies.

These bees have been on their summer stands about three weeks. They wintered perfectly—all clean, dry and healthy.

They are all pure Italians; most of the colonies having queens of the Superior Stock. Not a queen will be sent out that would not pass as a breeding queen such as dealers sell in the spring for from \$3.00 to \$5.00 each. The hives are 8-frame Langstroth, have been used only two years, and are painted with two good coats of white paint. The combs are all built from full sheets of foundation and wired at that. In fact, the stocks are strictly first-class in every respect could not be better and the price is \$6.00 per colony, no more and no less, even if one man should take the whole lot.

I am ready to accept and book orders accompanied by the cash, and when have received orders for 30 colonies, this advertisement will be discontinued, and no more orders accepted. The bees will be shipped by express, about fruit-bloom time, and safe arrival guaranteed in every respect.

If you wish to stock your apiary with a strain of bees that has no superior, here is a chance to get a tested queen, already introduced, in a full colony, whereby she can be shipped without injury, early in the season, all at moderate price.

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Try our Northern bred queens. Three-banded and Golden Italians. Untested, 76 cts.; tested \$1.25. Hardy and good honey gatherers. We want your orders and will guarantee safe arrival and satisfaction. Write for circular to 4-07-1f

MENNIE & FENTON.

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BEEES AND QUEENS.

Three and five-banded Italians, and silver gray Carniolans. Untested queens, 75 cts each; tested, \$1.00. One-frame nucleus, without queen, 75 cts.; two-frame, \$1.25. Special prices on large orders.

C. B. BANKSTON & CO., San Antonio, Texas.

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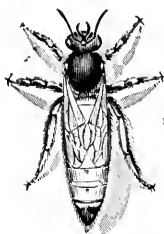
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GOLDEN
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We have a complete stock of Root's Goods and can save you time and freight expense. We would like to quote you prices on the goods you need. We sell the Danz. hive, the Comb Honey hive, H. H. HUNT & SON, Redford, Michigan.

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We pay 32c in cash, or 35c in trade, per lb., delivered here for

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are still in effect. We furnish **EVERYTHING** needed in practical Bee-Culture, at lowest prices. We make the

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The most practical, UP-TO-DATE hives are the

MASSIE HIVES

We make them. Have you read our Catalog?

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are not excelled for durability, fine workmanship, and practical utility.

Have you seen our latest improved Champion Smoker? If not, you miss it until you get one.

Satisfaction guaranteed or money back. Address,

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Marshfield Mfg Co, Wis., Beeware, Hives, Sections, Shipping Cases and all kinds of Bee Supplies—no better made. We have been selling Marshfield Beeware for three years, and using the same ourselves, and can say that there is no better in the world. We have the best shipping center in Canada. C. P. Ry., M. C. Ry. and G. T. Ry., three express companies—Dominion, American and Canadian. Sample of sections sent free. Send for a sample before you buy. We can save you money on Beeware. We buy in carload lots and can give you the lowest prices on No. 1 Beeware Wax wanted. N. H. SMITH, Tilbury, Ont. Lock Box A.

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P. S. Eggs from imported trio of Black Minorcas costing \$78.00, \$2.00 for 15 Eggs; also two B. P. Rock costing \$50.00, Eggs at same price. Warranted to hatch well and safe in your place.

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"Hall's Hobby" beats them all, they will fit your home-made hive. All about them and a little besides. Your name on a postal please. 12-6-11 D. S. HALL, So. Cabot, Vt

Queens

Moore's Long Tongue and Golden. Fine, select, untested, \$1.; six, \$5; twelve, \$9. Tested, \$1.50; six \$8. Breeders, \$3.50. Safe arrival guaranteed W. H. HILLS, Orange, Calif.

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We are enlarging our **FACTORY** and all of those goods have to be moved. If you want anything in your apiary, you will do well by writing us at once, and we will make you **DELIVERED PRICES** that will surprise you. Our stock is all new and up-to-date, we do not keep poor or second grade goods. Our sizes are standard. Quality and finish cannot be beat by anyone. We make anything used in the apiary and can save you **money** and delay at any time of the season. Give us a trial and be convinced. We aim to please our customers and guarantee all our goods to give entire satisfaction or refund the money.

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Until May 1st, free, a year's subscription to a Bee Journal with an order of \$15.00 or over. Dovetailed Hives and one-piece Sections by the carload; special prices made to small dealers. Dittmer's Foundation, wholesale and retail.

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LAWS' ITALIAN and HOLY LAND QUEENS. Plenty of fine queens of the best strains on earth and with these I am catering to a scientific trade. Are you in it? Or are you interested.

**Laws' Leather and Golden Italians,
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These three, no more. The following prices are as low as consistent with good queens. Un-tested, 90c; per dozen, \$8.00; tested \$1.00; per dozen, \$10. Breeders, the very best of either race, \$3.00 each.

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—If you are going to—

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write to the editor of the Review. He has a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

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Cash Paid for Beeswax

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ADVANCED Bee-Culture

The Most Practical Experience.

Now that I have yielded to the temptation to give letters from pleased readers of *ADVANCED BEE CULTURE*, I find that the temptation grows upon me. Here is the last letter that I have received of that class.

EVANSVILLE, Ind., Mar. 12, 1907.

Friend Hutchinson :—

Your book *ADVANCED BEE CULTURE*, came duly to hand, and I can say that it certainly deserves its name. It goes over the ground thoroughly, yet in such a way that a child of ordinary intelligence can understand it.

It ought to be in the hands of the novice, the amateur, and, above all things, in the hands of the specialist.

I have read almost every book on apiculture, and I can honestly say that it is the most practical work work on the subject that I have ever read.

I can easily see that its author gained *his* knowledge "through the ends of his fingers," instead of by theorizing.

Sincerely yours, Julius Happel.

Advanced Bee Culture is a book of 230 pages, the size of the *Review*, profusely illustrated, beautifully printed, and substantially bound. The price is \$1.20; or the *Review* one year and the book for only \$2.00.

W. Z. HUTCHINSON,
FLINT, MICH.

MARSHFIELD GOODS

are made right in the timber country, and we have the best facilities for shipping; direct, quick and low rates. Sections are made of the best young baswood timber, and perfect.

Hives and Shipping Cases are dandies.

Ask for our catalogue of supplies, free. ❁ ❁ ❁

Marshfield Mfg. Co.

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No Fish-Bone

Is apparent in combhoney when the Van Deusen, flat - bottom foundation is used. This style of foundation allows the making of a more uniform article, having a *very thin* base, with the surplus wax in the side - walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarceily be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen *wired*.

Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,
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Why do thousands of Bee-Keepers prefer it to other makes? Because the bees like it best and accept it more readily.

DITTMER'S PROCESS IS DITTMER'S

it stands on it's OWN NAME and it's OWN FOUNDATION, to which alone it owes it's reputation and merits.

We are now ready to make prices for next season, for WORKING WAX for CASH and for full line of supplies.

Wholesale and Retail.

Free Catalogue and Samples.

Gus Dittmer,
Augusta, Wisconsin.

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WILL BE FOUND IN

THE AMERICAN BEE-KEEPER FOR 1907

It is profusely illustrated and enlarged and contains only articles of the most practical as well as scientific nature. A special corps of the best writers has been engaged. The editors are Harry E. Hill and Arthur C. Miller, than whom there are no more practical or experienced Bee-Keepers in this country. We have published the American Bee-Keeper continually and regularly since 1890.

Regular subscription price 50c a year. One year to new subscribers 25c, three years for \$1.00.

Send for sample copy and our new illustrated price-list of

Bee Supplies of all Kinds.

Guaranteed highest quality at lowest price.

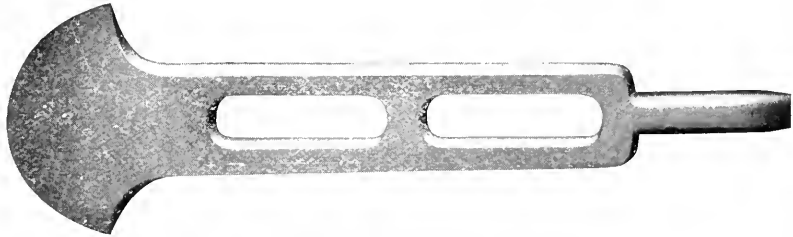
The W. T. Falconer Mfg.
Company,

JAMESTOWN, N. Y.

Established 25 years.

Something New = The Ideal Hive-Tool

Bee-keepers have long needed a Tool with which to work among the hives during the bee-season. The Tool shown here was invented by Wm. Muench, a Minnesota bee-keeper, some years ago, but it was not on the market before. We have lately bought this Tool, and all rights, from Mr. Muench's widow, and have had the first lot made. They are ready for delivery now.



(This picture is exactly one-half the size.)

DESCRIPTION.—The Ideal Hive-Tool is made of high-grade malleable iron, much like wrought iron, $8\frac{1}{4}$ inches long. The middle part is 1-16 inches wide and $17\text{-}32$ thick. The smaller end is $1\frac{3}{4}$ inches long, $\frac{1}{4}$ inch wide, and $7\text{-}32$ thick, ending like a screw-driver. The larger end is wedge-shaped, having a sharp semi-circular edge, making it almost perfect for prying up covers, supers, etc., as it does not mar the wood.

What Dr. Miller and Miss Wilson Say of It:

In the first edition (1903) of Dr. Miller's "Forty Years Among the Bees," page 58, he says: "Of all the hive tools I have tried, I like best the Muench tool." On Jan. 7, 1907, he wrote us saying he thought "just as much of the tool as ever."

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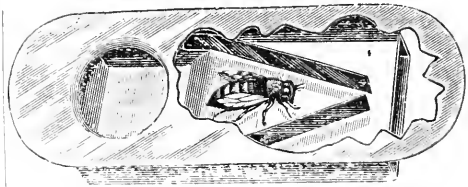
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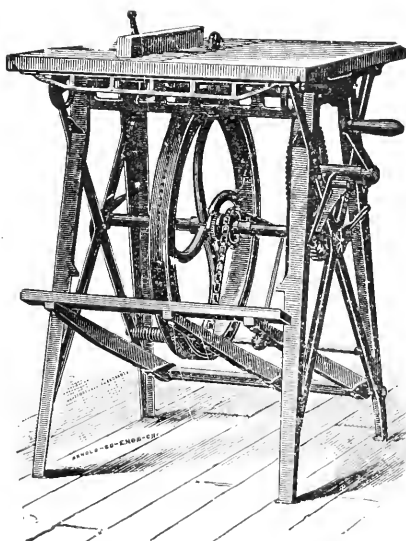
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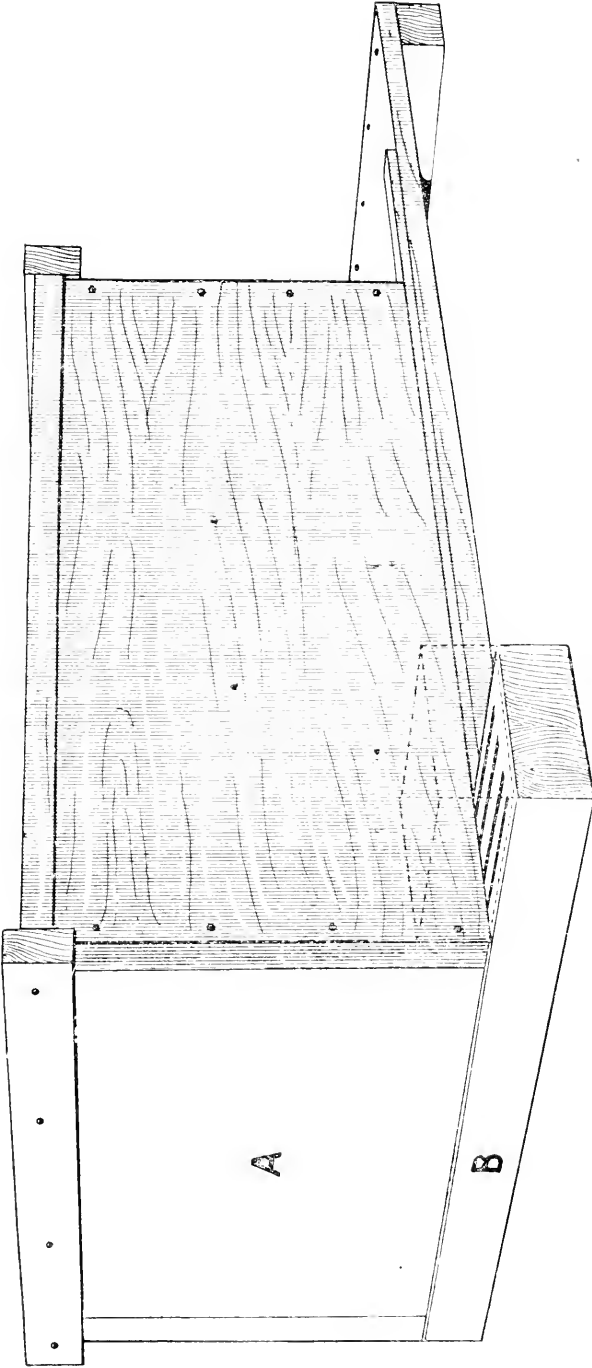
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Bee Hive Arranged for Feeding with a Bottom Feeder.

A is the back end of the hive. B is the feeder in position. The dotted lines indicate the block used for covering that portion of the feeder where the feed is poured in.

The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

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W. Z. HUTCHINSON, EDITOR AND PUBLISHER.

VOL. XX. FLINT, MICHIGAN, MAY. 15, 1907. NO. 5

When the Spring Feeding of Bees is an Advantage.

W. Z. HUTCHINSON.

IT is possible to have a good flow of honey, and yet secure no surplus. If the bees are weak in the spring, and the white clover harvest is early and short, it simply puts the colonies in good trim; then, if basswood furnishes no honey, the season is practically a failure, when it need not have been had the bees been strong early in the season. How to have colonies strong in numbers at the opening of the harvest is well worthy of consideration.

The foregoing was the opening paragraph in my article last month. I then said: "Aside from food in abundance, *warmth* is the one great thing needed to promote *safe*, early breeding." I then went on to show how to secure this needed warmth by protecting the hive with tarred felt. I will now take up the question of food.

Mr. E. D. Townsend uttered a great truth when he said that the foundation of

a honey crop lies in "having a colony rich in stores for a period of six weeks previous to the main honey flow." The bees seem to be able to take an inventory of the stock on hand, and then govern their operations accordingly. With two or three good solid combs of honey back next to the sides of the hives, the bees don't seem to hesitate to go ahead and rear brood. I presume that sealed honey in the hive does not have the stimulating effect of liquid feed given a colony from a feeder; and, early in the season it is just as well not to have this stimulative effect. In this matter of early breeding, it is well to make haste slowly. The hives warmly packed and supplied with abundance of sealed stores, furnish all of the stimulation needed until after fruit bloom is over in this part of the country. If Mr. Townsend uttered a great truth when he said abundance of food previous to the harvest laid the foundation of a honey crop, then

M. A. Gill uttered another great truth when he said that the majority of bee-keepers begin feeding too early and quit too soon.

After the close of a honey harvest, or at the end of the season, a great many colonies have enough honey to carry them through to the opening of the coming season of the next year, and a great many do not have enough. Most colonies will have enough to carry them through the winter, but many will be lacking in stores for rearing bees in the spring, unless they are fed. Shall this feeding be done in the fall, or in the spring? With only one apiary, and that at home, it seems as though it did not make any great difference. If there is any preference, I think it would be in favor of spring-feeding, on account of the stimulating effect. Where there are several apiaries, and widely scattered, it is almost impossible to visit them frequently and feed in such a manner as to bring about a stimulating effect similar to that from a honey flow. Cold weather may also prevent feeding in the spring until it is so late that some colonies starve, or slack up in breeding from a lack of stores. For these reasons I should favor the feeding of the bees in the fall until each colony had at least 25 pounds of stores, and this for cellar-wintering. This amount will certainly carry any colony through to the beginning of the next honey season. There will be some equalization of stores needed in the spring, as some colonies consume much more honey in winter than others consume.

In this locality, I am satisfied that much may be gained by feeding all colonies between fruit-bloom and the opening of the flow from clover. I have reference here to a home-apiary, or one that can be visited readily once in two or three days. In this part of Michigan there is a dearth of honey at this time that lasts from two to four weeks. Even if there is honey in the hive, the bees slack up breeding; that, too, at just the time when they ought to be rearing the workers that will store the surplus from the coming clover harvest.

It is not necessary to feed a large amount of syrup at this time. Five pounds to the colony ought to be plenty, unless the colonies are decidedly lacking in stores.

For feeders for this purpose, I know of nothing better than the Alexander feeder shown in the frontispiece. It is simply a piece of scantling, with deep grooves dug in its upper surface by means of a cutter head or a wabbling saw. It is tacked to the back end of the bottom board, its upper surface kept level with the upper surface of the bottom board. The hive is drawn back until its back edge is even with the back edge of the feeder. The feeder is then all covered by the hive, except about four inches that projects beyond the side of the hive. This projection allows the filling of the feeder from the outside without disturbing the hive. A block is then laid over the projecting end. This keeps out robber bees, or the storm. To keep the feeder snug up against the hive, use a crate staple at each back corner of the hive, driving one prong into the feeder, and the other into the hive. The illustration shows the feeder made of 2x4 scantling, but I am having 450 made this spring out of 2x6 scantling. The only object in making them wider is that they will hold more. They will then be more desirable for use in feeding large quantities in the fall. Before using the feeders I dip them in hot, boiled, linseed oil. This prevents their shrinking and swelling and chchling.

To prepare the feed I use a ten-gallon can with a honey gate at the bottom. I fill it about two-thirds full of water and then stir in sugar until no more will dissolve. The can will then be about full. To carry the feed to the bees I use a sprinkling can with the rose removed. Go to a colony, remove the block, pour in the feed until the feeder is nearly full, replace the block, and go to the next hive. Simply for stimulative purposes, a pint of such syrup once in two or three days is sufficient.

FLINT, Mich., April 11, 1907.

The Chantry Queen Cage for Use in Out-Apiaries.

E. F. ATWATER.

IN spite of the many methods of introducing queens, the woods being full of "infallible methods" which are not infallible, methods by which it is "impossible to lose a queen," yet losses occur, and, to minimize losses by any given method, too much time and attention is required especially for out yards in an extensive business.

Even a long-time expert, Mr. E. W. Alexander, has told of the unreliability of most of the methods known. When I had only a few bees, I was very successful with Dr. Miller's original cage, as I was then able to give the bees more attention, and to establish conditions favorable to success. A few years later, I enjoyed a visit from my friend and early instructor in bee-keeping, Mr. Chantry, and at that time I was given one of his improved cages, with the best caging *principle* yet known.

I made several dozen such cages and used them with unusual success for two seasons; but the past two seasons I had no better success than with the Miller or the Benton cage. Why? One fault of the Chantry cage is that occasionally a queen is so "stupid" that she cannot find the way out of the cage when the candy is gone, as the passage is not quite so direct as in the Miller or the Benton cages.

During the past season I received a good many queens by mail, and, owing to the rush of work, many of them were introduced in the mailing cages. You know that the authorities say that only one queen in fifty is usually lost, using the mailing cage for introducing. Nearly all the cages had a bit of cardboard over the candy.

YOUNG BEES MORE LIKELY TO ACCEPT A QUEEN.

To receive most of these queens, a few frames of brood and bees were put in a hive on a new stand, and the cage suspended between the combs—the old bees go back to the old stand, and the young bees are more willing to accept a queen.

With some, the bit of card-board was torn off, giving the bees immediate access to the candy. Within a week or ten days, we examined the colonies or nuclei so prepared. Some of the queens were out and laying, some were out and gone, others had not gnawed the card-board, and a few had not yet eaten through the candy. A few had eaten out the candy, but the $\frac{3}{8}$ hole in the end of the cage was not bored *clean*, so the queen had not escaped.

A POINT TO QUEEN CAGE MAKERS.

Here is a point for some breeders to mend—be *sure* that the $\frac{3}{8}$ hole in the end of the cage is bored *clean* and large enough so that the queen can easily pass out when the candy is eaten away.

One choice tested queen was introduced by the usually safe though rather cumbersome Massie "infallible" method of direct introduction, but in the latter stages of the process she was killed. Though as nearly safe as any method, we don't like to go to so much trouble to introduce the average queen its out of the question in out yards.

During the past season I do not remember that any queen introduced with tobacco smoke, was killed.

A select tested queen was caged in a comb cage, with a tube outlet on the Chantry principle. On returning a few

days later she was laying—no, *lying*, on the lower wall of the cage dead.

During the past season we enjoyed the best honey flow that we ever knew; during 1905 we experienced our worst failure, and in both instances an unusually large per cent. of queens were lost in introducing.

Perhaps Mr. Chantry will not object if I illustrate and describe his cage.

THE CONSTRUCTION OF THE CHANTRY CAGE.

The cage is made from a pine block $\frac{5}{8}$ thick, $2\frac{1}{2}$ inches wide and $3\frac{1}{2}$ inches long. In a diagonal line, from corner to corner, three inch-holes are bored with a

$\frac{3}{8}$ hole is packed full of candy, and the inch-hole that it intersects is filled perhaps $\frac{1}{3}$ full of candy.

The queen is put into the cage by slipping back the slide, when the cage is hung between two combs in a cluster of bees. In a day or two the bees will eat out the candy through the bit of excluding zinc, and gain access to the queen, but the queen can not yet escape. In perhaps two days more the bees will have eaten out the rest of the candy, thus releasing the queen through the open end of the $\frac{3}{8}$ hole. In the meantime, a great many bees have been in and out of the cage, through the bit of



The Chantry Introducing Cage.

The cut at the right is a sectional view, showing cage sliced down through the middle, and each half turned back.

Foerstnor bit. The first hole at one corner is bored clear through, and so near the edge of the wood that an opening is left in the edge of the cage. The other two holes are bored not quite through. The opening in the cage made by boring the first hole is covered by a bit of wire cloth. A slide of wood made from a piece of section box covers the entire lot of holes. Lengthwise of the cage, along the edge opposite to the bit of wire cloth, is bored a $\frac{3}{8}$ hole the whole length of the cage; this hole intersecting the inch-hole that was bored nearest that edge of the cage. A bit of queen-excluding zinc, with only one opening, is nailed over the end of the $\frac{3}{8}$ hole that is nearest to the inch-hole that it intersects. This long,

queen-excluder, and when the queen does gain her liberty, neither she nor the bees are excited.

MERIDIAN, Idaho, Feb. 10, 1907.

[Several years ago I successfully introduced a large number of queens by using a cage that embodied the same principle as the Chantry cage. That is, it allowed the bees to have access to the queen before she was released, but it was not automatic in its action, as is the case with the Chantry cage. It is a curious fact that bees will not attack a queen when they have crawled into the cage where she is confined, and in this way the queen and bees become acquainted before she is actually released.—
EDITOR.]

Spring Diagnosis and Management in Out-apiaries.

M. V. FACEY.

ABOUT one week after I set my bees out in the spring, I make my first round of my bee yards. I want warm days for this round—bright and sunny if possible. By this time nearly all hives having good queens will have larvae or eggs in the hive. All others, unless there is a special reason for the conditions, may be considered queenless; or, if not queenless, as having a worthless queen. From such a colony I remove one-half, or more, if it can stand it, of the combs. I then go to the nearest colony that can use to good advantage the amount of bees in the queenless colony, and remove one-half the combs from this colony also; but place the combs left in the hive on the *opposite* side of the hive, as compared with the first one. I then place the queenless colony above the hive so prepared, and on my next round I place the combs down, carefully, so as to disturb the bees as little as possible, to the lower hive. United in this way there is never any fighting. Sometimes, however, when I am in a hurry, I remove the combs as above, then leave them for 10 or 15 minutes to allow bees to cluster and place together *immediately*, with each lot of bees on their own frames and on their own side of the hive. A union made suddenly in this way is *usually* satisfactory, but now and then there is some loss of bees, especially if no honey is coming in. The work need occupy only a few minutes to manipulate the colonies as above, and in case but little stores are coming in, *it must not* occupy more than a few minutes. It is hardly necessary to tell a bee-keeper that all work inside a colony of bees *must* be done as expeditiously as possible, either

when the weather is cool or when there is any danger of robbing.

TREATMENT OF WEAK COLONIES.

Early in my bee-keeping experience I often doubled up my weak colonies in the spring, but unless one of them is queenless, I hardly ever do so now. The bees in a colony weak on account of winter losses are generally more feeble than in the strong colonies, and, therefore, when a number of weak colonies, whether two, or more, are united the queen is stimulated to rapid brood rearing, the bees are likely to die off quite rapidly; and before there are young bees to take the place of the old ones, the bees may have to so contract their cluster as to expose the outer edges of their brood nest and the death of the colony is often the result. In this way a hive of enfeebled bees united with a weak colony of stronger bees are often a real detriment to them.

Where I find a weak colony on my first trip after taking them out of winter quarters, I contract it so as to rather crowd the bees, and, at the same time, I give them a good frame of honey, if they should be short, from a stronger colony. I then close the hive as snugly as possible, and also contract the entrance so only two or three can pass at once, and then leave them. Having only a few combs, the queen cannot extend the brood nest greatly; and, having an excess of bees, such frames as they *have* are usually well filled with well-cared-for brood; and, before the old bees have dwindled so as to endanger the brood, the young bees are hatching, and the safety of the colony assured. Such colonies can usually be

built up so as to be ready for business at the commencement of the surplus honey; but, if there is any reason to fear that they may not be, after the weather has become warm and settled and the colonies are all well-stocked with young bees, it is quite an easy matter to build them up as we please.

OPEN-AIR FEEDING IN THE SPRING.

On this round I also look after their stores. I equalize the stores in the hives; and this does not need to take over an hour, or about that, to the yard; and then if honey is not coming in, and I decide that they need feeding, I mix up granulated sugar and water, between one-third and one-half part by measure of sugar and one-half to two-thirds water, stir up cold and feed this in some handy and sheltered spot near the yard where the bees will fly to and from the feed, but do not need to expose themselves. In the early spring I find bees will take their feed better in this way than in any other, they are less inclined to rob, and, with me, they have built up better.

There is the fear with a great many that with out-door feeding, their neighbors' bees may get the benefit, but in early spring feeding bees do not seem to go far after sugar syrup; and, even in summer, they do not do so.

I had two lots of bees for awhile only a little over a mile apart, with one fed and the other not, and still the latter did not visit the feed of the first. As a rule, however, my bees are sufficiently apart from all others so that there could be very little loss from this source. The amount fed may run anywhere from one pound per colony to six pounds, according to their needs. If they should possibly need over six pounds, it is better to pass around again in eight or ten days' time and give them what additional amount they may require, but I have never had bees require over six pounds. For these outside feeders I have found nothing better than the large wooden candy pails with plenty of floats in them, and a

bridge leading to the top. This last may not seem necessary, but it lessens the number of lost bees, of which there are a very few, and does not cost much time and no expense. These feeders should be protected from the weather. Where only an occasional colony is to be fed I prefer a division board feeder, slightly cut down on the side next the bees, or a feeder which permits of removal being attached to the back part of the hive.

OBJECTIONS TO THE ALEXANDER FEEDER.

My objections to the Alexander feeder are two: First, I prefer to have my hives raised only about an inch or so from the ground, with a strip of inch board under the bottom board at the rear, and a board passing under the bottom board in the front and projecting some distance in front of the hive; and second I do not like any permanent attachment of the kind added to my bottom boards as it would interfere in many ways with my manner of handling my bees. I am aware that the majority of bee-keepers use hive stands, and think them indispensable, and perhaps in many Southern localities they may be, but I have discontinued their use with an advantage both in handling and in results. I have them just high enough to allow a circulation of air under the bottom board.

SYSTEMATIZE AND SIMPLIFY.

One of the first things to be learned in establishing a system of out-apiaries, is to *systemize* and *simplify* all our work as much as possible. Arrange all your work and determine the frequency of your visits to your yards, before the commencement of your work in the spring, and then follow out your plan of work *strictly*. To be able to do this successfully you will have to be an experienced and well-versed bee-keeper; and, even then, it is often wiser to start with only one or two out-apiaries, and then increase the number as you gain experience. After you have become thoroughly familiar with this style of bee-keeping you will realize that bees in an out yard will net you quite as much surplus as those in a home yard.

If your yards are conveniently located, the regular visits, after the first visit in the spring, should be about every eight or nine days. On the first and second visits, putting your bees in order, there will be very little to be done, as about all there is to keep track of is their stores. If the weather has been unfavorable some colonies will need feeding, but if it has been favorable there may be nothing done. I look at a few of the weaker and lighter colonies to ascertain something of their food needs, and brood conditions; and if I find any of them in need of stores I supply them; but the great majority of the hives I do not even open. I just pass along and estimate conditions from the conduct and appearance of the bees. A very accurate idea of their condition may be obtained quickly in this way. On these two trips, ten hours ought to be sufficient, under ordinary conditions, for at least 500 colonies of bees. I especially avoid handling combs or opening hives, except where absolutely necessary, during those two trips, as the bees need all the heat obtainable, and any operation causing any loss of heat should be discouraged.

GIVING SURPLUS ROOM.

The third trip, taking about three or three and one-half days, comes in the midst of the dandelion bloom. Honey is coming in freely, and many of the colonies are becoming crowded with bees, and on these I put on second stories which the bees generally occupy and fill at once. Honey now secured from dandelion comes in very nicely for use during the scant times just preceding the clover harvest. There will be many hives very nearly full of bees which will leave you in doubt as to whether they should have a second story or not. In such cases you will remove the cover, look at a frame or two of brood in the centre of the colony, and also a frame or two somewhat to one side, and if a large share of the remaining brood is capped, you will put on your super. If most of the brood is in the larvae state, I do not give them additional room until my next trip. After opening

a few colonies of this class and ascertaining the advancement of the brood and condition of the brood nest, you can readily diagnose the remainder by simply raising the cover and taking a look at their condition from above. If they have already filled, or nearly filled, the available room in their hive with honey, combs filled or nearly filled with honey and free of brood may be moved to the upper story, and frames of empty comb supplied in their place, but be sure and not interfere with or spread the brood nest any, as the surplus hive will draw from them all the heat they can spare.

Brood will now be hatching in the contracted hives, and many of them can take an additional frame or two, but I like to put them next to the division board. Treated as I have recommended very few colonies will be troubled with spring dwindling; but even where it does happen, I seldom draw from a strong colony.

WHY STRENGTHENING WEAK COLONIES IS UNPROFITABLE.

Where bees in the spring have their vitality so weakened that they persist in dying off in spite of all we can do for them, it is both economy of time and economy of bees to give them their way. We can only strengthen them by giving them either hatching brood or bees at a time when every colony can utilize to the very best advantage all the bees or hatching brood it may have; and, further, after we have given the invalid colony a card of hatching brood the bees will often leave the young larvae on the outer edges of the comb poorly cared for or utterly neglected.

The loss, however, from spring dwindling is very small with me, amounting to only about one per cent, which is not nearly so much as it was when I *fussed* with them.

As we extend our out-yards we learn to handle our colonies more and our frames less. A glance at the entrance, and a look at the bees beneath the cover, will give us a very accurate idea of the condition of a colony. It is on such a diag-

nosis that I put on all my supers; merely looking at a colony here and there where I may have a slight doubt. In the same way you can readily ascertain whether a colony may be in need of stores, or determine the queenless ones. In the swarming season you can generally determine the colonies about ready to swarm by the same method. If I am buying bees, and given my selection in a yard, I select the colonies I buy in precisely the same way, and I know of no way I could make better selections. But it all requires study and close observation, and each of us must learn all these things for himself. We can get hints from others, the line of work and observation may be pointed out, but, after that, we must assimilate and make a part of ourselves what we receive, and if we desire the greatest success all we can get from others should be fitted into or moulded with our own individuality.

DROP "FUSSING" WHEN RUNNING OUT-APIARIES

In handling bees in out-apiaries we soon learn to drop all *fussing*.

Instead of spending half an hour on a single colony, we do the same amount of work for half a dozen colonies in the same time. The question may be asked, is it as well done? In answer I would say it is *better* done, with larger crops, and better results in every way, but it requires a very intimate knowledge of the economy of the hive; it also requires experience and close observation; but when you have acquired the knowledge and experience it means that the bees are perfectly under your control; and this means that you are no longer confined to one or two ways of doing anything, but you can do the same thing in a dozen ways, quickly, and, as a matter of course, and yet be able to forecast the direct result of your work almost to a day, directly up to the time you next visit your bees; and, in this way, visiting my bees every eight or nine days, my orders to the people where my bees are located are to *pay no attention to them whatever*, and I can take a day off at almost any time, except it be during

the surplus season, and when Sunday comes I am always entirely free. The only season when I am greatly rushed is the honey season, and then I, or rather we, have to *hustle*.

Dandelion is still in bloom at the time when I make my next visit, and the bees quite busy. At this time nearly all uncontracted hives will need second stories, and most of those having second stories before will require third stories, and nearly all of the contracted hives can be filled out with frames of empty combs. At this time if some of them are too weak to permit the hive to be filled with frames of comb a frame or two of rapidly hatching brood may be given them with very little detriment to the colony from which the brood may be taken, and with the result of transforming the weak colony into a very fair one. This could not be wisely done earlier in the season, but *now* the weather is becoming quite warm, and any ordinary draft like that on one of the stronger colonies of bees is not noticed.

In many localities there is a scarcity of honey for a while preceding the white clover harvest, and, as bees are breeding heavily now, they may, in some seasons, require feeding to prevent a check in their development. In such cases they should be fed a heavily diluted honey. Do not, however, *buy* honey for this purpose, but save some of your cheapest grades of honey during the previous season for the purpose. If you have no honey of this kind you will feed a thin sugar syrup, but you will only feed sufficient for their needs, for in case it is stored, some of it is liable to be passed into the surplus, and of this we cannot be too careful.

PRESTON, MINN., Mar., 19, 1907.

[I agree with Mr. Facey that, as a rule, not much honey is lost in open air feeding by its being carried away by neighboring bees. I think the greatest objection to this method of feeding is that the colonies greatly in need of feed, often get the least. Then, too, there is often a spell of cool weather lasting for several days, when bees won't visit feeders in the open air,

but will take feed from an inside feeder. Unless some of the colonies were very short of stores this would not be a serious objection, unless we were feeding for the purpose of stimulation.

The use of the Alexander feeder does not necessitate the raising of the hives from the ground. I think that nearly all bottom boards have a cleat at the back end to prevent warping, and this cleat is usually about two inches wide. The Alexander feeder is only two inches deep, and is tacked to the back end of the bottom board, the top of the feeder level with the bottom board (see frontispiece), hence it will be seen that the use of the feeder does not call for any elevation of the hive above its ordinary height.

I have tried open-air feeding, the Hed-

don feeder, the Miller, and the Alexander, and decidedly prefer the latter. It is only the work of a moment to put it in place or to remove it. I agree with Bro. Facey that I should not wish any such thing attached to the bottom board all through the season, but I take them off when the spring feeding is over. To remove it all that is necessary is to slide the hive ahead, back to its original position, then draw out the two slim wire nails that were used to attach it to the hive. I use a pair of pliers to pull out the nails. It certainly does not take more than half a minute to remove the feeder from a hive.

I willingly admit that outside feeding is the least trouble of any method, and if every colony would get its just dues, I should favor that kind of feeding.—EDITOR.]



Helpful Hints in Extensive Bee-Keeping.

E. D. TOWNSEND.

FOR several years we have been having good results by putting our upper stories on early. Two or three weeks previous to the clover flow, our strong, and moderately strong, colonies are given their upper stories. Success lies in giving the bees abundance of room, comb room. Give them their second story, without queen excluders, before they ever think of swarming. Here lies much of the secret of preventing swarming. If bees are strong any time during the last half of May, give them a second story. Remember, if a colony once acquires the swarming fever, it always swarms, with this let-alone system that I am about to describe. So you see how important it is to take every precaution to prevent the bees from acquiring the swarming fever,

previous to the opening of the honey season.

If we can get our bees well into the honey season without any thought of swarming, with plenty of empty combs at our disposal, we have no particular fear of swarming. Although, we have an occasional season when the bees seem disposed to swarm more than usual, we soon "get on to" these swarming seasons, then the only thing to do, is to see that all colonies have a little more room than usual. It is not my intention to give the impression that the bees swarm so excessively some seasons as to make them unprofitable. Far from it; neither could I make any one believe there would be as much honey where many swarms issued, and went to the woods.

WHY SUPERS OUGHT TO BE PUT ON EARLY.

It might not be out of place here to mention that the last season we had bees in Clinton Co., was one of these swarming seasons, and we took a fairly good crop, and was down there only four times during the season. In this case there were practically no swarms hived; what issued went to the woods. One thing that made this yard swarm more than usual was that our visit to put on upper stories was put off until the honey season was open. This was a bad move; as its bees were packed in their winter quarters all this time. This yard wintered well that season, and had the bees been removed from their chaff packing, and upper stories given the 20th of May, they would without doubt have done much better.

DON'T KEEP THE PACKING ON TOO LATE.

There is an other point, usually overlooked, and that is that a colony of bees that once feels itself just the least bit crowded, so that the bees feel themselves a little uncomfortable, it may be they still have their contracted winter entrance, or, if in winter-packed hives, the cushion is not removed early enough, such a colony is quite likely to get the swarming fever. Let me say right here, before it slips my mind, that the universal practice of leaving the cushion on until time to put on the supers, with the idea of keeping the bees warm, so they will breed up better during the spring months, is the proper thing to do in early spring, but just as soon as the danger of freezing nights is past, usually about May 20th, in this northern locality, the packing should be removed from the top of the winter-packed bees, and upper stories given to all the medium and strong colonies.

How often it happens that our especially strong colonies, those from which we anticipate great results, prove to be only ordinary at extracting time. They were allowed to form the habit of some people I know of viz., that they can live fairly well without work. At any rate, it would seem so; as they rarely ever do much

more than half of a season's work in the supers.

There is much hinging on this word *condition*. We read much about keeping one's colonies *strong*, what we want, and *must have* for best results, is not *strong* colonies, so much as, colonies that are in the right *condition*. Such colonies were perhaps only moderately strong during the May breeding season, but they kept pegging along, and just came to their *zenith* as the honey season opened. They had never seen a minute but what they had plenty of room, and for all they knew, they had room enough to last them *always*. Such colonies are our best surplus gatherers; they are our main dependence; we bank on them; and one would be fortunate were all his colonies just like this, as to strength.

THE ADVANTAGE OF GIVING THE QUEEN FULL SWAY EARLY IN THE SEASON.

Just before the extra strong colony gets in the condition of this ideal colony mentioned above, give it an upper story, and let the queen have full sway through these two stories. Don't you see that this manipulation will keep this extra strong colony in about the same condition as the ideal? The laggards are allowed to come along as best they can; if they get strong enough to store surplus, all right, if not, they get into good condition to winter, and usually are our best swarms the next season.

Rather than spend good time, which is money, nursing up or uniting these puny colonies, our practice is, to keep enough colonies in each yard, exclusive of these weaklings, to gather what honey the location produces; this "kink" is a money saver, as it saves a great lot of spring work that pays but little at the best.

In my early bee-keeping when working for extracted honey, I had no queen-excluders; the practice was when the honey season opened, to give them their upper stories. Of course, the queen would take possession of this second story for brood purposes. Then we read that the proper thing to do, was to lift up this

second story, when it was full, or, more correctly speaking, when this second story was, say, two-thirds full, and place the empty story under, or between the brood nest and the partly full upper story. In this way of managing we used to get brood all through our hives: for we kept up this lifting as long as our honey season lasted; or, more often, until our stock of extracting combs was exhausted; for, at that time, we were not taught the value of leaving our honey on the hive clear through the season, until it was thoroughly cured, and ripened by the bees. My! what a time we used to have trying to extract those combs of honey and brood: many times there was more brood than honey. The extracting house was not a fit place for company those days.

Some such experiences as this, caused me to buy wood-zinc honey-boards for one yard. Then, later, we bought more for an other; so we have, and still use, excluders on two yards. Then, after a few years, we began to notice that our yards with excluders, were swarming more than yards without excluders. About every third year, or so, we would have excessive swarming over these excluders, and there would be much less swarming where no excluders were used.

There *is* a way to handle them and prevent much of any swarming, and that is to lift brood from the brood nest into the upper story, but this necessitates finding the queen, or *shaking* the bees off the combs, and either one is expensive, in-as-much as it costs experienced labor. What we want for extensive bee-keeping, is a system that requires no handling of the brood-nest, in normal colonies.

Experienced bee-keepers are aware that the spring months of April and May are the main breeding season with bees; especially with the yellow races, breeding comparatively stops when the honey season opens in earnest. Probably there is not more than one-third as much brood in June, after the honey flow is on, as there was in April and May. Taking ad-

vantage of this fact, we so manipulate our upper stories as to have practically no brood in them at extracting time, and that without the use of excluders.

PRODUCING EXTRACTED HONEY WITHOUT THE USE OF QUEEN EXCLUDERS.

It will be noticed that, by giving the bees their first upper story two or three weeks before the season opens, there will be lots of brood in it. This is exactly what we want, at this season of the year, but the problem that confronts us, after getting it, is how to get rid of it after it has fulfilled its mission of preventing swarming. The plan is this: We put subsequent upper stories *on top*; and the queen, having all she can attend to in the two lower stories, rarely ever ventures into the third story. Now we will suppose that these two upper stories, holding 100 pounds when full, are all the colony needs: the problem is all solved, *provided* we do not do any extracting until after the season closes, along the last half of July, for, by that time, the brood will be nearly, if not all, crowded down below, into the brood nest. As much as sixty days have elapsed since the first upper stories were given: time for three generations of brood to have hatched.

The closing up of the season is of nearly as much importance as with comb honey. A week or so before we expect our season to close we are very careful about giving too much room. We must produce a *finished product*: for we cannot expect to produce a good article of extracted honey, without having it thoroughly cured and the greater part capped over before extracting. With a fifty-pound upper story, it is not possible to get every comb sealed clear down to the bottom, but we should bear in mind that the brood-nest will hold quite a quantity of honey at this time, and it is a very good plan to let the bees have a part of this white honey, to winter on, as a remuneration for faithful services.

To sum up this subject, the whole secret of producing a superior article of extracted honey, is to have the extracting combs free from brood at extracting time

and then to crowd the queen below towards the last end of the season; and this procedure will also secure the desired results, as to quality of honey. Just a little brains towards the last of the season.

During the season of surplus, the out-yard should be visited as often as once a week, for best results. Give plenty of surplus room during the first two-thirds

of the season, then let up a little; and if you have been a little free in giving room so far, perhaps some of the colonies will not need more room. Being right on the ground you will have to use your best judgment as to the duration of the honey flow, also as to strength of colonies, etc.

REMUS, Mich., Feb. 12, 1907.



Only a Few Visits Because of Shook Swarming.

M. A. GILL.

FRIEND HUTCHINSON:—I have just been reading, for the second time, your manner of making increase in the Review apiary, and was thinking that I would like to have you try a plan that, in my opinion, will completely control swarming, make 100 per cent. increase, give a good crop of honey, and with as few visits as possible.

In giving the plan, the dates I shall use might have to be changed to fit conditions, caused by early or late locations, but, to illustrate, I will say that if I had fifty colonies of bees in Michigan that I wanted to manage by the above plan, I would be there April 1st, take them from the cellar or clamp (as the case may be) and see that every colony had abundant stores to last until June first, at which time there would be plenty of hatching bees.

GETTING QUEENS FOR THE INCREASE

On the above date I would first pick out five of the best colonies in the apiary, and remove the queens by forming five, good, one-frame nuclei.

WHEN TO DO THE SHAKING.

I would then equalize the hatching brood among the forty-five remaining

colonies, so they would be as near equal as possible by June 8th to 10th, when I would return and "shake" the forty-five colonies by the regular plan of "shook swarming," leaving the queens with the new swarms on the old stands, and carrying the queenless brood to the new stands.

The next afternoon I would go to the five colonies which were made queenless ten days previous, and from which I should be able to secure forty-five, No. 1 queen cells built in full colonies, giving one to each of the hives of brood which will be perfectly safe this soon, as there are only young bees to deal with.

Now I know that all swarming is over with, and whether working for comb or extracted honey surplus room must be given to the forty-five shook swarms, for the honey flow is on, and they are going to do business.

I would visit them again July 1st., and have a few queens in my pocket to give where any had missed. I would find that I had forty-five good colonies storing surplus, and another fifty colonies with young queens that would be ready to handle any surplus that might come after July 20th, and I would give at this time suf-

ficient surplus room to last until the end of the season.

You see, I have made only three visits since putting the bees out of the cellar.

I have no weak colonies to fuss with after this time of the year, and have compelled the bees to meet my requirements instead of my being compelled to meet theirs.

Of course, there is always a certain element of uncertainty to be reckoned on, but if the season has been favorable for building up until July 15th, and there comes an August flow as is nearly always the case here in Colorado, and, as I suppose, there is in Northern Michigan,

with its fireweed and buckwheat, an apiary managed on the above plan will close the season with as much surplus honey as the one where all swarming has been kept down, and the owner would have the increase clear, less the cost of supplies.

THE GLORY OF TRIUMPH.

I tell you its just fun to get an apiary nearly up to the swarming pitch, and then *shake* the fever all out of the bees, yes, and yourself too. Why, I feel, as I imagine the fellow does when he is given the decision in a prize fight, at least, I feel as though I am IT.

LONGMONT, Colo. Jan. 15, 1906.



Producing Both Comb and Extracted Honey in the Same Apiary

G. W. M'GUIRE.

AT the beginning of the season I prepare my hives as though I were going to take one big crop of extracted honey. Each colony is stimulated to as strong a point as possible. A queen-excluder is put on and the stories adjusted. Now, I just let bees store all the honey they wish in these upper stories before they swarm—the more the better.

When a colony swarms, I just hive it in this *top story*, which we will presume is full of honey, placing it on the old stand, and setting the old hive a few feet back with the entrance turned in the opposite direction.

Now, the whole field-force is turned into this swarm which has the old queen, eight frames of honey, and no brood. We now place on this hive one, two, or three section supers, according to the size of the swarm.

The first instinct of the bees will be to prepare a place for rearing brood by moving honey from the brood combs to

the sections. At the same time there is a rush of honey from the fields, and all going just where we want it, into the boxes.

After a day or two we will turn the old hive around alongside of the swarm, with the entrance in the same direction as that of the swarm.

In about ten days we move it over to the other side, giving a new influx of bees to the swarm; then, provided no increase is wanted, at the end of 21 days, when all the brood is hatched, shake all the bees in front of the swarm. There will doubtless be a young queen just beginning to lay; let her go right in, and nine times out of ten she will be retained and the old one destroyed.

If increase is desired, then, after ten days, instead of moving the old hive to the other side of the swarm, take it to a new location and allow the colony to build up for winter.

DARK RIDGE, N. C. June 9, 1905.

Editorial

The Real Satisfaction and the deep joy of life never come from the things that a man gets, but always from the things a man gives or does. *H. W. Matie in Ladies' Home Journal.*

The American Bee-Keeper has two editors, Harry Hill and Arthur C. Miller. The items written by Bro. Miller are now signed with an "M." and those furnished by Bro. Hill have an "H" at the end. It is quite a little satisfaction, sometimes, to know exactly who wrote an item.

Chas. Koeppen, formerly of this city, but now living in Virginia, will have a live-bee demonstration at the coming Jamestown Exposition. He will also have moving pictures in the bee line, and will sell bee books and journals. Much good may be done by such demonstrations.

Back volumes of the Review are often called for; and now Mr. L. H. Lindemuth, of Williamson, Penn., writes that he would sell some of his back volumes, and he has a complete file from the beginning. Anyone wishing to get some particular volumes should write to Mr. Lindemuth.

Bi-sulphide of carbon is the best thing to use in fumigating combs to destroy the bee moth's larvae, or its eggs. Combs in colonies that died out of doors early in the winter will probably not need any fumigation this spring, as the cold usually kills the eggs of the moth, but the combs from colonies that have spring dwindling, or from colonies that have died in the cellar, will be quite likely to need fumigating unless they are soon gotten into

the hives where the bees can care for them. Stack up a pile of hives full of combs, close the entrance at the bottom, put a small quantity of the carbon in a shallow dish on top of the uppermost hive and cover all quite closely, and the job is done so far as you are concerned.

Populous Colonies store a lot of honey, and schemes for uniting the workers of two queens in one super have been rife, but I greatly doubt the advantage of unusually populous colonies. I think the same force of workers in two hives would accomplish as much. There must be sufficient numbers to keep up the heat, to gather the nectar, and to build the comb and feed the brood, but it is questionable if it pays to go away beyond the normal. I think some of the greatest yields of honey, in proportion to the number of bees, that I ever witnessed, came from two and three-frame nuclei.

It is my opinion that this matter of the *condition* of the colony, the proportion of outside workers, as compared with the nurses and the amount of brood, has vastly more to do with the amount of surplus than does mere numbers regardless of these conditions. Mr. Townsend brings up this point in his article this month, and I agree with his conclusions.

Salt is what I have always used to kill the grass near and in front of hives. About the only objection that I know of to its use is that it will attract stock if it has access to the yard. A flock of sheep was once turned into the field where was located my just-salted apiary. The sheep soon found the salt, and the bees soon found the sheep's noses and ears. The

antics of those sheep were certainly amusing until the affair began to take on a serious nature. The sheep didn't seem to realize that their trouble came from eating the salt in front of the entrances, and it was with much difficulty that they were finally driven away sometimes pushing and crowding a hive out of place, which did not help matters very much. The British Bee Journal tells of something that does not have this objection, and costs only a cent a gallon. It is made as follows:

Mix two ounces of carbolic acid (98 per cent.) with 1½ gallons of water—preferably hot water. This will destroy even thistles and nettles, and the seeds, too.

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Self-Spacing Frames, and a Question of Fairness.

The chief editorial writer for the American Bee Journal is a very fair-minded man, but he disappointed me a bit in his review of my editorial of last month on self-spacing frames, versus the loose hanging frames.

He copied the article paragraph by paragraph, or, rather point by point, and replied, making what I consider the best possible arguments in reply, and I read them through with just the shade of a twinkle in my eye, as I was wondering what he would say when he came to the last paragraph, which reads as follows:

When it comes to the production of extracted honey, the frames with staples and projections, "excrescences," I call them, are simply not "in it." For several reasons it is better to space the combs wide apart in the supers, when the self-spacing arrangements come to naught. The same can't be said of them, however, when it comes to using the honey knife."

This paragraph was not copied, nor noticed in any manner.

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Don't Lose Head, Heart Nor "Nerve" When Things Go Wrong.

We have been having a hard spring on bees here in the North. Colonies that have suffered from dysentery will go

down like tender plants before a frost. There will be no chance to gather natural stores, and colonies will be getting short of supplies. In times like these, when colonies are dying, and everything is going wrong, many bee-keepers lose heart, become discouraged, and neglect to do what ought to be done. When everything is going "dead wrong" is the time of all times when a man should keep his head, and do the very best that is possible. If things are going backward, so to speak, if he is forced in a certain sense to retreat—let the retreat be made in good order. If colonies die, take good care of the hives and the combs. Don't let the moths destroy the latter. Times will change in a few days, or weeks, at the most, the sun will shine and the flowers bloom, and the colonies that are left will soon be booming, and the sad thoughts and discouragements of the past will be forgotten in the joy of the present. Don't let there be any regrets for negligence during the trying times.

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The Cold, Late Spring.

The last week of March was warm, and the bees here at Flint, and one apiary in Northern Michigan, were put out. Brood rearing was only nicely started, however, when it turned cold and stayed cold and is not very warm at this writing (April 27th.) There was one period of ten or twelve days when scarcely a bee left the hives. When it did warm up enough so that the bees could fly they spotted things up twice as badly as when first set out of the cellar. I suppose it was because they had been handling pollen and breeding, and their systems were soon over loaded when there was no opportunity for flight. They did not get enough brood started so that they could not protect the whole of it. As a result, it all hatched, and there is a pretty fair sprinkling of young bees scattered through the hive; but the rearing of brood practically ceased. What they had started they took care of, but they did not start

any more until it warmed up so that they could fly every day or two. I am not able to see that the cold weather has done any serious damage to the bees, aside from the fact that it has retarded brood rearing; but, as vegetation has also been kept back, there will probably be no great loss.

Had this cold spell been preceded by three weeks of warm weather, which would have enabled the bees to have filled their combs with brood, then there would have been serious damage, as at least half the brood would have perished. Quite a small cluster of bees can take care of themselves, if they have no brood to care for, and there is honey right next to them.

My apiary here is located this year in the southern edge of a piece of woods, and never before did I realize the great value of outside protection. In addition, my hives are surrounded by tarred felt, and it seems as though the bees ought to come through this trying weather if any bees do.

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Confining Bees When Wintering them.

Some few months ago, in speaking of the Hershiser bottom board, an arrangement that allows a space below the combs, but confines the bees to that space, I characterized it as a "harmless invention." I doubted if it was of any value, but did not think it would do any harm. Editor Root reports some severe

losses last winter, or this spring, when this device was in use; but he does not feel sure, neither do I from reading his article, that the Hershiser bottom board was to blame for the loss. First, only the weaker colonies and nuclei were put into the cellar. Then, in January, they were taken out and allowed to fly. I should fear disaster from this. Mr. Root thinks it possible that too much ventilation was given by the use of this open space beneath the combs, and it is possible that this was true with small colonies. In my cellar here at home, and in the cellars in Northern Michigan, the bottom boards were removed and the space left entirely open. Not only this, but, in most of cases, the cover was removed and only a quilt laid over the combs. The temperature ranged from 45 to 50 degrees, and the bees have wintered perfectly; but there were no weak colonies nor nuclei.

My idea of confining bees to the hive is just this: A healthy bee, one that is going to live until spring, and amount to something, does not care to leave the cluster, nor try to do so, unless disturbed. The bee that voluntarily leaves the cluster is old, or sick, or has something the matter, and it seems to be a provision of nature that she shall get out of the cluster, and out of the hive, if she can; and it is my desire that she gets out of the hive and away from the cluster just as soon, and as quietly, and as *permanently* as possible.

EXTRACTED DEPARTMENT.

HOW BEE-KEEPING HAS DEVELOPED

Some Suggestions to Those Who Would Make it Their Only Business.

For several months, perhaps longer, there have been running through my

mind some thoughts upon the past, present and future of bee-keeping; particularly have I been speculating upon the present opportunities for making of bee-keeping a sole business; and, feeling that good might come if attention to this point should be called to a large number of bee-keepers, I sent the following article

to Gleanings, which appeared in the March 15th issue:

First, a brief backward glance at the past, a glimpse of the present, then let the eye rest upon the future.

In the past, almost every farmer had a small flock of sheep, two or three cows, a dozen or two hens, raised an acre of flax, made his own cheese and clothing, and, among other things, kept a few hives of bees brimstoning the heaviest and lightest in the fall. Had a man attempted bee-keeping as a specialty, the keeping of one hundred or even fifty colonies, he would have been looked upon as visionary, wild, almost a lunatic; and, under the existing conditions, it *would* have been a foolish move. The product would have been in poor shape for transportation or retailing, the facilities for transportation most meager, and a sufficient number of consumers most difficult to find and reach.

As the years rolled by, population increased wonderfully; railroads, steamboats, and other modes of transportation multiplied; and then came the invention of the movable-comb hive, the honey extractor, the bee-smoker, comb foundation, and the section honey-box. The product of the apiary was secured in a marketable, transportable shape; there were means of transportation, and a *market*. Men began keeping bees in larger numbers, making a prominent side issue of a business that eventually grew into specialty. Bee journals came upon the field of action; factories for the manufacture of bee supplies were built, and bee-keeping as a separate rural industry became an established fact.

But there were many problems to be solved. The successful wintering of the bees, and the control of increase or swarming, were difficult of solution, and bee-keeping as understood and managed in those days was truly an uncertain pursuit—very profitable if things turned out well, but likely to leave the bee-keeper some fine spring morning, with only empty hives and combs. It is no wonder that the advice was to combine bee-keeping with some other pursuit. Gradually the difficulties were overcome. Foul brood could be banished from an apiary or from a neighborhood; swarming could be prevented or forestalled, and the proper food, temperature, ventilation, etc., brought the bees safely through long severe winters. That bee-keeping might be depended upon as a sole business was proved by the success of such men as Crane, Hetherington, Coggsall, Elwood, Holtermann, Miller, Townsend, Coverdale, Aikin, Gill, Mc-

Intyre, Mendeneson, and many others equally successful but not so widely known.

This is an age of specialty, and bee-keeping is no exception to the rule. One farmer is a stock-grower; another raises potatoes, as did Mr. Terry; another, great fields of cabbages; another, fruits, etc., and, instead of keeping a few bees, they buy their honey of the man who makes a specialty of its production, he in turn buying his meat, milk, and potatoes. Many who are now keeping bees in connection with some other pursuit are asking themselves and others if they shall drop this other pursuit and make a sole business of bee-keeping. To such I would say that *never were the prospects brighter for making a success of bee-keeping as a sole business.*

One feature that I have not touched upon, and it is most important, is the continually increasing demand for honey. Its use for manufacturing purposes, especially by the great baking companies throughout the country, has done more to put commercial bee-keeping upon a sound basis than many of us dream. The prices paid are not high, but the demand is large and steady, which is of vastly more importance. The handling of crops of honey is drifting away from the hands of the commission merchant into those of the cash buyer. Honey has really become a staple, in good demand, and can be readily sold for *cash* almost any day of the year, the same as butter, wheat and potatoes.

There is really no great difficulty in wintering bees without loss. An underground or suitable cellar, where the temperature is beyond the influence of outside temperature, properly ventilated, and the bees supplied with early-gathered well-ripened natural stores, or else fed a syrup made from granulated sugar, solves the wintering problem. There are several methods, notably "shook swarming," whereby distant apiaries may be managed by occasional visits, with no loss from absconding swarms.

The first thing to be considered in embarking in bee-keeping as a sole business is the location. This is the foundation of bee-keeping as a specialty. I would never think of such a thing as making a specialty of bee-keeping in a poor location. Still further, unless the location is different from any with which I have had experience, I would not attempt specialty with bees in one location certainly not with only one apiary. With the systems of management now in use, it is possible to care for an apiary many miles from

home—so far that the journeying to and fro must be done on the cars. If possible, have each apiary where the flora and other conditions are different from those at the other yards. The chances of a total failure are thus greatly lessened; there is almost certain to be a crop at some of the locations. To illustrate, I have bees in four different kinds of locations; or, rather, there are four sources of supply available to one or more of the four yards. These sources are clover, basswood, red raspberry, and buckwheat. Last year the buckwheat furnished about one-fourth of the crop, while basswood yielded nothing. Next year the conditions may be reversed. Clover yielded the most profusely last year; next year it may be raspberry.

Having secured the desirable locations, next comes the stocking of them with the very best kind of bees. I have found nothing superior to the darker strains of Italians. Get the best of hives and implements. This is one of the advantages of specialty, that it can afford to have tools and implements which are beyond the reach of the small bee-keeper. It can have the best of hives, feeders, cellars, extractors, etc. For instance, I have sold the two-frame extractors that came with the apiaries that I bought last fall, in Northern Michigan, and shall put a four-frame automatic at each yard the coming season.

To recapitulate: Get a good location; better yet, several good locations; stock them with good bees, plenty of them, enough so that when there comes a good year the crops will be enormous; have the best of hives and implements, and study out some system of management that is adapted to yourself and your conditions. Simple, isn't it?

One thing more, and I am done. Unless you can go into it with enthusiasm, and full faith in your ability to succeed, don't attempt it.

◆ ◆ ◆

SPRING FEEDING.

Its Value as a Preparation for the Honey Flow.

As the business of bee-keeping increases, and is followed more and more on business lines, bees being kept in large numbers, either in one apiary, or in several, the matter of overstocking becomes of much interest. It is pretty well settled

that when the big, bountiful flow is on, that a very large number of bees may be kept in one locality; the difficulty is to furnish them sufficient feed at other times of the year. It is possible that, by judicious feeding, the number of bees in a given locality may be largely increased, perhaps doubled. Here is something on the subject from Mr. J. E. Crane, published several months ago in *Gleanings*. Mr. Crane says:—

The articles by E. W. Alexander have proved very interesting and valuable, and I hope they may be placed in permanent form for easy reference. Aside from direct information on many subjects, the sidelight thrown on some other points gives them great value. We have wondered how he could support such an immense yard of bees in one place without overstocking. His method of feeding, when flowers are not yielding honey, in a large measure explains the whole thing. To illustrate, take a clover section like the one where I live. Our whole reliance for surplus is clover, which is usually abundant; but unless bees get a good start before it comes into bloom it goes by before they can gather much surplus; but if bees are fed so as to be strong when it begins to yield honey, a good crop is secured, and the number of colonies kept in one place may be largely increased without danger of overstocking, and the extra amount of honey secured will many times repay the cost of extra feed.

I remember some thirty years ago, before I had learned the value of early brood-rearing or the art of securing a strong colony in time to gather the crop of honey as soon as it appeared, nearly all my colonies were short of stores, while many of them were weak in numbers also. I thought that the strong colonies could take care of themselves, but the weak ones I must feed. I fed them, but left the strong ones to shirk for their feed. When clover came into bloom I found those that were strong early were almost without brood, and fast getting weak, while those that were weakest in early spring were my best colonies, and gave me very much the most surplus honey. Had I been a stranger to the resources of our section I might have thought we were overstocked. I believe that, by judicious feeding when flowers yield little honey, the number of colonies in any given section may be very largely increased—I think it safe to say doubled, without any danger of overstocking.

Science in Hive-Making

You will find the bee-spaces in Lewis hives absolutely accurate.

This means something.

Some bee-keepers think a bee-hive is a bee-hive, and that's the end of it.

Thus they are misled by cheap prices, and the dealer making the lowest price gets the order.

But after all, more than all the honey that they think they have saved, the bees have lost for them in one season.

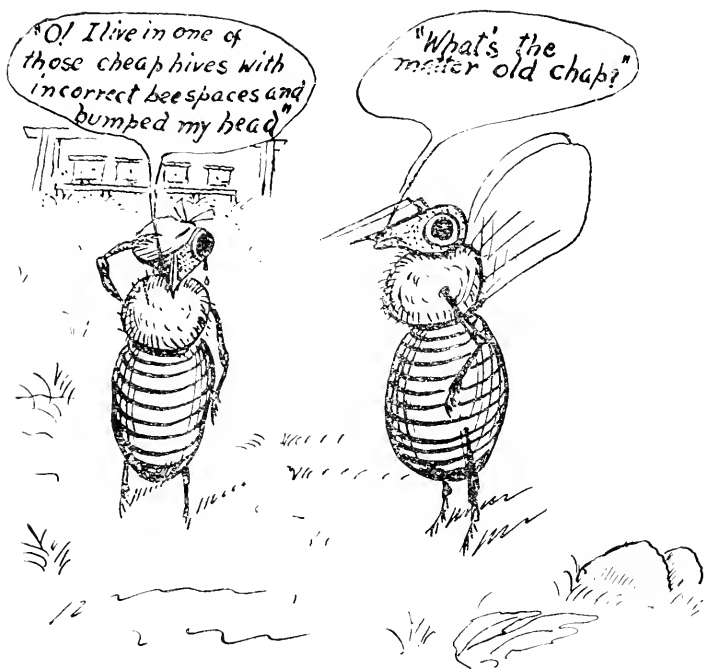
Because the bees have spent their time building over the wrongly constructed hive.

Men can make hives better than bees.

Start right with Lewis hives.

Thirty years at the business have made them perfect.

There is no "Just as good."



G. B. Lewis Co., Watertown, Wis.—
 Gentlemen:—The foods have been received, and I am greatly pleased with them. The hives are a model of perfection, both as to material and workmanship. It is a pleasure to have material go together as yours do. I bought hives from you 16 or 18 years ago, which were very satisfactory, but I notice a marked improvement, as you now make them.
 Very truly yours,
 Cha. Hottel, N. C.
 E. W. LYLES

Accidents Do Not Happen in Lewis Hives

G. B. LEWIS CO. The Original Beeware People **Watertown, Wis.**

Send to your nearest Lewis Agent to save time and freight.

"If goods are wanted quick, send to Pounder."

Established 1889.

A Few Bee Lines

By the Bee Crank.

Indianapolis is so close to the center of population of the United States that she can almost touch it.

With a good glass one might see the very spot from the top of our great Soldiers' and Sailors' monument, for it is only forty miles away.

Indianapolis is connected with every important point in the country by a bee line. We are within about 24 hours by rail of the entire country, from the Atlantic to the Rockies.

This is one reason I have been able to develop my specialty of quick deliveries. But I don't depend entirely upon geographical location.

I carry a complete line of beekeepers' supplies in stock ready

for shipment. Your order is mailed one day and the goods are on the way the next.

I carry the Root goods—charge you Root prices for them. I can save you freight charges on Metal-spaced Hoffman Frames and Danzenbaker Hives. Am never out of Dovetailed Hives, Section Honey-boxes, Weed process Comb Foundation, Honey and Wax Extractors, Bee-smokers, Bee-veils, and Powder Honey-jars.



Send me your Beeswax and put your name on the package. I pay the best market price, cash or trade. Send large shipments by freight, small ones by express.

Get my new catalog it's free.

**Here's a letter I received
a few days ago**

MR. WALTER S. POUDELER,
Indianapolis, Ind.

Dear Sir—Your shipment of bee-supplies arrived in good condition. I opened the boxes and was surprised to see the care that was taken in packing the goods, and the quality of same. Bee-ware cannot be duplicated in this locality at your prices.

Yours truly,

WILL HANSEL.

MINOOKA, ILL., March 2, 1907.

Walter S. Poudler,

513-515 MASSACHUSETTS AVENUE, INDIANAPOLIS, IND.

SPECIAL BARGAINS

In Dovetailed **Hives**, Plain and Beeway **Sections**, Hoffman **Brood Frames**, Section Holders, Separators, etc.

We are enlarging our **FACTORY** and all of those goods have to be moved. If you want anything in your apiary, you will do well by writing us at once, and we will make you **DELIVERED PRICES** that will surprise you. Our stock is all new and up-to-date, we do not keep poor or second grade goods. Our sizes are standard. Quality and finish cannot be beat by anyone. We make anything used in the apiary and can save you money and delay at any time of the season. Give us a trial and be convinced. We aim to please our customers and guarantee all our goods to give entire satisfaction or refund the money.

MINNESOTA BEE KEEPERS' SUPPLY CO.,

John Doll & Son, Proprietors,

Nicollet Island. No. 35.

Minneapolis, Minn.

The Swarming Season

will soon be here. Are you prepared? Why not order your supplies now, and take advantage of

THE LARGE DISCOUNTS

which we offer this month on Bee-Supplies? Only remember the

LOW FREIGHT RATES

from **TOLEDO** places our goods in your door cheaper than you can get them elsewhere. We afford you every advantage in both Poultry and Bee Supplies. We sell The A. I. Root Co.'s bee-supplies, Model Incubators and Brooders, Prairie State Incubators and Brooders, Poultry Supplies of all kinds.

OUR LARGE ILLUSTRATED CATALOG

illustrates and describes our complete line; tells how to raise bees and chickens successfully. Free upon request.

The Griggs Bros. & Nichols Co.

528 Monroe St., Toledo, Ohio.

FRAMES, FRAMES, FRAMES

"Hall's Hobby" beats them all, they will fit your home-made hive. All about them and a little besides. Your name on a postal please. 12 c6 tf D. S. HALL, So. Cabot, Vt

ITALIAN QUEENS

Untested, \$1.00 each; six for \$5.00; one dozen, \$8.00. Tested queens, \$1.50 each. Breeders, \$5. Caucasian queens, untested, \$1.20 each; six for \$6.00; one dozen, \$11.00. Warranted, tested, \$1.50 each. Breeders, \$5.00 each. Safe arrival guaranteed. Booking orders now.

D. J. BLOCHER, Pearl City, Ill.

5-07-tf

Canadian and Northern New York Bee-Keepers!

Buy your supplies of **A. H. REEVES & CO** and save freight charges and time. A large stock of new goods just in from the factory. Send for catalog and price list.

ROOT'S GOODS

Cash Paid for Beeswax

4-07-3t

A. H. REEVES & CO.

Watertown, New York.

Phone 1296

BEE SUPPLIES

We furnish **EVERYTHING** needed in practical Bee-Culture, at lowest prices. We make the

DOVETAILED LANGSTROTH AND ALTERNATING HIVES.

The most practical, UP-TO-DATE hives are the

MASSIE HIVES

We make them. Have you read our Catalog?

Our HONEY-EXTRACTORS

are not excelled for durability, fine workmanship, and practical utility.

Have you seen our latest improved Champion Smoker? If not, you miss it until you get one. Write us for our 1907 Catalog. It's the easiest catalog to understand or order from that you ever saw. No trouble to give estimates. Tell us what you want.

Satisfaction guaranteed or money back. Address,

KRETCHMER MFG. CO., Council Bluffs, Iowa.

Muscatine Produce Co., Muscatine, Iowa.
Trestler Supply Co., 103 11th Street, Lincoln, Neb.

3-07-10t

Catalogs issued in English and German.

Bee-keepers, we can furnish you with the best

Sections

at the lowest prices; and all other up to date goods.
Send for catalog and prices. 5-07-1f

AUGUST LOTZ & SON, Cadott, Wis.

CANADA DISTRIBUTORS
FOR

Marshfield Mfg Co, Wis. Beeware, Hives, Sections, Shipping Cases and all kinds of Bee Supplies; no better made. We have been selling Marsh field beeware for three years, and using them ourselves, and can say that there is no better made. We have the best shipping center in Canada. C. P. Ry, M. C. Ry, and G. T. Ry, three express companies—Dominion, American and Canadian. Sample of sections sent free. Send for a sample before you buy. We can save you money on Beeware. We buy in carload lots and can give you the lowest prices on No. 1 Beeware. Wax wanted. N. H. SMITH, Tilbury, Ont. Lock Box A.

Kent Co., Canada.

P. S. Eggs from imported trio of Black Minorcas costing \$78.00, \$2.00 for 15 Eggs; also two B. P. Rock costing \$50.00, Eggs at same price. Warranted to hatch well and safe in your place.

BIG SLAUGHTER

In Bee Supplies. Owing to the backward spring I have a car load of Dove-tailed Hives, too many, also a car of sections. To move these quickly I will name you a very low price. 2,000 lb.-shipping cases for 4 1/4 sections, all basswood, one-piece covers, 13c each.

Augusta Berry Baskets and Crates in stock. Send for 32 page list.

Beeswax wanted: 31c cash, 33c trade.

W. D. SOPER, Jackson, Mich.

ITALIAN CAUCASIA
We strive to please. V
have the best, the get
best, the prettiest, th
white comb builder:
They winter finebeaus
they don't get excitec
Bees by the pound. On
two and three-fram
nuclei. Circular.
Write.
A. D. D. WOOD,
Lansing, Mich

BEESWAX WANTED

We pay 32c in cash, or 35c in trade, per lb., delivered here for

CHOICE YELLOW BEESWAX

Send **ur shipmsnt now. We remit the day it comes to hand.**

FRED. W. MUTH & CO.

21 WALNUT ST.

CINCINNATI, OHIO.



We have a complete stock of Root's Goods and can save you time and freight expense. We would like to quote you prices on the goods you need. We sell the Danz. hive, the Comb Honey hive, H. H. HUNT & SON, Redford, Michigan.

Send for
Our 1907
Catalog.

PATENT, BINGHAM SMOKERS. 24
YEARS THE BEST. CATALOG FREE.
T. F. BINGHAM, FARWELL, MICH.

BEES AND QUEENS.

Three and five-banded Italians, and silver gray Carniolans. Untested queens, 75 cts each; tested, \$1.00. One-frame nucleus, without queen, 75 cts.; two-frame, \$1.25. Special prices on large orders.

C. B. BANKSTON & CO., San Antonio, Texas.

2-07-tf

ANGEL'S GOLDEN BEAUTIES

And his bright three-banded Italian Queens have but few equals and no superiors. A fine large queen of either strain for \$1.00; extra select breeder for \$2.50.

SAMUEL M. ANGEL,
R. R. 1, Evansville, Ind.

6-07-6t

Minnesota Bred Queens.

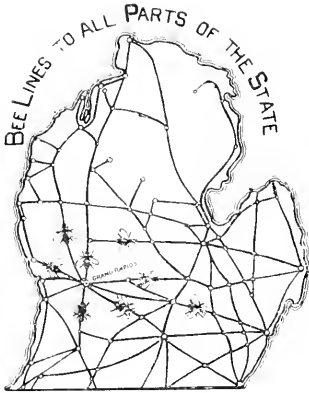


Try our Northern bred queens. Three-banded and Golden Italians. Untested, 70 cts.; tested \$1.25. Hardy and good honey gatherers. We want your orders and will guarantee safe arrival and satisfaction. Write for circular to 4-07-tf

MENNIE & FENTON.

Pine Island, Minn.

WANTED—An experienced apiarist as working partner in new business. First class farm in connection. Entirely new field. Unexcelled opportunities for man of work and ambition. Address L. G. Sada, 20 Degollado St., Monterey, N. Mexico. 5-07 3t



BEE-HIVES

SECTIONS

Why Buy of Us?

Remus, Mich., Feb. 25, 1907.
A. G. Goodman, Grand Rapids, Mich.

Dear Sir:—I use **Lewis Sections** exclusively; there are none better the only perfect "V"-cut section that has come to my notice. They fold without moistening.

E. D. TOWNSEND.

Remus, Mich., Feb. 18, 1907.

The **Lewis Hive Bodies** are far superior, both in material and workmanship, to any I ever bought.

As ever yours,

E. D. TOWNSEND.

**Several Car-Loads on hand.
Immediate shipments. Beeswax wanted.
Advanced Bee-Veil, cord arrangement.
Silk face, 50c, postpaid.**

**A. G. WOODMAN CO.
GRAND RAPIDS, MICH.**

We are Headquarters for the

ALBINO BEES

the best in the world. If you are looking for the bee that will gather the most honey, and is the gentlest of all bees in handling, buy the Albino. I also furnish the Italian, but orders stand fifty to one in favor of the Albino.

Prices: Select tested Albino queens for breeding, \$5.00; tested Albino queens as they run, \$2.00; untested, \$1.00. Italians, tested, \$1.50; Untested, \$1.00.

**S. VALENTINE,
Rocky Ridge, Frederick Co., Md**

5-07-tf

If you are going to--

Buy a Buzz Saw

write to the editor of the Review. He has a new Barnes saw to sell, and would be glad to make you happy by telling you the price at which he would sell it.



WE BUY AND SELL
HONEY
OF DIFFERENT KINDS

If you have any to dispose of, or if you intend to buy, correspond with us.
We are always in the market for WAX at the highest market price.

HILDRETH & SEGELKEN
265-267 Greenwich St New York.

DO IT NOW!

Send for my free Catalog of bee supplies. Best goods, right prices, and careful attention to orders. Write today.

Arthur Rattray, Almont, Mich.

4-07-tf

BEES AND QUEENS

GOLDEN ITALIANS

The yellow all-over kind.
 Book your orders before the rush comes, and you will be sure to get your queens on time.
 I rear queens from select mothers only.
 I am situated on an island that is entirely Italianized, and pure mating is practically insured.
 My stock originally came from the best known queen-breeders in the country.
 I will begin April 1st and fill orders in rotation.
 Satisfaction guaranteed.

Untested Queen	\$1.00
Select Untested Queen	1.25
Tested Queen	2.00
Select Tested Queen	3.00

NUCLEI

One-frame Nucleus, without queen....	2.00
Two-frame Nucleus, without queen....	3.00
Three-frame Nucleus, without queen...	3.50

H. M. PARKER, Jr.

JAMES ISLAND - SOUTH CAROLINA
 Money Order Office Charleston, S. C.
 4-07-2t

Well-bred Queens !

For the purpose of securing an ample supply of select-bred queens, I have engaged an experienced breeder in the South to rear queens for ME ONLY, and confidently expect to fill orders promptly soon as weather permits mailing.

Cook's Square Honey-jar

is the best, cheapest, and most sanitary package for retailing honey. Send for circular and price list of hives, bees, and useful implements.

J. H. M. COOK, 70 Cortlandt St., New York

The Oldest Supply-house in the East,
 and only Reliable Goods sold. 10
 Cents brings sample jar by mail.

4-07-3t

HONEY QUEENS

LAW'S ITALIAN and HOLY LAND QUEENS. Plenty of fine queens of the best strains on earth and with these I am catering to a satisfied trade. Are you in it? Or are you interested.

Laws' Leather and Golden Italians,
 Laws' Holy Lands.

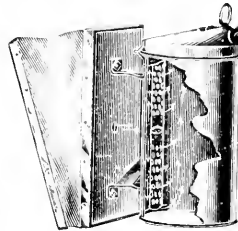
These three, no more. The following prices are as low as consistent with good queens. Untested, 90c; per dozen, \$8.00; tested \$1.00; per dozen, \$10. Breeders, the very best of either race, \$3.00 each.

W. H. Laws, Beeville, Tex.

The Danzenbaker Twentieth Century Smoker

Awarded Highest Prize
 A GOLD MEDAL

at the World's Fair,
 St. Louis, 1904.



**IS THE BEST,
 CLEANEST,
 COOLEST,
 STRONGEST,
 CHEAPEST,
 AND LARGEST,
 SMOKER SOLD
 FOR A DOLLAR.**

All That is Claimed The General Manager of the National Bee-Keepers' Association writes: "I have given your 20th Century Smoker a thorough trial. For convenience in lighting, durability, and long time one filling will last and give ample smoke, I find it all you claim. In the spring I shall want several. I always want the best."

N. E. FRANCE, Platteville, Wis.

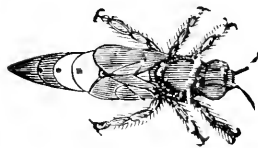
Grant Stanley, Nisbet, Fla., July 24, 1904, writes: "After giving the Danzenbaker 20th Century Smoker several trials, can say it surpasses all smokers it has been my liberty to try; it will not go out until the fuel is all consumed, and it produces a cool smoke, a feature very necessary in any first-class smoker."

Price \$1.00; three for \$2.50. By mail, 25 cents, extra.

F. DANZENBAKER, Miami, Florida.

TEXAS QUEENS

The Famous Honey-Producers



Texas
 Queens

The Famous
 Honey-
 Producers

I am booking orders now for April, May and June delivery, for Carniolans, Italians, and Goldens—equal to the best, regardless of price. PRICES:

Tested Queens.....	\$1.00 each;	\$10.00 per doz
Warranted75	7.00
Untested50	5.50

GRANT ANDERSON, Sabinal, Texas
 4-07-4t

BEE-KEEPER'S SUPPLIES

New Catalogue Lower Prices
 Modern Machinery Better Goods
 We are Manufacturers

MONDENG MFG. Co., Minneapolis, Minn.
 4-04-6t 147-149 Cedar Lake Road

ADVANCED Bee-Culture

As Regarded by National Officers.

The officers of the National Bee-Keepers' Association are bright, practical men, and their views on subjects apicultural are worthy of consideration. Here are the views of three of them regarding the book *ADVANCED BEE CULTURE*.

The President, Mr. L. A. Aspinwall, writes as follows:

As to your book, *ADVANCED BEE-CULTURE*, I esteem it very highly, and must confess that it is, according to my judgment, one of the most practical works on bee-keeping that I ever read.

The General Manager, Mr. N. E. France says:

In a few words you have given the up-to-date, advanced methods of profitable bee-keeping for progressive bee-keepers, and I wish every member of the National had a copy.

Jas. A. Green, Secretary of the National says:

I have just finished reading *ADVANCED BEE CULTURE* and write to express my hearty appreciation. The most experienced bee-keeper may study it with profit, yet it is written in so simple and concise a style that even the beginner can understand and profit by it.

Advanced Bee Culture is a book of 230 pages, the size of the Review, profusely illustrated, beautifully printed, and substantially bound. The price is \$1.20; or the Review one year and the book for only \$2.00.

W. Z. HUTCHINSON,
FLINT, MICH.

MARSHFIELD GOODS

are made right in the timber country, and we have the best facilities for shipping; direct, quick and low rates. Sections are made of the best young baswood timber, and perfect.

Hives and Shipping Cases are dandies.

Ask for our catalogue of supplies, free. ❀ ❀ ❀

Marshfield Mfg. Co.

Marshfield, Wis.

No Fish-Bone

Is apparent in combhoney when the Van Deusen, flat - bottom foundation is used. This style of foundation allows the making of a more uniform article, having a *very thin* base, with the surplus wax in the side - walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen *wired*. Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,
Canajoharie N. Y.

DITTMER'S FOUNDATION

Why do thousands of Bee-Keepers prefer it to other makes? Because the bees like it best and accept it more readily.

DITTMER'S PROCESS IS DITTMER'S

it stands on it's OWN NAME and it's OWN FOUNDATION, to which alone it owes it's reputation and merits.

We are now ready to make prices for next season, for WORKING WAX for CASH and for full line of supplies.

Wholesale and Retail,
Free Catalogue and Samples.

Gus Dittmer,
Augusta, Wisconsin.

A GREAT IMPROVEMENT

WILL BE FOUND IN

THE AMERICAN BEE-KEEPER FOR 1907

It is profusely illustrated and enlarged and contains only articles of the most practical as well as scientific nature. A special corps of the best writers has been engaged. The editors are Harry E. Hill and Arthur C. Miller, than whom there are no more practical or experienced Bee-Keepers in this country. We have published the American Bee-Keeper continually and regularly since 1890.

Regular subscription price 50c a year. One year to new subscribers 35c, three years for \$1.00.

Send for sample copy and our new illustrated price-list of

Bee Supplies of all Kinds.

Guaranteed highest quality at lowest price.

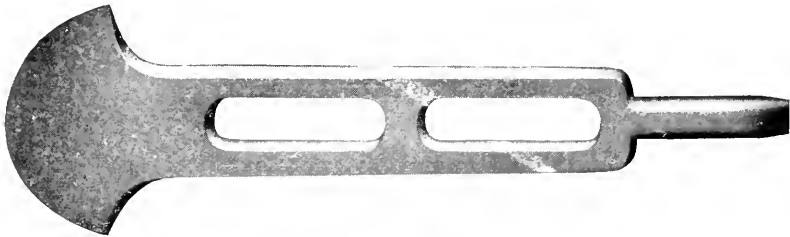
The W. T. Falconer Mfg.
Company,
JAMESTOWN, N. Y.

(Established 25 years.)

Something New = The Ideal Hive-Tool

Bee-keepers have long needed a Tool with which to work among the hives during the bee-season. The Tool shown here was invented by Wm. Muench, a Minnesota bee-keeper, some years ago, but it was not on the market before. We have lately bought this Tool, and all rights, from Mr. Muench's widow, and have had the first lot made. They are ready for delivery now.

Best Hive-Tool



Only 30c. by mail

(This picture is exactly one-half the size.)

DESCRIPTION.—The Ideal Hive-Tool is made of high-grade malleable iron, much like wrought iron, $\frac{3}{8}$ inches long. The middle part is 1-16 inches wide and $\frac{7}{32}$ thick. The smaller end is $1\frac{1}{4}$ inches long, $\frac{1}{2}$ inch wide, and $\frac{7}{32}$ thick, ending like a screw-driver. The larger end is wedge-shaped, having a sharp, semi-circular edge, making it almost perfect for prying up covers, supers, etc., as it does not mar the wood.

What Dr. Miller and Miss Wilson Say of It:

In the first edition (1903) of Dr. Miller's "Forty Years Among the Bees," page 58, he says: "Of all the hive tools I have tried, I like best the Muench tool." On Jan. 7, 1907, he wrote us saying he thought "just as much of the tool as ever."

Miss Wilson, Dr. Miller's assistant, says this of the Ideal Hive-Tool: "It is an ideal tool. In fact, I don't see how it could be improved upon. I am sure we would feel utterly lost in the apiary without it. . . . You will have to try one yourself if you want to know its worth."

The Ideal Hive-Tool Free to a New Subscriber.

To a new subscriber to the **Weekly Bee Journal** for one year (at \$1.00), we will mail an Ideal Hive-Tool free; or we will mail the Hive-Tool alone for 30 cents (stamps or silver, if more convenient). Sample copy of the **Weekly American Bee Journal** sent on request; or a 3 months' "trial trip" for only 20 cents. Address,

GEORGE W. YORK & CO., 334 Dearborn Street, CHICAGO, ILL.

SECTIONS One-piece, strictly first-class, of all standard sizes, at \$4.00 per thousand for No. 1, and \$3.50 for No. 2. Plain sections 25 cts. less. Other supplies at low prices.
2-07-1f J. E. MORGAN, Dansville, Ingham Co., Mich.

Fine, Three-Banded Italian Queens

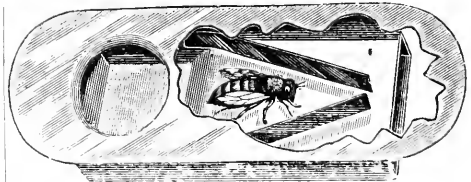
Of a good honey gathering strain, at 75 cts each, for a single queen; three for \$2.00; one doz. \$7.50. Satisfaction guaranteed. Orders booked and filled in rotation.

3-07-3t JULIUS HAPPEL, R. F. D. No. 6, Evansville, Ind.

BEEES, QUEENS AND SUPPLIES

We manufacture standard dovetailed bee-hives and supplies, cheaper than you ever bought before. Our Queens and Bees stand at the head in quality. Untested 75c, each; \$4.25 for 6; or \$8.00 per dozen. Tested, \$1.25 each; \$12.00 per dozen. Select tested, \$1.50. Special prices to dealers and in large lots on application. Dittmer's foundation Catalog free.

THE BEE & HONEY COMPANY,
Will Atchley, Prop.
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W. Z. HUTCHINSON, EDITOR AND PUBLISHER.

VOL. XX. FLINT, MICHIGAN, JUNE 15, 1907. NO. 6

Making an Absolutely Bee-Proof Bee-Dress

BELOW I write about a bee-dress I am using which is absolutely bee-proof. If this will be of no interest to you, please read no farther; throw this in the waste-basket and so save your time. Thinking you may decide to read it, here goes:

Make an over-shirt of denim, sleeves rather long, and small at the wrist. Let the garment be very large in the neck, with no opening in front or behind. Make a head-dress *a la* Alexander, only about five inches high. The diameter of this is decided by the circumference of the hat brim which should be its equal. This also decides the size of the neck opening. Put the seam of the wire-cloth head-dress behind and sew the lower edge very firmly to the dress.

Now take a piece of denim sufficiently long, and about six inches wide, and sew one edge to the top of the head-dress. Have a hem in top edge, put a string through the hem, and tie this on your hat. Make the over-shirt plenty long, so that

you can tie a string around below the waist.

For the hands, the very best thing I can get is a pair of gloves made of a rather light colored twilled cloth, costing ten cents a pair. They are quite bee-proof, and short fingered. To the wrists of these gloves sew the ankle ends of a pair of women's stocking legs, and in the top ends sew a piece of garter elastic ribbon, making them tight enough to clasp the arms firmly. That makes the whole dress.

Put a stiff-brim straw hat in its place and *leave it there*. Draw on the rig over your head, tie around the waist rather tightly, put on the gloves, and you can *defy* all the bees in your apiary. I use these gloves without cutting off any of the fingers.

Now for its advantages: The first and greatest is that it is *absolutely* bee-proof. You *know* that there are no holes where a bee can slip in. I was surprised to find it quite cool. It is quickly put on and

taken off. I can take it off in twelve seconds. One motion for each glove, another to loosen the string at the waist, then reach over the shoulder, catch hold of the back and jerk the whole dress off, and there you are!

If you should read as far as this, I would like to have you try this dress next season, and, if worth publishing, do so, but I do not wish my name mentioned.

Some of the pictures showing Alexander's head-dress, show a cover over the back of the neck and the sun shining in the eyes. To me, both are objectionable.

It may be that I think more of this dress than any one else would. I am over 70, and easily get "rattled." Before I had this dress, I would put off attending to the bees when I knew I ought to, because I could not go at the work confident that I would not be stung—perhaps enough to drive me away. Now I attend to the work when it *should* be done. Before, I was completely exhausted when my work was done, and often said that I wanted no more bees than I then had. Now I propose to double the number the

coming season, though I do not want to tell you how few I would then have for fear your mouth would not stand the strain.

If you cannot get the kind of glove mentioned, I will send you a pair (no charge), as they please me much better than anything else I have tried.

There is just one point in which I think I could improve this dress: I sometimes have a little difficulty in seeing eggs in the cells. I would improve this by putting in a glass. In an old dress I made, I had one. It was put in quite firmly, but I had to take it out as the moisture from my breath settled on the glass. I cut a glass of the size I wished, filed off the sharp edges, and then sewed a wide tape around the edge stretching it *very tightly* and having it lap over on both sides of the glass. Where the corners were turned the tape made a lap which was sewed together. This tape was to have something to which to sew when fastening the glass in its place.

AUBURN, N. Y., March 4, 1907.



Helpful Hints in Extensive Bee-Keeping.

E. D. TOWNSEND.

The sectional honey house is set up at each yard. Sometimes we build them at the yard; oftener they are built at home, out of season, then in the spring they are loaded on a wagon and drawn to the out-yards. We try and place them on the lowest side of the yard, so as to wheel our loads of honey down hill. If it is possible without wheeling too much up hill, we set the honey house door as near the middle of the yard as we can. This makes the honey house nearer the bees,

thus facilitating the wheeling in of our crop of honey.

Our bee yards never have more than 100 colonies at a time; and this is fall-count. With this number, fall-count, we usually have, after our winter losses and queenless colonies are deducted, somewhere between 80 and 90 colonies with which to commence the season.

We find a 12x16 foot house as large as we can load and draw handily, without going to the expense of making the sec-

tions smaller, than to have them come apart at the corners, and the roof in two parts, as they are. The description is something as follows:

The floor is in two sections, each 8x12 feet in size; and the foundation is of 2x6 inch material, placed 16 inches apart, with a 2x6 inch spiked on the ends. The floor is of planed and matched lumber. The siding is planed lumber, put on up and down, then lined inside with felt roofing. This roofing is simply a good grade of tarred paper, and costs, here at our hardware, \$2.00 per 100 pounds. This paper is what we depend on to keep out the bees, and is fastened on with lath, being careful to get it on nice and smooth.

The sides and ends of the house are built separate, and bolted together at the corners. The posts are 5 feet 10 inches. The roof is one-third pitch and each half is built separate. The frame work, except the foundation, is of 2x4 scantling planed down to 3½x1½ inches, as this is heavy enough for this size of building, and makes it lighter to handle. We use seven rafters on each side of the roof, and this leaves the space between the rafters such that one width of tarred felt will paper between each pair of rafters; for we paper both overhead and sides. Houses papered during April lose nearly all the smell of tarred paper, by extracting time. The roof is covered either with shingles or tarred felt.

USE WIRE SCREENS AT THE WINDOWS BUT NOT AT THE DOOR.

With the white building paper on some of our honey houses, the mice make these houses headquarters. One of the most m'ice-ridden houses was at our Isabella yard. A year ago this house was papered with tarred felt paper, and we have never seen a mouse in that house since; neither have there been any ants there either. Then, we are quite sure that the robber bees are not nearly as bad around a tar-lined house; at any rate, they have never troubled us in these houses yet. While I do not suppose that this paper

would keep out robbers if one were careless and let them get started, still, I am satisfied that tarred paper is distasteful to the bees, as it is to mice and ants. If this proves so, there may be more in this tar paper than we realized at first. There is one objection to this dark colored paper, and that is, the honey house is not so light as if it were papered with white paper.

But to return: The frame for the sides is of three 16-ft., and two 5-ft. 10 inches pieces of 2x4. When nailed up, the three long 2x4's furnish a plate, a sill and a girt. Now this girt is placed at exactly the right distance from the plate so that the window will exactly fit in between it and the plate, and slide on the shop-window plan. A storm window is made of the same material as the siding and slides in as mentioned above. A screen of wire cloth is nailed on the outside to keep the bees out. As all our work in these houses is done during warm weather, we need no glass, but work with the storm-window open. One reason for discontinuing using glass, was the danger of breaking it in moving.

USE WIRE SCREENS AT THE WINDOWS BUT NOT AT THE DOOR.

A window of this description is built in each side, a little in front of the center, which brings them in that part of the building where most of the work is done. This makes a light, airy room, where it is a pleasure to work, compared to some of the small, dark dungeons I have seen some bee-keepers use.

A 2-foot 8 inch, by 6-foot 6 inch paneled door is placed in the center of the front end.

We have no wire screen in our doors. When I began bee-keeping, in the 70's, it was fashionable to have a screen. All the honey house doors, where I can remember of visiting, were provided with a wire screen. So, of course, I fell in line. It did not take long to learn that robber bees were attracted to that part of the building covered with wire screen; these

openings causing a draft through the building where the screens were, the aroma, or scent, of new honey caused the robbers to congregate at the screens. Then when one of us entered the honey house, a raft of these prowling robbers would go in with us. The remedy was simple; use the panel door mentioned above, then the robbers will congregate at the windows, and leave the doors practically free from bees.

The frames for the ends are built similar to the ones for the sides, with the addition of gable ends built at one-third pitch. The siding is put on up and down and projects down an inch or so below the sill, so the water will not crawl in under upon the floor. The foundation is made an inch scant of 12x16 ft., so that the siding that projects down an inch will

slip over it, letting the sill of the building rest on the floor.

The 2x4 corner posts are set in such a way that when the building is set up the flat sides come together, thus making it more convenient in bolting them together.

It is convenient, when setting up the house, to so locate it that the ground slopes towards the door, in front. Then do not get the building so high from the ground but that a little banking up in front will make a bridge, so that the wheel-barrow will run in on nearly level ground.

Such a house will cost \$50 or \$60, I should think, in this locality; and it weighs between 5,000 and 4,000 pounds. We draw a house to one load, on our flat bee-rack.

REMUS, Mich., Feb. 12, 1907.



Sections and Supers, Management Before Swarming.

E. F. ATWATER.

FOR the production of comb honey we prefer the standard, eight-frame hive; and supers for $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{3}{8}$ bee-way sections, containing six, single-tier, wide frames. The wide frames are similar to the ordinary-section holders, only we have the bottom-bars made $\frac{3}{8}$ inch thick, to do away with the sagging and all-round pitiful frailty of the ordinary section-holder with its bottom bar only $\frac{1}{4}$ inch thick. The top-bar is only $\frac{1}{4}$ inch thick and fastened with only one small nail, not cement, coated at each end.

This allows the top-bar to be slightly loosened, if necessary, that the full sections may be readily removed from the wide frames. With this arrangement, no "play" need be allowed between the top-bars of the sections and the top-bar of the wide frame. This arrangement is

just *fine*, as it does away with the worst faults of the old-style wide frame, yet protects the sections from propolis and stain as does no other super. We use some other supers as an object-lesson to our students. We have some T-supers with their many faults—the hopeless staining of the top and bottom of every section, the all-round lack of "fixedness" of its contents, the corner-spaces and little sticks to fill them—all these, and more, combine to make the T-super very undesirable in many localities.

The section-holder without a top-bar leaves unprotected the top of every section to be stained according to the slowness of the flow and the time required for the bees to fill the super. The bottom-bars, as before stated, are so frail as to sag, and do not prove desirable.

When our helpers begin cleaning sections from either section-holders or T-supers, a loud protest is heard, to be followed with expressions of relief when they again come to sections from the wide frame supers. It is evident, from letters appearing in some of the journals, that many bee-keepers have no conception of the appearance of a properly cleaned section. We do not clean them so thoroughly as some, yet we are not satisfied to rub them over wire screen, or with any other method that only begins the work of scraping. We remove all *stain* from outside surfaces and all edges. With the wide frame, the propolis and stain are confined to a line around the edges where it is most easily removed.

So long as there is no other cheap and easy way to prepare our honey for market, the wide frame super will be supreme. When we find how to hide the stain on the sections, the wide-frame super will be a back-number.

We use both the tin and the wood separators, and it would be difficult to say which is preferable. Each has its good points. After an extensive test, extending over several years, we have discarded the fence-separators and plain sections, as inferior to the older styles. The solemn truth, for our localities and our markets, is that we get less honey in the new-fangled sections and supers, it is not so uniformly salable, and it does not sell for so much money. We keep a few of the fence-supers in use for the benefit of our helpers, but we have to be satisfied to take 25c. per case less for the honey in 4x5 sections than for the old, standard, 4¼ x 4¼ x 17½ sections. In our comb honey yards we use the Hoffman frame. We might prefer staple-spaced frames, as more easily handled, but for the fact that it may be expedient, some seasons, to produce some extracted honey in a comb-honey yard, when the staples would interfere with rapid uncapping. We consider the "Alpaugh" spacing method and device well worth a trial.

At the lower corners of all of our frames

we insist on a staple projecting ¼ inch. These prevent the frames from becoming far out of square, add considerably to the ease and safety of manipulation, and are used by Coggsball, Hill, Somerford and others.

Our covers are largely of the "Acme" type, telescoping the hive or super almost two inches, with an air space above quilt or inner cover. Covers of this type are used by E. W. Alexander, R. C. Aikin, F. Greiner and many other extensive producers.

In locating the yards, besides the best possible pasturage, we want the best available wind-break as of almost equal importance, even in this favored section, with its phenomenally low wind velocity.

We arrange our colonies in pairs, on double stands, each pair, (if yard-room will permit) several feet from the next; rows facing away from each other where "the lay of the land" will allow, so that a wheel-barrow may pass along the rows at the rear of the hives, giving the operator easy access to the back end and one side of each hive.

We expect to examine the colonies in April, although no harm is done if the colonies are not disturbed until May, except that there is then a possibility of work piling up on us faster than is profitable. At this examination we aim to clip each queen's wing, if not already clipped, recording her age with the Alexander tin tags, on the front end of the hive.

Some equalizing of stores is done, and drone-comb supplied to a few colonies of choicest stock, usually largely Carniolan blood.

Most of the colonies have passed the winter in one-story hives—a few in two-story hives. In May, if the season be favorable, some of the single-story colonies will become crowded, so we inspect each colony at least twice in May, adding an upper story containing eight worker-combs to each strong colony. If we are in doubt if any particular colony will need more room we either give some of its brood to a colony not quite so strong,

or else give an extra story of combs below, although that is not nearly so sure to discourage swarming until the flow arrives, as is the plan of adding an upper-story of combs. This is contrary to the Simmins' theories, but true with us as with many others.

If the bees need it, we feed as required outside in tubs full of alfalfa stems or excelsior. Only one season has this been necessary, although it might have paid well some other seasons. At first we start the bees by breaking up some old combs into pieces about 1½ inches square. We dip these in the feed, lay one at the entrance to each hive, kick the hive if the bees are not numerous at the entrance, and so on. Then we go around and pick

up the bits of comb, with bees at work on the feed in the cells, and carry them on a queen-excluder or escape-board, to the tub, where they are all dumped into the feed. In a few minutes every colony will be at work, and the feed will all be gone long before many of your neighbors' bees find it.

Our management is not fixed or stereotyped. We are on the lookout for improvements. We condemn no method finally after only one season's test. We may experiment until we have the "crown of success", but it is not true with us, that this "experimenting is ended." Let us press forward.

MERIDIAN, Idaho, March 18, 1907.



Controlling Increase by Gutting Out the Brood.

F. COVERDALE.

CONTROL of increase is not difficult to accomplish in the sense of keeping the number of colonies about the same; but to attain this end with the least labor, and to obtain the greatest profit out of the bees for the work done, is a weighty problem.

If one uses eight-frame hives, is a producer of comb honey, and, to keep down increase has to keep one extra hive for nearly every colony, or, say, at least fifty extra hive bodies for every one hundred colonies kept, these extra hives become depreciating capital, or a stock of extras to be kept up. The plan that will make it unnecessary to keep on hand extras is the plan for which I watch and wait. So far, I know of no such way that would be at all successful in my location.

The caging of the queen in any of its forms is disastrous here; not only because

of the extra labor involved, but because the bees cease to work with the same vigor, and it defeats the securing of a fall crop. Any plan in which a condition is brought about causing the old queen or bees to destroy all queen cells, and then recruit the same into a strong working colony again, can't be depended upon, because the swarming fever will again appear in too many cases. Any plan that has for its aim a young, newly reared queen, on old combs, or a full set of combs, in a populous colony, can't be depended upon not to swarm; for even the "set-backs" swarm if not "thinned out" after the young queens begin to lay.

Any plan that rids the hives of all brood, kills all swarming just as effectually as if natural swarming had taken place. However, there is something about shook swarms not exactly the same

as natural swarms; for instance, at times, many of them abscond; and so do natural swarms, at times, and I don't know just *why*. I have known a few natural swarms to abscond every bright day, and build drone comb until they dwind'ed to a mere handful; but more artificial swarms seem to turn out this way.

One plan is to open a hive that is preparing to swarm, cutting out and removing the brood, leaving the honey parts in the frames, and this colony will take right hold of business from the start, and will be no more likely to swarm than would a natural swarm. In this case the brood combs are set in a box with a screen cone in one side, and moved up close to the entrance of the old hive; and this colony makes a boomer to work in sections as the young bees are constantly reinforcing the old stand. This plan keeps down all increase and gives an excellent crop of honey of prime quality, if any is to be had.

This hatching-box as an extra would have to be kept as stock on hand, but I think no one need fear results. The combs would have to be melted into wax as soon as the young bees were hatched. Those cut off combs of brood, when set in the hatching-box, must be kept spaced so as not to let one comb of brood touch the other, and a few old bees must be run in with the same to clean up what honey might be dripping, and to furnish heat to keep the bees hatching. Again, there should be enough honey cut out with those brood combs to last until all bees are hatched.

One plan which I have tried on a small scale is to set a number of combs on populous colonies for the purpose of getting them filled with the first honey that comes in, then use those combs of honey for hiving shook swarms on, one comb in the center of each hive that a new shook swarm is to be run into. This comb of honey seems to serve two purposes; first it causes the bees to stay better; second, this comb is emptied by the bees and the honey carried up into the sections that

already contain newly built combs and some honey. The bees seem to get the habit at first of going up into the sections, and thus keep it up, a thing of itself of much importance. Then the queen seems to be more willing to go to laying in this old comb, and at the same time, generally, a goodly amount of worker comb will be built. Whether the bees are allowed to swarm naturally, or treated as above, all bees, for the first ten or twelve days, should be run over into the new swarm, as comb-builders and recruits in general for the working colony.

While I think it would be decidedly better to have colonies that would go right on without getting the swarming fever at all, colonies treated as above will, as a rule, give a fair account of themselves in the way of some very nice comb honey.

To manipulate colonies so as not to swarm at all when run for comb honey is a thing yet to be discovered. All that I have been able to accomplish is to retard and to bring about conditions that will cause the swarms to come on in a rush at the *right* time. This can be accomplished by bringing all colonies up to the beginning of clover bloom all of one strength, and when honey begins to come in withdraw two frames of capped brood from each colony, and replace with full sheets of foundation. Or this may be let go, and the swarms will come on about one week sooner, and a larger number of swarms will be the result. In any case, a super full of sections should be set on at the first appearance of honey; and there ought to be a full row of bait-sections along each out side row. These bait sections should first be leveled by a Taylor comb leveler. This will help much in keeping down swarms.

If it happens that we have not managed to keep down an increase, we could have the extra colonies converted into honey, so as to have only our usual number to go into winter quarters.

If there is no fall flow, better run all extra bees into the working colonies during the clover, or basswood, or sweet clo-

ver harvest, or what it may be. Here we have heartsease, so the "setbacks," or old colonies, after being drained of bees for ten or twelve days, are given a queen and allowed to build up ready for the late flow. During this late flow the working forces are run from as many inferior stocks as we wish to get rid of, and at a good deal of increased amount of fall surplus; and when the brood is all hatched from these bee-robbled colonies the honey can be extracted, and we can do as we please with the old combs.

MAQUOKETA, Iowa, Jan. 22. 1906.

[The idea of controlling increase, or preventing swarming, by allowing the bees to build a new set of combs on the

old stand, and utilizing the young bees as they hatch out in the old combs, is gaining ground. Shook swarming is practically this plan, if the bee-keeper so elects. Mr. Atwater described such a plan recently; that of putting the old brood nest below a new brood nest and allowing the hatching bees to come up through a piece of queen-excluding metal. Mr. Lyman has a plan that is fully described in the Extracted Department for this issue. Mr. Coverdale would simply cut out the brood and put it in a box by the side of the old hive. Seems to me this would be a messy job, and I think I would prefer either the Atwater or the Lyman plan to this, but there is nothing like actual practice to decide these questions.—EDITOR.]



How to Use a Queen Excluder in Extracted Honey Production.

B. E. CROWTHER.

WHEN the colony is strong enough in the spring, set a body of empty combs on top, draw one or two frames of brood from the middle of the brood nest, put them in the upper story and replace them with empty combs from the body.

If there is plenty of honey, the queen will lay these empties full very soon; and the operation can be repeated in a few days if the weather is favorable and the queen does not spread enough of her own accord. If there is plenty of honey, and the queen is prolific, even a third or fourth story may be needed.

In this way, the queen is encouraged to do her best up to the time when the workers from her eggs will be of no use in the harvest, which begins here about June 10th to 15th; at this time I put in the excluder just above the first story, first making sure that the queen is below. Some of the frames from below may be

removed if desirable to still more restrict the queen.

So far, there is but little swarming, and no great army of bees is left after the harvest to consume what has been gathered. It is an easy matter, in a poor locality like this, to run a colony for extracted honey in such a way as to have most of the surplus (?) consumed in rearing and sustaining bees after the harvest is over.

It would seem that this might be a good way to work out-yards, especially if one did not favor brood-spreading. Omitting that, it would not take more visits than other plans, and in localities having a fall flow (we have one here of more or less value) they will be in fine condition for winter; anyway the honey saved in this way would pay for the feeding many times over.

NO. KINGSVILLE, Ohio, Jan. 17, 1906.

Opening of the Harvest and the Management in Out-Yards

M. V. FACEY.

IN a great many, or perhaps nearly all, localities in the north, the surplus season opens up with the blooming of white clover. Bees should now be strong: most of them occupying two stories, some three, but others only a single story. Perhaps half the battle of our summer's campaign has been won. Our forces are strong, energetic, and ready for business.

In reality, however, we have only reached the place that shall test the stuff whereof we are made. We have reached the place wherein the next few weeks will determine whether we are able to lead or perhaps compel our forces to victory, and the extent of that victory or whether it shall all mean defeat and disappointment. There are few localities in the North wherein even the worst seasons will mean uniform defeat, if the bees are handled so as to take advantage of every opportunity, or uniform success in the very best season if they are unintelligently handled. Therefore, at this time every step should be carefully weighed; all prejudices dispensed with; all our knowledge of the habits of bees, their capabilities and possibilities must be brought into play. We must always be ready to learn from ourselves and others; and we must often dare to do some things *judicially* that may *fail*, that we may reach eventually the *greater* success; for bee-keeping, as yet, is only passing through its period of development. In securing our honey crop, we desire to secure, first, the best honey possible, second, the largest crop possible.

EXTRACTING ALL HONEY AT THE OPENING OF THE FLOW FROM CLOVER.

White clover honey is the very nicest honey we produce, and so susceptible to deterioration by other honey that I make

it a practice at the commencement of the yield to remove all the darker and stronger flavored honey of the spring months from the entire colony, both from the upper and lower stories. This honey is very useful for feeding for stimulating purposes, and for spring feeding, but can not be put upon the market if the bees had any stores from sugar syrup which may have been given them for stimulating purposes, or may have remained over from syrup given them for winter stores the fall before.

If this work is properly done it does not damage the brood in the least. The weather is warm, or rather, hot, and the honey throws out freely, but we must not try to clean the combs *too* thoroughly, since the two secrets of saving the brood undamaged is first to use only *speed enough*, and, second, not to clean too closely. With the Novice extractor, old style, giving from four and one-half to five turns of the handle was all that was permitted. It takes about six days for myself and two helpers to go over my bees in this way.

THE STIMULATING EFFECT OF EXTRACTING HONEY.

It may seem strange to those who have never tried it, but colonies extracted clean in this way will manage to put into their hives at least one-quarter more honey for the next extracting, than if they had not been touched. It seems to put an extra vim into their work, and if we extract some, and leave others, we can pick out nearly every one of the extracted ones, if we go to them about two hours afterwards, by the way they are rushing in their honey. Another advantage is that the bees fill the upper stories with honey first, while the queen is busy filling the lower story, so we commence our honey

campaign with this story occupied almost entirely with brood—often occupying every frame in it.

EARLY EXTRACTING LESSENS SWARMING.

While this condition favors the rapid storing of honey above, it also greatly lessens the tendency to swarm, and if the honey is taken promptly from the bees as soon as ready, and plenty of room given them as they increase in numbers, swarming will be reduced to a minimum.

This trip takes the place of my regular round; therefore, I attend to all the necessary yard-work that may be required to run them to the next extracting day. This work includes the putting on of additional stories wherever the strength of the colony will permit it. I always put these stories, whether they may be of comb or foundation, on top, except that I put two or three of the newly extracted combs in each newly placed story to bring the bees promptly there. In this way their work is less interfered with, and by the time the other surplus stories are filled this one will also be ready for immediate filling; but if I have exceeded their capacity, as I sometimes do in a medium or light flow, this is the body I would rather have neglected.

I thus commence the white clover season with colonies cleaned of honey, but they hustle, and in from seven to twelve days, they will be ready to extract again. This is, properly speaking, the first real extracting of the year, and if it proves to be a fair year for clover it is such clover honey as everyone wants.

The question may be asked as to how fully the honey will be capped on the basis outlined above, and in answer I would say, the combs should be about one-half capped; that is, each comb should be capped from the top about half way down in the upper story, and in the lower stories they will be capped somewhat more fully, many of them entirely. If it is left longer than this, it means just so many days diminished honey crop, with practically no improvement in quality, and it also means swarms, and, to

me, swarms mean loss; yet there will be an occasional one each time which will insist on making ready to swarm, and if I find this to be the case, I immediately accommodate the bees by dividing the colony. I continue adding to the number of stories until they are about four high (ten Langstroth hives) and in case they become over-crowded, then I find it most profitable to divide them, anyhow.

ADVANTAGE OF HAVING AN EXTRA EXTRACTING CREW.

When the surplus season is under way, and my extractors in real business, everything gives way to it, and all necessary yard work is done during our extracting visits, and this continues throughout the flow. Each yard is visited in rotation, and the order of the trips is exactly according to the order of our visit when cleaning out the spring honey, and, as we proceed, we know from each yard what to expect from the next one; and if the honey gains on us a single day it means that an extra extracting outfit is put in to bring us back to our place; and sometimes during a heavy flow the second outfit is continued as long as the rush continues. How do I get the second outfit to order? I have already made arrangements with a farmer who has repeatedly come to my rescue at such times in my past experience, to take charge of a second extracting outfit during the surplus season of the coming summer, in case the bees should crowd me.

HOW TO MANAGE WITHOUT QUEEN EXCLUDERS

I use no queen-excluder above the brood-nest. By extracting the honey from the brood-nest as I have recommended, for my first round, the queen will occupy it very nicely, and so fully that she seldom leaves room for more than three or four pounds of honey, and, occasionally, she excludes all honey. Most of my queens will occupy also a part of the second story with their brood. As the season advances the queen begins gradually to leave the bottom hive and occupy the second story, so that, frequently, on the third trip, though some-

times not until the fourth round, (I often make four rounds if the season proves good) we may find the original brood-nest deserted by the queen, the brood left there all capped over, and the bees filling the combs with bee-bread just as fast as the brood hatches. When I find this taking place I simply remove the lower story and put it on top, which operation again places the queen and the brood where they belong.

The omission of the queen-excluder greatly lessens the tendency to swarm, which, to me, is quite important, since I, in no case, make any provision for the hiving of any cast swarms at any season of the year. It also permits a somewhat larger brood-nest, hence, a more populous colony and a greater yield of honey.

Bee-keepers not allowing the queen the full range of the colony commonly have an idea that the queen will so occupy the surplus chambers as to become a nuisance, but, in all my experience, I have not found it so: especially since a small patch of brood in a frame in no way interferes with convenience in extracting. In fact, during the heavier flows, at least in this neighborhood, it pays to extract all combs with any considerable amount of well-ripened honey in them wherever they may be found, since they will be just as full the next time with the honey removed as if we had left it.

I use eight frames in my surplus stories in a ten-frame hive.

PRESTON, Minn., March 30, 1907.

Editorial

True Economy does not consider price it considers *results*.

.....

While a man is making \$2.00 on some side-issue, he is generally losing about \$3.00 in his main business.

.....

The National Convention will be held this year at Harrisburg, Pennsylvania—time for holding meeting not yet set.

.....

Bro. Muth, of Cincinnati, has brought out a veil that he calls the Ideal, and it is nearly, if not quite, as bee-proof as the one shown in the frontispiece. More particulars and a picture next month.

.....

A Stern Angel, sword in hand, guards the gates of the finer kinds of success, and suffers no one to enter who has not



waited and endured and worked and overcome. *H. W. Mabie in Ladies' Home Journal.*

.....

Courage and confidence are needed to run the bee business this year, to keep on putting money into feed for them: but if no crop is received this year, bees will be worth \$10.00 a colony next year.

.....

White Clover makes such a poor showing here at Flint, that I have decided, at this late date (June 15th,) to move the most of the bees that I have here to Northern Michigan, where the wild raspberry is coming on nicely. I shall have no use here for the new honey extractor that I bought last year and would be glad to sell it. It is a Root, four-frame, (Langstroth) with brake and automatic reversing device. It cost \$23.00 but I would sell it for \$20.00.

The Bingham uncapping knife has its edges beveled like this  the Jones knife is beveled like this  and Mr. W. A. Chrysler, of Chatham, Ontario, says he wonders why he has been so stupid all these years, as to keep on using the Bingham knife. With the latter, he says we have to *scrape* off the cappings, while the former allows us to *cut* them off. Who has used both styles of knife and can agree with Mr. Chrysler - yes, or disagree with him?

Criticism, to be of any use, should be helpful. There is no great benefit in telling a man that he is doing something wrong, unless we can also tell him how to do it better. Then, there ought to be a kind, helpful spirit shown in criticism. Occasionally criticism is made in such way as to lead one to believe that the chief pleasure or object of the critic is to show that some one is in the wrong; made in such a caustic manner as to rouse the combativeness of the one criticised. Criticism ought to be frank and free, but it need not be insulting nor insinuating in tone.

Apicultural Investigations at Washington, D. C., are now in charge of Dr. E. F. Phillips, and have been since February 1st. Mr. Frank Benton is no longer connected with the Bureau of Entomology. Dr. G. F. White has been appointed as expert in bacteriology; Mr. Franklin G. Fox as assistant in the apiary; and Mr. Burton N. Gates as colaborer in Massachusetts. I know Dr. Phillips, and am certain that he will prove to be the right man in the right place. I presume the other appointments will prove satisfactory, but I have not the pleasure of a personal acquaintance with the gentlemen.

A Possible Use for the Bee Moth's Larvae

It may be only a sensational story, but the Far-Western Bee-Keeper tells of a

possible use for the bee moth. As is well-known, the bee moth's larvae is able to digest wax, something impossible for any man or beast. Then, so it is said, the germs of tuberculosis are proof against any remedy because they are enveloped in a layer of wax. Their whole power of resistance lies in this envelope. A professor of the Pasteur Institute of Paris, put two and two together and tried feeding the germs to the bee moth's larvae, with the result that the germs were dead within half an hour. Just how the discovery is to be utilized I don't know. Perhaps we will have some kind of innoculating anti-toxine made from the digestive fluids of the bee moth's larvae that will destroy the germs of tuberculosis. This all sounds very fanciful, but wonderful things are sometimes done.

A Booklet, or leaflet, for selling honey, one of the right kind, the best can be gotten up, has not yet been made. I was reminded of what might be done in this line by receiving a little booklet from a Mr. Albert Schimmel of New York city, in which he sets forth the advantages of buying milk from his dairy. He gives a picture of his own enterprising, honest-looking face. Then a view of the stables, outside and inside, everything neat and clean, and cows standing in their comfortable stalls waiting for their rations; following this is a view of the gasoline engine that furnishes the power for running the milking machines, for that is the method followed, and a view is also given of this operation. The milk goes into the cans without even coming in contact with the air. It is then cooled and bottled. In all of this work the men are shown in white caps and aprons. Then there is a view of the cows out in the pasture taking an outing. There is not very much reading matter; just a few lines opposite each picture; so few that even the busy man will stop and read them. The reading of this little book made me feel that Mr. Schimmel was furnishing milk that

was all right that I would patronize him if I lived in his district.

Just think of the possibilities of advertising honey in this same way. Views of the apiary, of the bees building comb, of piles of finished sections, of the honey extractor, of honey in bottles or cans. Some beautiful little views and short, appropriate paragraphs of reading matter. Why doesn't some one get up such a booklet? Why don't I do it? I would if I were in the retail honey trade.

Some Criticisms on Flat Covers.

Mr. A. D. Shephard, of Wisconsin, objects to a flat cover on the ground that the water and wind work in under its edges in the spring. I have never seen any great trouble from this source, and if we surround our hives in spring with tarred felt, both of these objections are removed. Soon as it becomes warm weather the bees stop any small crack with propolis.

Another point that he brings up is that the heat of the sun in hot weather will affect the bees more than it would through a cover made of some material that is a poorer conductor of heat—a metal cover lined with several thicknesses of asbestos, for instance. Of course, a shade board would remedy this trouble, but Mr. Shephard would like to avoid the expense and labor attending the use of a shade board. I expect that a cover lined with asbestos would shield the bees from the heat of the sun, so far as the top of the hive is concerned, but the sides of the hive need protection nearly as much, perhaps as much, as the top of the hive. I have never used a cover of metal lined with asbestos, but I don't know as there is any objection to it aside from the cost.

Moving Colonies of bees long distances without loss of some of the old bees and the unsealed brood is difficult to accomplish. One year ago I thought of moving my apiary here at Flint to Northern Michigan. That is, I wished to move the brood and young bees, leaving the

flying bees here at Flint, furnishing them queens, and building them up into full colonies. It is these old bees that kick up a fuss and die on a journey, and I wished to avoid that trouble, and yet save the bees. I don't know as very many folks will wish to move bees in exactly that way, but, if they should, here is a plan that Mr. E. F. Atwater wrote me about at that time.

Ten days before moving the bees, practice the Alexander method for making increase. That is, put the queen and one frame of brood in the lower story, with the brood above, a queen excluder being placed between the two stories. In ten days move the upper story away to a new location and give it back the queen, or one purchased for that purpose. The removed brood nests are now free from unsealed brood, the old bees will return to the old stands, and the old brood nests can be moved with no loss of either old bees or unsealed brood; that is, if moved at once before the eggs laid by the queen can hatch out. The colonies started on the old stands by the use of the old, flying bees ought to build up and be good colonies. In short, this is practically dividing the colonies, and moving away the sealed brood and young bees, which is much better than losing a lot of the old bees and unsealed brood. If the bees are to be confined only two or three days there is not likely to be any serious loss of bees or brood.

Some Hard Lessons Learned in This Remarkable Spring.

We had warm weather here at Flint the last of March, and I set out my bees—not a colony dead out of 100. The weather was warm for a week or more and some brood was started, but not enough so that the bees did not cover it in the subsequent cold that followed in April; hence it was all saved and hatched. I kept close watch of the bees here during the cold that came in April, and could not see that they were suffering any, hence I did

not worry any over the nearly 100 colonies that I had over at Port Huron. About the first of May I went over to Port Huron to see how matters were progressing, and was astonished to find more than half of the colonies dead. I was a little puzzled at first, as, although they were in single-walled hives, without protection, they had plenty of bees and stores, and were having frequent flights in January when I bought them. As I carefully examined hive after hive, the conclusion was forced upon me that most of them had *starved* with honey in the hives. It was a peculiar combination, but one that is likely to occur in wintering bees out of doors with no protection. As they were wintering in the open air with no protection, large quantities of honey, in the center of the hive, were consumed to keep up the heat. The warm spell in March resulted in the starting of quite a lot of brood. Then came cold that continued for nearly two weeks. The bees clustered on their brood, in the center of the hive. Honey was out of their reach, without leaving the cluster, and the cold prevented their leaving the cluster. Possibly the cluster might have moved to the honey (I don't *know* that) had it not been for the brood, but the brood they refused to desert, and the result was that they starved with honey in the hive. Most of the hives were found with a solid cluster of bees enclosing some patches of brood. The query might come up, why did not my bees here at home suffer in the same way? They were wintered in a warm cellar, and the consumption of honey was very light compared to those wintered in the open air with no protection. There was honey along under the top bar of nearly every frame. Some honey was enclosed in every cluster. Another thing, I had been over most of the hives here, and equalized the stores, and this would result in putting combs of honey in reach of the center of the hives. If I had gone over to Port Huron during the warm spell in March, and equalized the stores, and seen that there was a comb of honey

right up next to the brood in every hive, it is likely that there would have been very little loss. As it was, there were only 37 colonies left out of some 90 odd.

Here are some of the lessons: Bees are not wintered until spring comes, no matter how favorable things may appear in the middle of the winter. In the open air, with no protection, is no way to winter bees in Michigan. Never take things for granted. Because my bees here at Flint were weathering the cold all right, I took it for granted that those at Port Huron were doing likewise. Taking this for granted was a costly lesson for me. I don't mean to say that the whole transaction of buying and losing a part of these bees was a great financial loss, as the price at which I bought the outfit was ridiculously low; still, the bees would have a certain value regardless of what I paid for them.

In Northern Michigan, the only losses were from starvation. Starvation pure and simple; and in a warm cellar at that. We supposed that we had given them a great plenty of stores, and with an ordinary spring we would have come out all right. In fact, at the Pioneer yard, where Elmer lives, we did come out all right. He took out the bees during the warm spell in March, they had a flight, and quieted down, and he protected the hives with tarred felt. Then came winter again, and it held its own for a month or more. Not once did the bees have a flight during that month. There was snow and heavy freezing. About the 1st of May it warmed up so that the bees could be removed from the other two cellars. In one cellar they had been confined six months lacking six days. In the two cellars between 30 and 40 colonies had starved. The ones carried out had had a flight and quieted down, as already explained, and consumed very little honey, while those in the warm cellars had become uneasy and restless, and some had started breeding, and the stores were consumed.

As soon as a letter came from Elmer

stating the condition of things, that so many had starved, and others were very short of stores, that he had equalized the stores as best he could. I took the first train for Port Huron, where I had 1,000 pounds of honey in L. frames, that came with the "deal" in which I bought the bees. I put this honey on the cars, and sent it by express, and went with it myself, writing Elmer in advance to meet me at Fife Lake with a team, and we soon had a big, fat, solid comb of honey near the center of every colony that needed it. By the time this honey was in the hives, it had cost ten cents a pound—rather expensive bee-feed; but it was the salvation of those colonies.

Yes, and I'll never forget the journey with that honey. Most of it was in new combs, built last year, with no wires nor foundation in the frames—just great slabs of heavy, fragile and tender honey. Even the jar of the express train when running would cause the combs to crack loose next to the top bars. Once in awhile a comb would drop out between the bottom bars, and the honey dripped out on the car floor and on trucks when it was transferred, and daubed up the clothes of the men who handled it, and caused them to use language more picturesque than polite. But we got there after awhile, and tied the combs into the frames, and the colonies thereby saved are worth ten times the cost and trouble.

There is just one lesson that I can think of right here. Last fall, right at the apiary where most of this honey was used, we extracted, and sold at six cents a pound, some 2,000 pounds of buck-wheat honey. If we had kept over about 200 combs of it for some such an emergency, or for spring feeding that is quite likely to come, we would have been money and labor ahead. Of course, we did not expect such a spring, but they say that it is always the unexpected that happens. Anyway, Elmer says that we have had it rubbed into us pretty effectually that we can't get too much honey into the hives before putting them into winter quarters.

But we have about 500 colonies left, and they are in pretty fair condition, barring the lack of stores, which, of course, we are supplying. We have already bought eight barrels of sugar, and will buy as many more if necessary. We will stand by the bees. From now until clover or raspberries bloom, they will have all of the feed that they can use to advantage.

The season is at least a month late. In one sense, this is a redeeming feature, as it gives time in which to build up the colonies in readiness for the harvest when it does come, and you may rest assured that we shall make the most of it. The raspberries have not yet been injured by the freeze, and it is the middle of June when I am writing this, and it is not likely that they will now be injured. White clover is coming on slowly, in moderate quantities, and may yield a fair crop.

The loss of bees here in Michigan has been very heavy this spring. Especially is this true in cases where bee-keeping is a side-issue. The bees have run short of stores without their owners realizing it. My loss over at Port Huron is typical of the stories that come to me day after day. A man was here after some sections a few days ago. He lives near enough so that he drove in. He said a neighbor of his had over 100 colonies last fall, and now has only ten colonies. And so it goes.

The crop of honey the coming season will certainly be short, and those who have any to sell will be somewhat reimbursed for present losses by the increased price and demand.



CONTROLLING SWARMING.

Yet Getting the Benefit of the Young Hatching Bees.

The plan of starting a new brood nest upon the old stand of a populous colony, and in some way getting the young hatching bees into the newly established colony, is not new, but the details for carry-

ing out the principle may be varied greatly. One plan is that of putting the old brood nest on top of the supers, and keeping the queen out with an excluder if necessary, but, with this management,

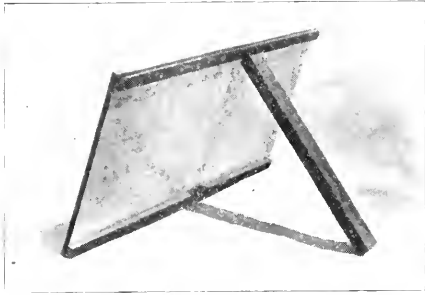


Fig. 2.- False Bottom and Closing Stick.

the combs are quite likely to be filled with honey as the brood hatches out. Mr. Atwater recently described in the Review a plan of placing the new brood nest over the old one, with an opening between covered with queen excluding metal. As the bees hatched they found their way

down and find their escape just above the regular entrance. When they return they are almost certain of joining the colony in the lower hive, instead of ascending the long tube.

Mr. W. C. Lyman, of Illinois, carries out this same principle by setting one hive *behind* the other, and giving the bees of the back hive an entrance *under* the front hive. He describes and illustrates this plan very nicely in the American Bee Journal, from which journal I copy the article mentioned.

How to get the best results from my bees in a rather poor location; how to control swarming, and to run for comb honey as easily as for extracted; how to keep the colonies strong, and at the same time contented; and to be able to do this in an out-yard as well as at home; how to do it all with only a little labor, comparatively, and without cutting or changing my hives in any way, and without many extra fixtures to develop a system that would apply to any standard hive, has been a pretty large problem over which I have studied a good deal, and have tried in a number of ways to solve.

Also, have made some progress, and with the help of the photographs which I

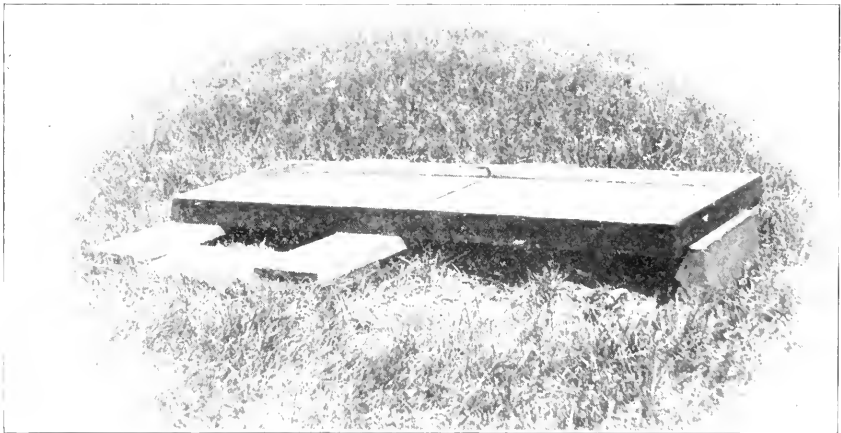


Fig. 1. Two Hive-Bottoms Facing.

into the hive above, leaving the combs below practically empty. Some one, years ago, practiced putting the old brood nest on top, and then furnishing a spout, in front of the hive, for the bees to come

have taken of the hive-parts and fixtures which I am now using, I will try to make plain my method.

Fig. 1 shows two bottom-boards, of the kind I use and prefer, placed as shown front end to front end, and the

$\frac{7}{8}$ -inch bee-space-side up on a stand from which I have just removed the colony which I wish to manipulate. When to do this work must be left to the judgment of the bee-keeper, but I usually do it about the time when a shaken swarm should be made to prevent swarming.

Fig. 2 shows a false bottom made of galvanized iron, leaning against, or held up, by a short piece of board, and these two articles are all that are required in my plan for the manipulation of a colony. The false bottom, as I use it for the 8-frame hive, is made by cutting a sheet of galvanized iron to measure, 21 inches

bottom does not fit tight against the bottom-board at B, but is drawn a good bee-space back toward A, so that bees running under at A can emerge at B; that is, the false bottom forms a sort of bridge for bees to run under and come out at B. The strip of wood on the back end and upper side of the false bottom at A closes all exit in that direction for the bees, when a brood-chamber is set on the front bottom-board, and the space between the two is closed by dropping in the little board shown in Fig. 2; all egress for the bees from the rear brood-chamber is under the false bottom in front.

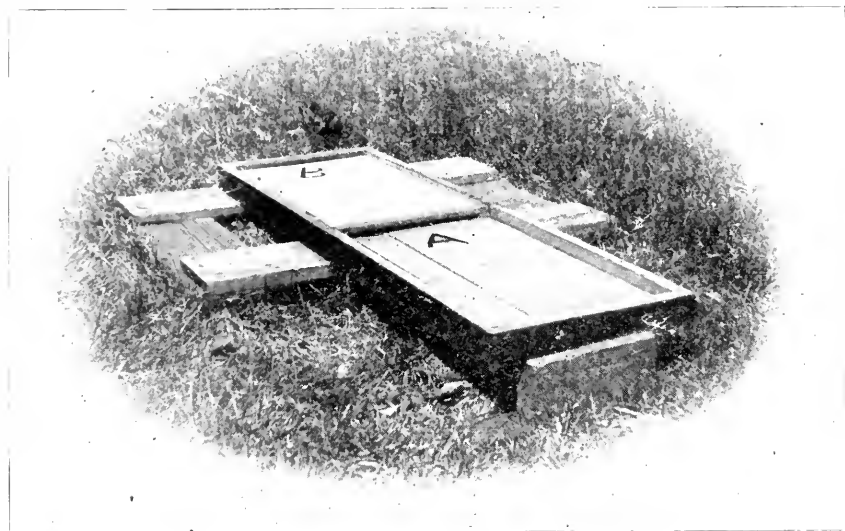


Fig. 3. False Bottom in Place.

long by 12 inches wide, and nailing to it on the underside pieces of wood $\frac{3}{8}$ inch by $\frac{7}{8}$ inch, and 21 inches long, one piece being nailed to each of the sides of the iron, as shown in the illustration.

Across the end of the iron sheet on what is to be the upper side is nailed a $\frac{3}{8}$ inch by $\frac{7}{8}$ inch strip of wood 12 inches long, which completes the false bottom.

The short piece of board shown in Fig. 2, is used to lay on the front end of the rear bottom-board, to close up the space between the two brood-chambers, when the manipulation of the hive is completed, as shown in Fig. 4. It is 2 inches by 14 inches long.

Fig. 3 shows the false bottom dropped into its place in the front bottom-board of the two shown in Fig. 1. This false

Fig. 4 shows the arrangement of the hives completed.

The entrance of the hive marked 11 is in the usual place, and is the only place where bees can get into that hive. The entrance to the rear brood-chamber, marked 1, is just in front of the entrance to hive 11, and is shown by a dark line in front of the entrance to hive 11. This is also the only place where bees can get into or out of the rear brood-chamber.

Now in practical use I find that very few of the bees which come out from the rear brood-chamber locate the place where they came out, but instead locate the entrance to the front hive. In fact, the hive is "all one to them," as it is to all the bees which fly from either brood-chamber.

The idea that they would not locate the

entrance to the rear brood-chamber, I took from the fact that it is more natural for bees to go up into a hive, as they are in the habit of doing through a short passage-way, than it would be to go down and under through a long one, and it works that way in practice. But to get out, they will go in any direction *toward the light* for a considerable distance.

But to go back to the manipulation of the hive: All the work of arranging the bottom-boards which I have described is supposed to have been done on the stand of a strong colony of bees, or one about to swarm, and which has been set off its stand for the purpose. The first thing to do after arranging the bottom boards as described, is to put on the front one a brood-chamber arranged as for the hiving of a natural swarm, with frames of four-

all the parts are closed up bee-tight except the entrances, and the work is done.

I still use a queen-excluding honey-board, which is shown in dark color on the hive in Fig. 4. There are reasons for this, but I will not take up that part of the subject, nor other details of management, for that must be according to location, the size and kind of hive in use, etc., and if any one wishes to try this method he must arrange those things to suit himself.

E. F. Atwater, in the February Bee-Keepers' Review, tells of his method, which is similar to this, and speaks of putting a comb containing water into the brood-chamber containing the brood. I believe that is an excellent idea, and I will try it in the future.

So far this method is the most satisfac-

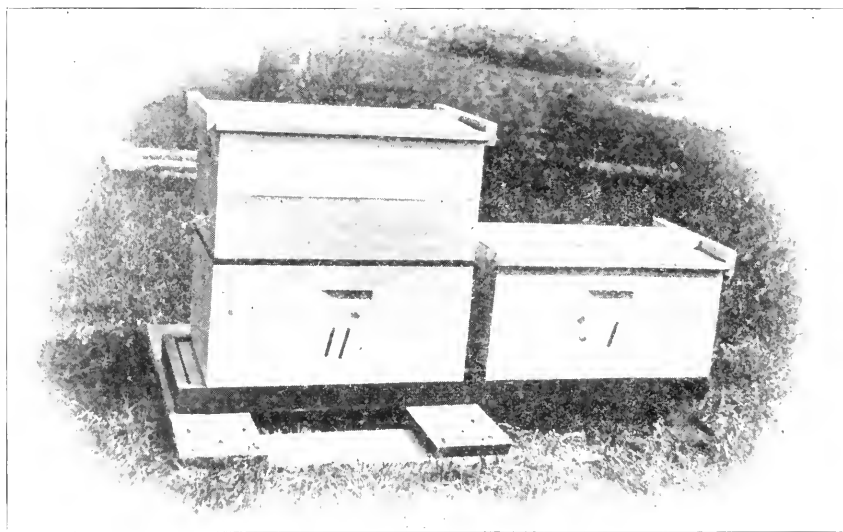


Fig. 4.—Complete Hive-Arrangement for Swarm-Control.

tion, or combs, as the bee-keeper may think best, and on it put the supers, bees and all from the removed hive. Back of this, on the rear bottom-board, put the brood-chamber of the removed hive, containing the brood and queen, and close up the space between with the piece of board described.

In Fig. 4 the prepared brood-chamber is marked 11, and the one containing the brood and queen is marked 1. Next remove the queen from 1 and put (her and perhaps a few of her bees for company until enough return from the field) into hive 11, put on the covers, and see that

tory of any I have tried, in meeting all the requirements of both comb and extracted honey production, and if any one thinks well enough of the plan to try it, I wish he would report results to the American Bee Journal, no matter if it is a failure, for by failures we often learn to succeed.

One thing I forgot, which is, that I think it is best to cut out the queen-cells before they hatch, that will be built in the rear brood-chamber, for the bees will agree better when they come together at the entrance; but the queen-cells can be left long enough to make use of them in the bee-yard, if required.

"WHAT'S IN A NAME?"

That Depends Whose Name It Is.

Did it ever occur to you that it means something to order bee-supplies with a reliable name back of the goods—a name that has stood for over 30 years for the very best in bee-goods?

When you see **LEWIS** on a hive or on a crate of sections you know what you are getting. You also know that if the goods are not just exactly what they are sold to be, back goes your money to you. The G. B. Lewis Company or its distributing houses do not want your money if you are not satisfied.

They do not want you to take any chances, either. Before you buy your bee-supplies, order a sample crate of Lewis Sections and five Lewis Hives or less, just to see what you are going to get when you do buy. If **Lewis Beware** does not win out on the trial, give some one else the order. That's fair, isn't it?

Lewis Beware is sold at consistent prices, and is the cheapest beware because it is the best beware. A season's trial will convince you.

G. B. LEWIS CO. The Original Beware People **Watertown, Wis.**

DISTRIBUTING HOUSES.

- ENGLAND—E. H. Taylor, Welwyn, Herts.
 FRANCE—Raymond Gariel, Paris, 2 ter Quai de la Mégisserie.
 CUBA—C. B. Stevens & Co., Havana, 19 Oficios.
 CALIFORNIA—C. B. Stevens & Co., Manzanillo.
 CALIFORNIA—The Chas. H. Lilly Co., San Francisco, 141 Spear Street.
 SOUTHERN CALIFORNIA—Paul Bachert, Lancaster, Doyle-Baines Co., San Diego, Fallbrook Co-Operative Ass'n, Fallbrook.
 COLORADO—Colo. Honey Producers' Ass'n, Deaver, Grand Junction Fruit Growers' Ass'n, Gd. Jct'n, Robert Halley, Montrose.
 IOWA—Adam A. Clarke, Le Mars, Louis Hanssen's Sons, Davenport, W. J. McCarty, Emmetsburg.
 COLORADO—Arkansas Valley Honey Producers' Assn., Rocky Ford.
 ILLINOIS—York Honey & Bee Supply Co., Chicago, 191 E. Superior Street, Dadant & Sons, Hamilton.
 INDIANA—The C. M. Scott Co., Indianapolis.
 MICHIGAN—A. G. Woodman Co., Grand Rapids.
 MINNESOTA—Wisconsin Lumber Co., Minneapolis, 432 Lumber Exchange.
 MISSOURI—E. T. Abbott, St. Joseph.
 OHIO—Norris & Anspach, Kenton.
 OREGON—The Chas. H. Lilly Co., Portland.
 PENNSYLVANIA—Cleaver & Greene, Troy.
 TEXAS—Southwestern Bee Co., San Antonio, 432 Houston Street.
 UTAH—Fred Foulger & Sons, Ogden.
 WASHINGTON—The Chas. H. Lilly Co., Seattle.

"If goods are wanted quick, send to Pouder."

Established 1889.

"Exactly Right."

By the Bee Crank.

It is not an easy matter to submit patiently to the annoyance and inconvenience caused by the mistakes and carelessness of others, when the means are at hand to remedy the difficulty quickly.

But that is nothing compared to the intolerable exasperation of having to suffer from the carelessness of a firm with whom one is dealing at long range, when correspondence and tedious delays must intervene before things can be straightened out. When mail-order houses allow such things—not once or twice, but often that is the limit.

The reason I am more cranky about having things done right in the first place than the crankiest customer on my book is, I put myself in his place. Kicks are a rare thing from my customers. On the contrary, the receipt of such letters as the following is an every day occurrence:

WALTER S. POUDEK, Tibbs, Miss.
Indianapolis.
Dear Sir:— The five hives arrived promptly.
They are exactly what I have been looking for.
Yours Truly, J. E. TIABS.

I sell Root's goods at Root's prices. Can supply you quickly with the new metal-spaced Hoffman Frames, Danzenbaker Hives, Dove-tailed Hives, Section Honey-boxes, Weed-process Comb foundation, Honey and Wax Extractors, Bee-Smokers, Bee-veils, Pouder Honey jars, or any thing else that a bee-keeper might require.

Let me send you my new catalog—it tells you as much as I could on forty full pages like this and it won't cost you a cent, except for the postal you use in writing for it.

I would like to figure right now with honey producers about early shipments of finest comb and extracted honey.



Walter S. Pouder,

513-515 MASSACHUSETTS AVENUE, INDIANAPOLIS, IND.

BEE SWAX

We are always in the market to buy beeswax and pay the highest market prices. We want beeswax from the bee-keepers direct.

Dadant's Foundation, It Excels.

Wherever you are you can get our goods. Write us and we will either make you prices or tell you where you can get our foundation nearer to you. We have our agents everywhere.

BEE SUPPLIES.

We handle every kind of bee-keeper's supplies and only the very best. Early order discounts given now on Supplies and foundation. Write us before selling your beeswax or buying your season's supplies.

Agent for Michigan, A. G. WOODMAN, Grand Rapids.

DADANT & SONS, Hamilton, Ill.

Send for Catalog.

Bee-keepers, we can furnish you with the best

Sections

at the lowest prices; and all other up to date goods.
Send for catalog and prices. 3-07-t

AUGUST LOTZ & SON, Cado't, Wis.

Well-bred Queens!

For the purpose of securing an ample supply of select-bred queens, I have engaged an experienced breeder in the South to rear queens for ME ONLY, and confidently expect to fill orders promptly soon as weather permits mailing.

Cook's Square Honey-jar

is the best, cheapest, and most sanitary package for retailing honey. Send for circular and price list of hives, bees, and useful implements.

J. H. M. COOK, 70 Cortlandt St., New York

The Oldest Supply-house in the East,
and only Reliable Goods sold. 10
Cents brings sample jar by mail.

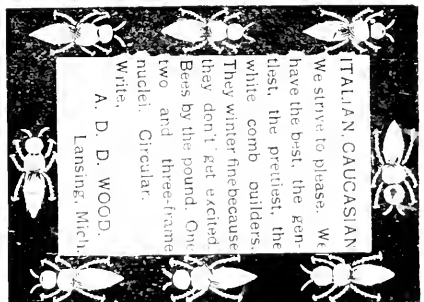
4-07-3t

BIG SLAUGHTER

In Bee Supplies. Owing to the backward spring I have a car load of Dove-tailed Hives, too many, also a car of sections. To move these quickly I will name you a very low price. 2,000 lb.-shipping cases for 4 1/4 sections, all basswood, one-piece covers, 13c each.

Augusta Berry Baskets and Crates in stock. Send for 32 page list.

Beeswax wanted: 31c cash, 33c trade
W. D. SOPER, Jackson, Mich.



BEE SUPPLIES

We furnish **EVERYTHING** needed in practical Bee-Culture, at lowest prices. We make the

DOVETAILED LANGSTROTH AND ALTERNATING HIVES.

The most practical, UP-TO-DATE hives are the

MASSIE HIVES

We make them. Have you read our Catalog?

Our HONEY-EXTRACTORS

are not excelled for durability, fine workmanship, and practical utility.

Have you seen our latest improved Champion Smoker? If not, you miss it until you get one. Write us for our 1907 Catalog. It's the easiest catalog to understand or order from that you ever saw. No trouble to give estimates. Tell us what you want.

Satisfaction guaranteed or money back. Address,

KRETCHMER MFG. CO., Council Bluffs, Iowa.

Muscatine Produce Co., Muscatine, Iowa.

Trester Supply Co., 103 11th Street, Lincoln, Neb.

3-07-10t

Catalogs issued in English and German.

Make Your Own Hives

Bee-keepers will save money
by using our Foot Power

SAWS

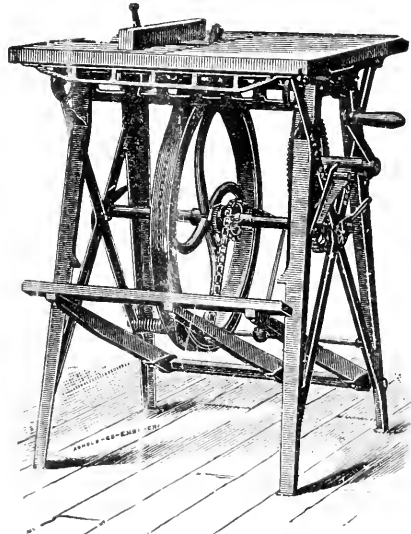
in making their hives, sec-
tions and boxes.

Machines on trial. Send for
Catalogue

W. F. & JNO. BARNES CO.

387 Ruby Street

ROCKFORD, - ILLINOIS



BEESWAX WANTED

We pay 32c in cash, or 35c in trade, per lb., delivered here for

CHOICE YELLOW BEESWAX

Send us your shipment now. We remit the day it comes to hand.

FRED. W. MUTH & CO.

21 WALNUT ST.

CINCINNATI, OHIO.



We have a complete stock of Root's Goods and can save you time and freight expense. We would like to quote you prices on the goods you need. We sell the Danz. hive, the Comb Honey hive, H. H. HUNT & SON, Redford, Michigan.

Send for
Our 1907
Catalog.

PATENT, BINGHAM SMOKERS. 24
YEARS THE BEST. CATALOG FREE.
T. F. BINGHAM, FARWELL, MICH.

BEES AND QUEENS.

Three and five-banded Italians, and silver gray Carniolans. Untested queens, 75 cts each; tested, \$1.00. One-frame nucleus, without queen, 75 cts.; two-frame, \$1.25. Special prices on large orders.

C. B. BANKSTON & CO., San Antonio, Texas.

2-07-tf

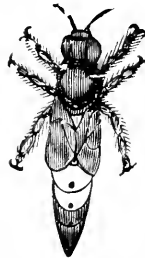
ANGEL'S GOLDEN BEAUTIES

And his bright three-banded Italian Queens have but few equals and no superiors. A fine large queen of either strain for \$1.00; extra select breeder for \$2.50.

SAMUEL M. ANGEL,
R. R. 1, Evansville, Ind.

6-07-6t

Minnesota Bred Queens.

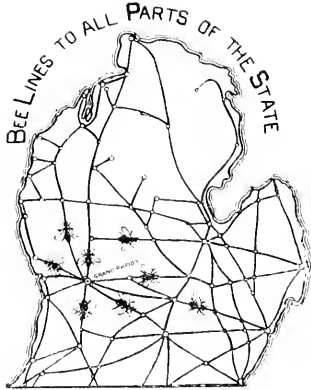


Try our Northern bred queens. Three-banded and Golden Italians. Untested, 76 cts.; tested \$1.25. Hardy and good honey gatherers. We want your orders and will guarantee safe arrival and satisfaction. Write for circular to 4-07-tf

MENNIE & FENTON.

Pine Island, Minn.

WANTED—An experienced apiatist as working partner in new business. First class farm in connection. Entirely new field. Unexcelled opportunities for man of work and ambition. Address L. G. Sada, 20 Degollado St., Monterey, N. Mexico. 5-07 3t



BEE-HIVES

SECTIONS

Why Buy of Us?

Remus, Mich., Feb. 25, 1907.

A. G. Goodman, Grand Rapids, Mich.

Dear Sir:—I use **Lewis Sections** exclusively; there are none better the only perfect "V"-cut section that has come to my notice. They fold without moistening.

E. D. TOWNSEND.

Remus, Mich., Feb. 18, 1907.

The **Lewis Hive Bodies** are far superior, both in material and workmanship, to any I ever bought.

As ever yours,

E. D. TOWNSEND.

- Several Car-Loads on hand.**
- Immediate shipments. Beeswax wanted.**
- Advanced Bee-Veil, cord arrangement.**
- Silk face, 50c, postpaid.**

A. G. WOODMAN CO.

GRAND RAPIDS, MICH.



WE BUY AND SELL

HONEY

OF DIFFERENT KINDS

If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at at the highest market price.

HILDRETH & SEGELKEN
265-267 Greenwich St New York.

DO IT NOW!

Send for my free Catalog of bee supplies. Best goods, right prices, and careful attention to orders. Write today.

Arthur Rattray, Almont, Mich.

4-07-tf

We are Headquarters for the

ALBINO BEES

the best in the world. If you are looking for the bee that will gather the most honey, and is the gentlest of all bees in handling, buy the Albino. I also furnish the Italian, but orders stand fifty to one in favor of the Albino.

Prices: Select tested Albino queens for breeding, \$5.00; tested Albino queens as they run, \$2.00; untested, \$1.00. Italians, tested, \$1.50; untested, \$1.00.

S. VALENTINE,
Rocky Ridge, Frederick Co., Md

5-07-tf

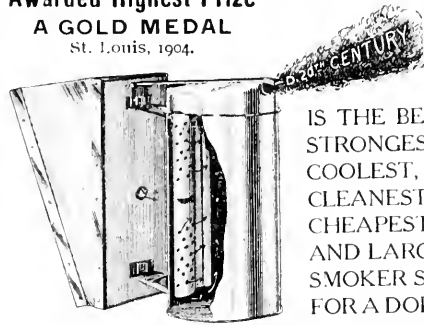
If you are going to -

Buy a Buzz Saw

write to the editor of the Review. He has a new Barnes saw to sell, and would be glad to make you happy by telling you the price at which he would sell it.

The Danzenbaker 20th Century Smoker
Pat. Oct. 3, '05, June 4, '07.

**Awarded Highest Prize
A GOLD MEDAL**
St. Louis, 1904.



**IS THE BEST,
STRONGEST,
COOLEST,
CLEANEST,
CHEAPEST,
AND LARGEST
SMOKER SOLD
FOR A DOLLAR**

IT HAS A SIDE GRATE that strengthens the fire-cup, and holds a removable metal and asbestos lining that keeps it cool, adding to its durability. It has no valves to get out of order or snout to **CLOG WITH SOOT.**

ALL THAT IS CLAIMED N. E. France, Platteville, Wis., General Manager of the National Beekeepers' Association says:

I have given your 20th Century Smoker a thorough trial. For convenience in lighting, durability and long time one filling will last and give ample smoke. I find it all you claim. In the spring I shall want several. I always want the best.

SURPASSES ALL OTHERS—Mr. Grant Stanley Nisbet, Pa.:—"After giving the Danzenbaker 20th Century Smoker several trials, can say it surpasses all smokers it has been my liberty to try; it will not go out until the fuel is all consumed, and it produces a cool smoke, a feature very necessary in any first-class smoker."

BEST IN TWENTY YEARS—M. D. Andes, Bristol, Tenn.:—"I have used the 20th Century Smoker one season. It has given me entire satisfaction. In my twenty years of bee-keeping I first used the old stand-by Clark smoker, and I believe I have tried all the different makes, as I am always looking for the best, and will say that your smoker beats them all up to date."

NEVER TOO HOT TO HOLD—Dr. Reginald Munson, Washington, D. C.:—"I am well pleased with the 20th Century Smoker: It keeps fire well without getting too hot to hold on continuous use, and makes smoke enough to satisfy the most critical."

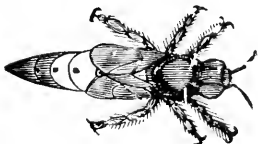
Price Dan-ze, Large 3 1/2-inch Smokers: Postpaid—one \$1:15; two, \$2:10; three, \$3; five, \$4:50; **By Express** or freight—one, \$1; six, \$4:20;

"Facts About Bees," a sixty-four-page pamphlet, sent free on request: Send also address of your bee-keeping friend for same:

F. DANZENBAKER, NORFOLK, VA.
Jamestown, Exposition Sta. Money-orders on Norfolk.

TEXAS QUEENS

Ts Famous Honey-Producers



**Texas
Queens**

The Famous
Honey-
Producers

I am booking orders now for April, May and June delivery, for **Carniolans, Italians, and Goldens**—equal to the best, regardless of price. **PRICES:**

Tested Queens.....	\$1.00 each;	\$10.00 per doz
Warranted ".....	.75 "	7.00 "
Untested ".....	.50 "	5.50 "

GRANT ANDERSON, Sabin, Texas
4-07-11

BEE-KEEPER'S SUPPLIES

New Catalogue Lower Prices
Modern Machinery etter Goods
We are Manufacturers

MONDENG MFG. Co., Minneapolis, Minn.
4-04-61 147-149 Cedar Lake Road

HONEY QUEENS

LAWS' ITALIAN and **HOLY LAND QUEENS.** Plenty of fine queens of the best strains on earth and with these I am catering to a satisfied trade. Are you in it? Or are you interested

**Laws' Leather and Golden Italians,
Laws' Holy Lands.**

These three, no more. The following prices are as low as consistent with good queens. Untested, 90c; per dozen, \$8.00; tested \$1.00; 1er dozen, \$10. Breeders, the very best of either race \$3.00 each.

W. H. Laws, Beeville, Tex.

SOMETHING NEW

in Bee Super Hives with metal slides at entrance to shed rain and lower for ventilation. L. size supers can be used for eight different purposes, five sizes of sections in same brood frame. Use old combs; need no foundation; feeders use on any hive or box bees packed any shape without disturbing the bees. New Bee Escape with trap door. Send for Catalogue.

L. RIEBEL,
Chariton, Ia.

6-07-11

ADVANCED Bee-Culture

As Regarded by National Officers.

The officers of the National Bee-Keepers' Association are bright, practical men, and their views on subjects apicultural are worthy of consideration. Here are the views of three of them regarding the book *ADVANCED BEE CULTURE*.

The President, Mr. L. A. Aspinwall, writes as follows:

As to your book, *ADVANCED BEE-CULTURE*, I esteem it very highly, and must confess that it is, according to my judgment, one of the most practical works on bee-keeping that I ever read.

The General Manager, Mr. N. E. France says:

In a few words you have given the up-to-date, advanced methods of profitable bee-keeping for progressive bee-keepers, and I wish every member of the National had a copy.

Jas. A. Green, Secretary of the National says:

I have just finished reading *ADVANCED BEE CULTURE* and write to express my hearty appreciation. The most experienced bee-keeper may study it with profit, yet it is written in so simple and concise a style that even the beginner can understand and profit by it.

Advanced Bee Culture is a book of 230 pages, the size of the Review, profusely illustrated, beautifully printed, and substantially bound. The price is \$1.20; or the Review one year and the book for only \$2.00.

W. Z. HUTCHINSON,
FLINT, MICH.

MARSHFIELD GOODS

are made right in the timber country, and we have the best facilities for shipping; direct, quick and low rates. Sections are made of the best young baswood timber, and perfect.

Hives and Shipping Cases are dandies.

Ask for our catalogue of supplies, free. ❀ ❀ ❀

Marshfield Mfg. Co.

Marshfield, Wis.

No Fish-Bone

Is apparent in combhoney when the Van Deusen, flat - bottom foundation is used. This style of foundation allows the making of a more uniform article, having a *very thin* base, with the surplus wax in the side - walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen *wired*.

Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,
Canajoharie N. Y.

DITTMER'S FOUNDATION

Why do thousands of Bee-Keepers prefer it to other makes? Because the bees like it best and accept it more readily.

DITTMER'S PROCESS IS DITTMER'S

it stands on it's OWN NAME and it's OWN FOUNDATION, to which alone it owes it's reputation and merits.

We are now ready to make prices for next season, for WORKING WAX for CASH and for full line of supplies.

Wholesale and Retail.

Free Catalogue and Samples.

Gus Dittmer,
Augusta, Wisconsin.

A GREAT IMPROVEMENT

WILL BE FOUND IN

THE AMERICAN BEE-KEEPER FOR 1907

It is profusely illustrated and enlarged and contains only articles of the most practical as well as scientific nature. A special corps of the best writers has been engaged. The editors are Harry E. Hill and Arthur C. Miller, than whom there are no more practical or experienced Bee-Keepers in this country. We have published the American Bee-Keeper continually and regularly since 1890.

Regular subscription price 50c a year. One year to new subscribers 35c, three years for \$1.00.

Send for sample copy and our new illustrated price-list of

Bee Supplies of all Kinds.

Guaranteed highest quality at lowest price.

The W. T. Falconer Mfg.
Company,

JAMESTOWN, N. Y.

(Established 25 years.)

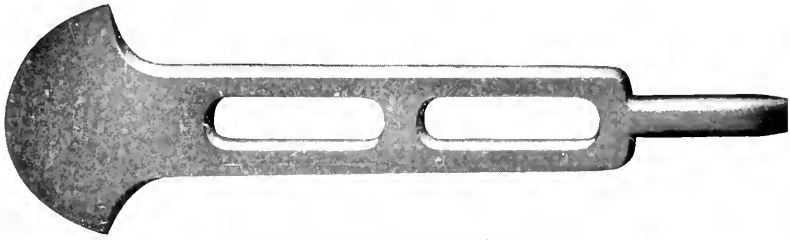
The Weekly American Bee Journal is in its 47th Year

The Oldest and Only WEEKLY Bee-Paper in America

Something New = The Ideal Hive-Tool

Bee-keepers have long needed a Tool with which to work among the hives during the bee-season. The Tool shown here was invented by Wm. Muench, a Minnesota bee-keeper, some years ago, but it was not on the market before. We have lately bought this Tool, and all rights, from Mr. Muench's widow, and have had the first lot made. They are ready for delivery now.

Best Hive-Tool



Only 30c, by mail

(This picture is exactly one-half the size.)

DESCRIPTION.—The Ideal Hive-Tool is made of high-grade malleable iron, much like wrought iron, $8\frac{1}{2}$ inches long. The middle part is 1-16 inches wide and $7-32$ thick. The smaller end is $1\frac{1}{4}$ inches long, $\frac{1}{2}$ inch wide, and $7-32$ thick, ending like a screw-driver. The larger end is wedge-shaped, having a sharp semi-circular edge, making it almost perfect for prying up covers, supers, etc., as it does not mar the wood.

What Dr. Miller and Miss Wilson Say of It:

In the first edition (1903) of Dr. Miller's "Forty Years Among the Bees," page 58, he says: "Of all the hive tools I have tried, I like best the Muench tool." On Jan. 7, 1907, he wrote us saying he thought "just as much of the tool as ever."

Miss Wilson, Dr. Miller's assistant, says this of the Ideal Hive-Tool: "It is an ideal tool. In fact, I don't see how it could be improved upon. I am sure we would feel utterly lost in the apiary without it. . . . You will have to try one yourself if you want to know its worth."

The Ideal Hive-Tool Free to a New Subscriber.

To a new subscriber to the **Weekly Bee Journal** for one year (at \$1.00), we will mail an Ideal Hive-Tool **free**; or we will mail the Hive-Tool alone for 30 cents (stamps or silver, if more convenient). Sample copy of the **Weekly American Bee Journal** sent on request; or a 3 months' "trial trip" for only 20 cents. Address,

GEORGE W. YORK & CO., 334 Dearborn Street, CHICAGO, ILL.

Minnesota Bred Queens.



Try our Northern bred queens. Three-banded and Golden Italians. Untested, 76 cts.; tested \$1.25. Hardy and good honey gatherers. We want your orders and will guarantee safe arrival and satisfaction. Write for circular to 4-07-1f

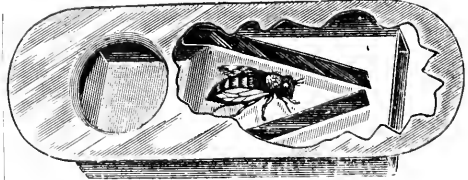
MENNIE & FENTON.

Pine Island, Minn.

BEES, QUEENS AND SUPPLIES

We manufacture standard dovetailed bee-hives and supplies, cheaper than you ever bought before. Our Queens and Bees stand at the head in quality. Untested 75c, each; \$1.25 for 6; or \$8.00 per dozen. Tested, \$1.25 each; \$12.00 per dozen. Select tested, \$1.50. Special prices to dealers and in large lots on application. Dittmer's foundation Catalog free.

THE BEE & HONEY COMPANY,
Will Atchley, Prop.
Beaville, (Bee Co.) Texas,



ADVANTAGES OF BEE ESCAPES.

No sweat steals down the cheeks and aching back of the tired bee-keeper, as the result of standing in the hot sun, puffing, blowing, smoking and brushing bees; no time is wasted in these disagreeable operations, and no stings received in resentment of such treatment; the honey is secured free from black or even the taint of smoke; the capings are not injured by the gnawing of the bees; and robbers stand no show whatever. If there are any burr-combs, they are cleaned up by the bees inside the hive, before the honey is removed. Leading bee-keepers use the PORTER escape, and say that without a trial it is impossible to realize the amount of vexatious, annoying, disagreeable work that it saves. The cost is only 20 cts. each, or \$2.25 per dozen.

R. & E. C. PORTER, MFRS.
SEND ORDERS TO YOUR DEALER.

MICHIGAN

*Bee Keepers Can Save Time and Money by Getting Their
Bee Supplies of*

LENGST & KOENIG,

127 SO. 13TH ST., SAGINAW, MICH.

SOME REASONS

Why it will pay you to patronize this firm.

Saginaw is a large wholesale lumber market, thereby enabling them to buy lumber at the best possible advantage.

It is also an excellent shipping point, as there are competing roads running out in many directions.

This firm keeps on hand a large stock of standard goods which enables them to fill orders promptly.

They are not simply dealers, but have a shop equipped with machinery, and can make any special goods on short notice.

They are practical bee-keepers as well as expert mechanics, which insures perfect accuracy.

The editor of the Review has twice visited this establishment, and takes pleasure in certifying as to the quality of the work turned out.

Send for Price List.

Copy of **ADVANCED BEE CULTURE** given free with order for \$15.00 worth of supplies providing Review is mentioned.

SUPERIOR QUEENS.

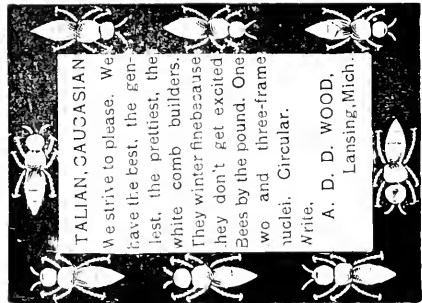
Leather Colored Italians.

Single queen, 75 cts.; one doz., \$7.50. Write for prices on large numbers.

I use a combination of several well-known methods of queen rearing, combined with two new features entirely my own, and can turn out good queens faster than by any other method. Every queen is warranted purely mated, and absolutely satisfactory.

3-07-tf

S. F. TRECO, Swedona, Ills.



WE OFFER FOR A LIMITED TIME ONLY AT LIBERAL FIGURES

AS FOLLOWS:

300 Thousand Quart Berry Boxes.
100 Thousand 16 and 24 Quart Berry Boxes
200 Thousand Sections

25 Thousand 24 Section No-drip Shipping Cases
2 Thousand Dovetailed Bee-Hives.

Write today and get our special prices, on any quantity. Address,

SHEBOYGAN FRUIT-BOX CO., Sheboygan, Wis.

BEE SUPPLIES

We furnish **EVERYTHING** needed in practical Bee-Culture, at lowest prices. We make the

DOVETAILED LANGSTROTH, AND ALTERNATING HIVES.

The most practical, UP-TO-DATE hives are the

MASSIE HIVES

We make them, Have you read our Catalog?

Our HONEY - EXTRACTORS

are not excelled for durability, fine workmanship, and practical utility.

Have you seen our latest improved Champion Smoker? If not, you miss it until you get one. Write us for our 1907 Catalog. It's the easiest catalog to understand or order from that you ever saw. No trouble to give estimates. Tell us what you want.

Satisfaction guaranteed or money back. Address,

KRETCHMER MFG. CO., Council Bluffs, Iowa.

Muscatine Produce Co., Muscatine, Iowa.
Trestler Supply Co., 103 11th Street, Lincoln, Neb.

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Catalogs issued in English and German.

Make Your Own Hives

Bee-keepers will save money
by using our Foot Power

SAWS

in making their hives, sec-
tions and boxes.

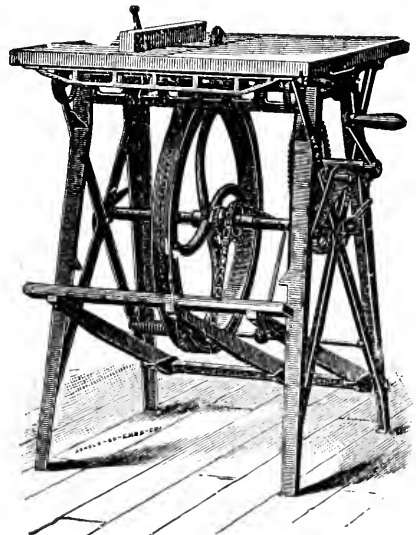
Machines on trial. Send for
Catalogue

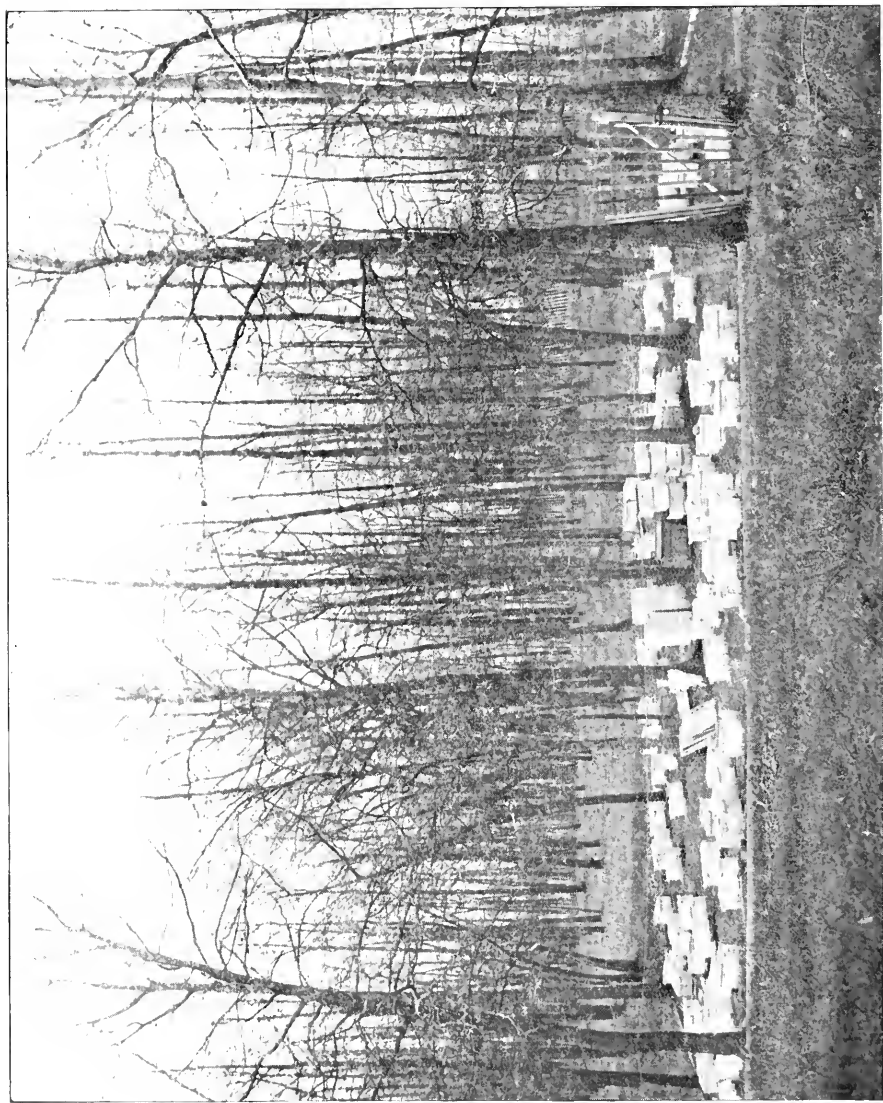
W. F. & JNO. BARNES CO.

384 Ruby Street

ROCKFORD, - ILLINOIS

1 07 12t





Review Apiary at Flint, Just After Spring Protection Was Removed.

The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

\$1.00 A YEAR.

W. Z. HUTCHINSON, EDITOR AND PUBLISHER.

VOL. XX. FLINT, MICHIGAN, JULY 15, 1907. NO. 7

Doings at the Review Apiary for the Last Few Months.

W. Z. HUTCHINSON.

THE picture opposite shows the Review apiary here at Flint as it appeared just after the "winter overcoats" of tarred felt had been taken from the hives. It is located in the southern edge of a forest of oaks, and never before did I see demonstrated so clearly the value of a protected location as I did at this apiary during the trying weather of last spring. In going over the hills to visit this yard the wind would blow cold and sharp enough to shave one, but as soon as the shelter of the woods was reached not a breath of wind could be felt, and it seemed quite warm: in fact, it was not unusual to find a few bees flying and taking little circles in front of their hives.

TARRED FELT NOT ALWAYS AN ADVANTAGE AS A PROTECTION.

By the way, while riding on the train this spring, I met Mr. L. C. Woodman, of Grand Rapids. He was going north with

200 colonies of bees. He told me that Mr. S. D. Chapman had written his son, Mr. A. G. Woodman, that the use of tarred felt on hives in the spring had proved an actual detriment to his bees. The colonies so protected were actually weaker on an average, than those not protected. He said the trouble was that the dark color of the covering absorbed the heat of the sun and warmed up the bees on days when it was too cold for them to fly, but they *did* fly and were lost. If the location is exposed and windy, I can see that the results might possibly be like those reported by Mr. Chapman, but in the sheltered locations where my brother and myself have used this kind of protection we have always found it a decided advantage.

THE WONDERFUL INFLUENCE OF OUTSIDE PROTECTION.

While on this subject of a sheltered lo-

cation, let me say that over at Port Huron where I met my Waterloo last spring, there was a sheltered nook at one corner of the yard. The wagon shed, the barn, a high board fence, and one or two big apple trees, all combined to shut off the cold north or west winds. Scarcely a colony perished in that sheltered nook; and even of those that lived, not one was as strong, when I moved them away, as were most of the colonies in the sheltered corner of the yard. Away out in the field, beyond the influence of this shelter, scarcely a colony was left alive, and those were weaklings. It seems strange that some of us are so long in learning the true value of outside protection in the winter and spring.

SHADE NOT ALWAYS AN ADVANTAGE.

While protection from wind is an advantage in the spring, there must be no *shade*. In one of our yards in the north there are a few little hemlocks; and Elmer was over there one day in the spring when the bees were going to the brook and filling up on ice water. Many of these water bringers would drop on the ground in front of their hives. Such as were in the sun warmed up, again took wing and eventually gained their homes, but those that dropped in the shade never again took wing. He thinks enough perished that day to have made a fair sized colony.

The trees in the apiary shown in the frontispiece are small oaks; and the oak is very late in putting on its leaves, hence the bees get the full benefit of the spring sunshine. Too dense a shade is a detriment, I believe, even in the working season. When these oaks were in full leaf, I have gone there as late as eight o'clock in the morning, and found very few bees flying. It was cool and dark back under the trees, and it seemed as though the bees had not yet waked up, did not realize that it was day. Those colonies near the edge of the woods began work much sooner in the morning. The bees also quit working much earlier at night than is the case with bees in the open field. I don't know how much of a loss comes

from cutting the working hours short, but it would seem as though there might be some loss from this cause. I think a much better plan would be to set the bees just outside of the woods, instead of under the trees, although the latter plan furnishes a delightful place for the bee-keeper to work.

QUEENS MUST BE CLIPPED WHERE THERE ARE TALL TREES.

This is the first time that I have had a yard of bees located near tall trees, and, for several years I had given up the clipping of the queens' wings, but the first swarm that issued showed me the necessity of either clipping or else using traps. I saw the swarm when it began to issue, but kept on with my work until most of the bees were out, and then was quite puzzled, as I looked about, in that I was unable to see the swarm. Finally I looked up directly overhead, and was surprised to see the bees circling about above the tree tops. They finally clustered in the top of a small oak. I had a hive all in readiness, then cut down the tree. As soon as it fell I rushed in with my hive, and succeeded in getting a little more than a pint of bees into the hive. The rest of them took wing and clustered again in the top of another small oak. I cut this down and rushed up with my hive again, when the humming of the bees at the mouth of the hive called in perhaps another quart of bees, but the most of them went up in the air again to whirl about in the space where they had clustered. I carried the hive underneath, and held it up as high as I could, with the entrance uppermost. Some of the lower bees of the swarm heard the call at the entrance and began to come down. Soon the whole front of the hive was covered with a "calling" mass of bees. I set the hive on the ground and all of the bees came down and hived themselves. The next day each queen lost her right wing.

A FENCE TO KEEP OUT BOYS.

This piece of woods where the bee yard is located is inside the city limits—just

inside and is the nearest the city of any piece of woods. As a result it is fairly over run with city folks, especially with boys on Sunday, and to avoid trouble from meddlers I put a fence around the yard. Trees served as posts, a four-inch board was used at the bottom, a barbed wire at the top, and five-foot poultry netting in the space between. At one corner was a gate fastened with a lock.

MOVING BEES TO BETTER PASTURES.

Very frequently, during the winter, the ground was bare in this locality, and I suspect that this lack of protection had much to do with the lack of white clover this season. I kept close and hopeful watch of the clover prospects, and, finally, the latter part of June decided that the only way to be sure of a crop was to ship the bees to the raspberry region. About 30 colonies had already been sold, and I shipped 50 more to Northern Michigan, sending them and 50 hives of empty combs by freight, paying full rates for a stock car that they might go through with no delay in transferring. The weather was hot, up in the eighties, and the colonies strong, just on the verge of swarming, in fact, three or four had swarmed. I put on a full upper story, and put five empty combs in this upper story, spacing them equally and nailing them fast at the ends. These combs gave

support for any clusters of bees that wished to form in the upper stories; and most of them "wished." There are two very important points in moving bees in hot weather; plenty of air, and plenty of space to cluster off the combs. I had been feeding the bees all of the spring, and I gave them some generous ferds of thin syrup just before packing them up, which furnished them plenty of water. They were confined two days on the car, and one day in getting them out to the apiary. Considering the circumstances, they went in good condition. No combs broken or melted down. No bees smothered. No brood lost. The only loss was that of old bees, which, in some of the colonies, must have been nearly a quart. There seemed to be a difference in this respect, even in colonies of equal strength.

I disliked to be entirely without bees at home, even if they did not fare very well, so I left 18 colonies in the yard until I had returned from putting the 50 colonies in the raspberry region, and then prospects for clover looked so discouraging that I at once moved these 18 colonies out six miles to a locality where there are plenty of alsike and basswood. I was out there yesterday, and it is wonderful to see how they have been filling up their combs with the alsike.

FLINT, Mich., July 3, 1907.



Handling of Bees and Their Surplus During the Honey Season.

M. V. FACEY.

TWO things are especially desired by every bee-keeper, especially if he depends upon his bees for his bread and butter. First, a large crop of honey, and second, that it be of the finest possible

quality. Happily the system which produces the best quality of honey, is also favorable to a large crop.

While we sometimes, in this locality, take some surplus honey during the dan-

delion flow, yet, properly speaking, our surplus season opens with the advent of white clover. As soon as it commences to yield, I go through all of my colonies and extract practically all of the early spring honey they may have in store, whether it may be in the upper or the lower stories. As the time for the spring yield of amber honey is now over, my next extracting is almost strictly pure clover honey, which I extract as soon as the bees have it about two-thirds capped over; taking all in the upper stories and also the heavier frames from the lower or brood story; thus leaving very little and frequently no honey in the colony from top to bottom. I have found by repeated experiments that the closer I extract the honey, in the midst of a good honey flow, the fuller will be the hive at the next extracting. This seems strange to many, and some of my farmer bee-keepers, whom I assist once in a while, can hardly get used to it; especially when they call upon me to extract their honey and find, though they have given their bees room, and had just as strong colonies originally as mine, that they get less honey per colony than I got at my last extracting, although my extracting may be the third one and theirs the first. One reason for the difference is that when a hive is extracted clean, or nearly so, in this way, the bees being deprived of all of their stores go to work with *all the vim* (or even more) of a new swarm; and in the basswood season, and also sometimes in the buckwheat season, I have seen a hive so extracted in the morning *full* of thin newly gathered honey by night. In this way I go over my bees as often as they become ready, usually about every eight or nine days, but the time varies from the seventh to the twelfth day, the latter time representing a very poor year and seven days a very good year. By extracting a brood nest that is over crowded with honey, we make room for the queen, and, as the bees fill the upper stories first, she rapidly fills the lower story, so that after one or two extractings we do not

have to bother with the lower story, as she will have it all occupied; and (I use no excluders) she goes up into the upper stories less than she otherwise would. I like to keep the queen busy, as the more continuous the breeding throughout the entire season, other conditions being equal, the richer I am in the fall.

EXTRACTING FROM THE BROOD NEST.

Some bee-keepers object to taking honey from the brood nest, or from frames occupied with brood, under the supposition that the honey is inferior. In answer I would say that one of the dealers in select honey, catering to the fancy bottling trade for the large eastern cities, bought from me about 4,000 lbs. one year, and 10,000 the next year, of just such honey, and he classed it as superior to anything he had ever secured; and since that (three years ago) he offered me 9 cts. per pound for my entire crop of clover honey, to be delivered in barrels, if I so desired, but I did not deal, as my own trade needed it; and today my own customers all prefer honey raised as above, and it is all used for my best trade.

CONDITIONS TO BE OBSERVED IN EXTRACTING FROM THE BROOD NEST.

In handling the crop as above described, two things have to be given the closest attention; first, while the condition of the honey in the various hives does not vary a great deal, yet it will some, and it is necessary to become somewhat of an expert in judging its condition in order that any combs not sufficiently ripened may be left behind; and, second, we must learn to discern at sight whether the brood chamber or any other part of the hive containing brood should be extracted or not. Some bee-keepers object to extracting any frames with brood in because they say it disturbs the brood too much. Brood is destroyed in extracting from two causes: The first is turning too fast, and the second is turning too long. When I start a new hand running my extractor I first and quite readily get him accustomed to the proper speed, and then

teach him the proper time to run for each set of combs. When he has his business learned he should not throw out over a gill of bees ($\frac{1}{4}$ pint) to the 100 colonies, in extracting from brood frames. Drone brood throws out the most freely, next comes the half-developed larvae. Extracted as above, a small amount of honey will go back to the hive again, but not much.

KEEPING DIFFERENT KINDS OF HONEY SEPARATE.

The claim is often made that honey should remain on the hive throughout the entire season. Such honey is invariably well-ripened and thick, but in four cases out of five it becomes more or less mixed with amber honey, and, although the producer will scarcely believe it, yet it is hardly ever quite satisfactory for fancy trade. Last fall I bought different lots of honey where I paid from $\frac{1}{2}$ to 1 cent per pound less for them for these very reasons. I want my honey, whether I produce it or buy it, well ripened but not *darkened*. I also want, as nearly as possible, each kind of honey by itself.

TIERING UP—TO WHAT EXTENT IT SHALL BE CARRIED.

In tiering stories I find that bees work the best as to stories from the bottom upwards; therefore, I put all added ones on top; placing one on whenever they seem to be getting crowded. I use eight frames and sometimes only seven, in each ten-frame hive, used as an upper story. Where I have Hoffman frames this does away with any bother to the uncapper on account of the projecting sides of the frame, and also greatly lessens the number of frames to be handled.

After my first extracting I put on all new stories at the time of extracting, and always on top. As the queen is laying to her utmost capacity throughout the entire surplus season, I have to be constantly adding stories to accommodate the bees.

I do not find any advantage in tiering Langstroth hives over four stories high, and hives with frames 12 inches deep not

over three stories; and it is a question in my mind whether that is not one story too much; therefore, when they have reached that capacity and have again become crowded I find it economy to divide them.

DIVIDING COLONIES DURING THE HARVEST.

To do this select a hive of the youngest brood with a reasonable amount of bees, and place it on the old stand after removing the old colony and all the remainder of the stories to a new stand. Upon the hive placed on the old stand I place two additional bodies filled with comb; I also prefer to have the queen with them but I am not particular. They will be full of honey and ready for extracting on my next round. The old colony will also be full of honey but not always ready for extracting. Unless so divided, many of the tiered colonies, late in the honey season, will become so crowded that they will swarm.

I had one colony two years ago making a remarkable record, as I had taken \$28 worth of honey from it in just 28 days. The colony had not been divided and was tiered five bodies high—10-frame Langstroth. The bees then swarmed and flew away. The man on the place saw the swarm, and said, when clustered, it was as big as a barrel.

As the honey season advances some of the queens in heavily tiered hives will desert the lower story and establish their brood nest in the next upper one. In such cases I usually divide the colony by placing the old colony on a new stand, and the queen with a couple of frames of brood with clinging bees in a new hive, filled out with frames of empty combs, with as many upper stories as they may need, on the old stand. This will end her deserting the lower hive during the full duration of the honey flow, and frequently for the entire season. The deserted lower story, with such brood as may be in it, which will be largely or entirely capped, I place as an upper story on the removed old colony.

Can an outyard be run profitably for

both honey and increase? In answer to this I would say most decidedly, yes. To get the best results in honey I prefer hives of comb for my new colonies. I run the whole yard with colonies of one and two stories as may seem best, and when they become over crowded I divide by taking about two frames of the youngest brood with clinging bees and the queen and placing them on the old stand, the parent colony having first been removed to a new one and given a virgin queen, or, if none of these are on hand, a laying queen. Honey being coming in freely, I simply roll this queen in honey of the hive in which she is to be put and let her run in, and she is seldom molested. This is with me the quickest, simplest and most satisfactory way of dividing bees; but to be perfectly successful, conditions should be right. First, the colony should be almost or quite as populous as it would be for natural swarming; next, there should not be too large an amount of brood in the larval state left in the old colony. The removal of the two frames of the youngest brood to go with the queen usually cares for this difficulty; and, lastly, there should be plenty of young bees in the hive to insure against too great a depletion on the removal of the field bees by their return to the old stand. Bee-keepers in their first attempts at division after this manner often make mistakes by taking too many bees with the queen, and also by disregarding the condition of the brood and the proportion of young bees, present or coming out, and, as a penalty, lose more or less of the larval brood and eggs. If the method is understood, neither young brood nor eggs suffer, especially if you have a queen to immediately give them.

I prefer drawn combs to foundation for hiving a swarm; and I also give them an upper story of comb at once. Frequently both upper and lower stories are quite well-filled with honey on the next extracting day, but the more the better, as I extract it, and now the queen gets down to laying in earnest, and I am not troubled hereafter with lack of brood.

I avoid, wherever possible, any check to breeding in any way throughout the entire spring, summer or autumn seasons. I also expect every colony to furnish its quota towards the honey crop, whether it has one story only, or two, or three, and this is done by taking their honey so as to keep them constantly at work. I have in this way trebled my lot of bees in a yard, besides taking an average of 170 lbs. per colony, spring count, and, as I have sold bees largely, as well as honey, these results in my yards have been the means of making some handsome sales of bees. There is such a thing as keeping every colony on the rush throughout the entire honey season. If any begin to slack up in energy, extract *clean* and divide them, and if they fail then to come up properly to the work, which is seldom the case, break up the colony, or requeen them.

As the honey season draws towards a close, more honey should be left in the hive, as it is unwise to take honey from the bees merely to return it.

SECURING GOOD COMBS WITHOUT USING FOUNDATION

I never wire my frames, very seldom use foundation, and combs never become too old for me to use; in fact, I would rather have an old one properly cared for than a new one. When I divide my bees I never have the newly made colony which has the old queen build any combs. In case I need an additional supply, I remove every alternate filled frame in colonies with young queens just commencing to lay, and I get combs as nearly perfect as can be, and they are as nicely filled on my next visit as if I had given them foundation.

PRESTON, Minn., May 27, 1907.

[The foregoing article illustrates that a successful man must work out a system adapted to himself and his surroundings, and this system may be far different from that of some other successful man. While honey extracted from the sealed combs of the brood nest is undoubtedly well-ripened and of good quality, and it is possible to

extract it without serious damage to the brood, many successful men could not be induced to invade the brood nest.

Then there is the point of frequent and close extracting. I feel that this ought not to be passed without a warning. Mr. Facey with his good judgment and years of experience may manage it all right, but the great mass of producers can not or do not. I know Mr. Facey is not advocating the extracting of green honey, but the average bee-keeper who goes to extracting the honey "clean," every seven or twelve days will get some unripe honey. I know Mr. Facey says it must be done with caution and with care, but it will do no harm to bear down upon this point. The market for extracted honey never suffered such a blow as it received from the extracting of unripe honey.

This point that close extracting is an encouragement to the bees to put forth greater efforts is one well worth considering. I expect that the bees *are* thereby stimulated to greater exertions, but I wish Bro. Facey, and others, would tell us just *how much*. Let us suppose that

a ten-frame colony has its comb full of brood and honey, and an upper story of combs is placed upon it at the opening of the main honey flow. This upper story is soon filled and the combs partly capped over. Suppose now we remove those combs and extract the honey, returning the combs, will the bees then work with greater energy, and store more honey than they would had we simply raised up that story and placed a set of empty combs between it and the brood nest?

Where the white honey harvest is followed by a dark honey flow, the last extracting of the white honey must be rather close, or else some of it will go over into the dark honey. It is well-nigh impossible to prevent a *little* of the white honey being left in the combs if the dark honey flow follows right close upon the heels of the white harvest. Better have some of the white honey go in with the dark than *vice versa*, or to extract any honey that is not thoroughly ripened.

I feel strongly upon this subject of well-ripened honey, and I trust Bro. Facey will pardon, perhaps agree, with all that I have said upon the subject. - Editor.]



Keeping Colonies Strong and Preventing Swarming.

E. F. ATWATER.

As the profitable production of comb honey depends on keeping a large force of bees in each hive, during the flow, we have several methods of doing this more or less successfully. The best plan one season may be only second-best the next season, or some details may need changing. Let us suppose that the bees have bred up well, as is usually the case, a short time before the flow arrives, and

that we are 10 to 20 days from the flow. If everything is promising, and we want some increase, we can use the Rauchfuss or Aikin method. Put most of the brood in the lower story of the hive, on this a queen excluder, on this a second story, with one frame of bees, brood and the queen, the balance of the combs empty or containing some honey.

Brood rearing will leap ahead in this

upper story, receiving the heat from the mass of brood and bees below. The bees can't swarm, as the queen cannot pass the excluder. Nine or ten days later, set the upper story containing queen, bees and new brood, off to a new stand. The field-bees will return to the old stand. The hive on the old stand now contains only *sealed* brood. Destroy the queen cells, if any, give a ripe queen-cell, or run in a virgin queen, and put on the supers. The bees will not swarm, as they have no eggs nor larvae from which to start queen-cells. They are practically in the same condition as a colony ten days after swarming, except much stronger, and all cells cut out but one, or a colony run on the Hetherington-Elwood plan of unqueening: with this important advantage over that plan, that they have a queen much sooner, and the old queen on the new stand will furnish a fine force of bees for a later flow.

As soon as the young queen begins to lay, the honey will go up into the supers with a rush. For some conditions the method may be better than forced swarming as usually practiced: for the hatching brood reinforces the field-force for about 10 to 12 days after the old queen and her hive of new brood is removed to a new stand.

The chief fault that I find with this plan is that occasionally a queen fails to mate and return safely, when we have a hopelessly queenless colony to attend. Mr. Rauchfuss says that the above plan will give *more honey* than any other, for arid belt conditions, at least. The Dudleys value the method highly, and partly by its use were enabled to make up a severe winter loss, and to ship a nice crop of honey.

Later I will suggest some modifications of the Rauchfuss-Aikin plan. Another valuable method was described by a Mr. Wright of New York State, in *Gleanings*, some few years ago. The essential features of the Wright method get the bees quite strong some time before the flow, then when the secondary story contains some

brood, a bee-escape board with wire screen on both sides of the hole, is placed between the stories. Provide an entrance to this upper story and supply a queen-cell. The virgin will mate and begin laying in the combs of this upper hive. See that both new and old queens have plenty of room to lay, and build up the upper colony at the expense of the old.

When the flow arrives make a forced swarm on combs (Doolittle), foundation or starters, as you prefer, using the young queen in the swarm.

Last year we used mostly full sheets, as they would build drone-comb when hived on starters. When we can get good combs by hiving on starters we prefer it. The brood and old queen can be used for increase. Usually, having such a fine young queen when hiving on starters will result in mostly worker-comb, and a new brood-nest well-filled with brood, while super work is stimulated to the utmost.

Another fault of the Rauchfuss-Aikin and Wright methods is the necessity of rearing so many queen-cells fairly early in the season. I will add a modification of this plan also.

Now the Doolittle method, which would be ideal, if best results in super work and swarm-control would follow its use, when no disease is present in the yard, as the colonies are becoming strong some time before the flow, an upper story of combs like those below, containing, preferably, some honey, is added to each colony with an excluder between.

You may need to raise some of the combs of oldest brood to the upper story to insure that the queen has enough room, or put another body of combs below in unusually favorable seasons for breeding. When the flow is well begun, make a forced swarm, using the body of combs above the excluder as the new brood-nest, giving the queen and perhaps one frame with a little brood, to the swarm.

For some reason, during 1906, our colonies so used did not "hustle" the honey into the supers as they should, although the swarms were unusually strong. With

a young queen reared in an upper story on the Wright plan, results might be different and better.

We got much better average results by hiving on foundation. Even in the latter case the Doolittle plan of building up an immense force by abundant room and "millions of honey in our house" is grand, but I think it may be better to leave out the excluder, if we intend hiving on foundation or starters, or, if we hive on the combs, pick out a hive full containing little or no brood. I will also add our modification of the Doolittle method: When we find a colony preparing to swarm before the flow comes, (and we *like* to have some such colonies) we often treat it on the Sibbald plan, merely to get a young laying queen on the old stand, or we add some features of the Alexander plan for

mating first put the old queen, some bees and emerging brood in a hive on a new stand, and then on the old stand prepare an Alexander mating pile, as described in my article of January 1907, and by Mr. Alexander himself. The queens when mated and laying are an acquisition, you may be sure. Now that the flow has arrived we will make forced swarms, as does Mr. Gill and many others, hiving on one comb of brood and starters, or a comb of honey in each *out* side of the hive. If foul brood is present use *no comb* in the forced swarm.

Some seasons bees persist in building drone-comb; in such a season perhaps we must use full sheets of wired foundation as we did do largely during 1906.

MERIDIAN, Idaho, Feb. 11, 1907.



Helpful Hints in Extensive Bee-Keeping.

E. D. TOWNSEND.

TWO years ago we bought three Cowan extractors of the four-basket size. Previous to that we had managed to get along with two-basket machines. We have never been sorry we made the change, and we expect the next ones we buy will be the six-frame size, fitted with both hand crank and pulley attachment for power. We have never had any experience with gasoline engines, so you see, if the pesky thing does not work, why just take hold of the crank, and there you are.

ADVANTAGES OF A LARGE EXTRACTOR.

With a two-frame machine we were always waiting for that extractor; this seemed to regulate the amount we could extract. This size may be large enough where one works alone, but, even then,

when the baskets are full, it does not take any longer to throw the honey out of four combs than it does two. A four-frame machine will throw out all the honey a good lively man can uncap. A second man can feed the machine, take the combs from the extractor and put them into the upper stories ready to go back to the bees, or be piled away for future use. Of course, he turns the extractor and empties the honey, while a third man brings the honey in from the hives. The four-frame machine is about right for a three-man crew—a very good size. The two-frame is hardly large enough for one man to work to best advantage.

Mr. H. H. Root, the junior member of the A. I. Root Co., was here last summer

with a gasoline engine and outfit, and attached it to one of our four-frame machines, and we found the power made quite an addition to the capacity of the machine. While I do not think the capacity, even with the power, is sufficient to keep two uncapping, I do think, judging from what the four-frame did, that a six-frame would keep two uncapping; then one, not having the extractor to turn, could attend the extractor and handle the honey. This would call for two in the yard, and would make a five-man team. This would facilitate matters so that it would be possible to do all our extracting with one outfit and one crew; moving from yard to yard instead of having an outfit at each yard, as heretofore. There is an essential point in favor of the power driven extractor, and that is, the greater speed leaves the combs much more dry. This not only gets more honey, but the main point is, the combs are so dry that it is much less work for the bees to clean them when given back. Then, after the last extracting for the season, there will be no need of giving these almost dry combs to the bees to be cleaned before storing them away for winter. Another saving of labor.

It is likely that the most convenient way to lay out a bee yard would be like the spokes of a wheel, with the hub at the honey house door; then we could go to the farther end of the row with our wheel-barrow and work towards the house. But we have never been favored with a location suitable for this way of laying out a yard; as the ground would have to be level or we would have to wheel some of the honey up hill, a procedure that would more than offset what advantage would be gained by being able to wheel all our honey directly toward the honey house. The best we can usually do is to place our bees in rows, then, when we get to that part of the row opposite the honey house door, we leave a wide space between the hives there; then when we wheel our load down to this opening, we turn towards the honey house. This is a

thoroughfare, so to speak, and is leveled down into a smooth road for the wheel-barrow; for, perhaps, every row of hives in the yard leads to this path.

YARD WORK AT EXTRACTING TIME.

With two empty bodies, a four-inch Bingham smoker, a Cogshall bee-brush, a steel pry, made of a half a leaf of a buggy spring, a robber-cloth and a good wheel-barrow, we are ready to commence taking off our combs to extract. For smoker fuel, we use hard wood; maple when we can get it. We saw it four or five inches long, then split to one-half inch square. This works best with a conical cover, as the smoker is taller than the very low covers some are selling.

We see that the smoker is lighted in good shape, for we use lots of smoke, as we depend almost entirely on smoke and the brush to free the combs of bees. If you have followed us thus far, and imagine this to be the last week of July, you will understand that the lion's share of the honey to be extracted is capped over, and now it is possible to smoke almost all the bees out of the upper stories; then what few there are left can be brushed off, thus being able to do away with the tedious, neck-breaking operation of shaking.

With our wheel-barrow and the aforesaid articles, we go to the farther end of the front row of hives, for we want to commence away from the honey house and work back. In this way we work towards the honey house with our load. We commence at the front, that is, the front row of hives as they face. By working this front row first, then the next back, we do not have to work in front of any hives where bees have been disturbed; this is important, especially if there are robbers around to keep bothering the colonies we have been extracting. If there are robbers trying to get in any where, these bees will be cross and it will be more comfortable working where they cannot see you from their entrance.

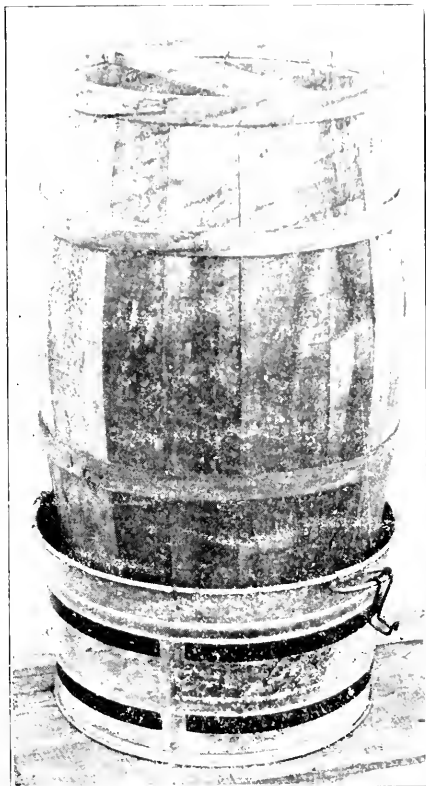
"Necessity, the mother of invention."

We all know how easy it is to trip up and shake off the bees from a light brood comb, but when you begin to shake one of these great, fat combs of honey, that weigh from seven to eight pounds each, you run up against something *real*. So it did not take long to "invent" a better way than shaking. We now smoke 90 per cent. of the bees out of the upper story, then, before they have time to come back above, lift the upper story off and set it on one of the empty bodies we carried out on the wheel-barrow. If there is an other story to come off this hive, repeat the operation and set the last on top of the first removed. These upper stories should be placed in such a position that you can stand in one place and remove the honey and just swing around and be in a position to sweep the bees from the combs in front of the hive. In removing the combs from the hive, take hold with the thumb and first finger as usual and lift out the comb; now let go with the right hand, and, without changing the position of the left hand in the least, let the comb swing down towards the entrance. Now turn your left hand in such a position that the top-bar of the frame will be towards you, or, in other words, were you to crane your neck a little either way you could see the bees on either side of the comb. Now take your bee brush in your right hand, and you are in a position to sweep the bees from both sides of the comb without changing your position, more than to rock your comb just a little. As fast as the combs are freed of bees they are placed in the other empty body on the wheel-barrow, and if robbers are troublesome keep covered with the robber-cloth.

We will now wheel our load into the honey house; as we enter the honey house with our load of honey, we turn a little to the right, as we want to unload a little in front of the center of the house, as this point is opposite of the uncapping barrel.

This uncapping barrel is simply a cracker barrel, that can be had at any grocery, usually for the asking. Bore

some holes in the bottom for the honey to drain through into a galvanized wash tub below, some supports being provided to hold the barrel up from the bottom of the tub, so as to form a reservoir to hold



CRACKER BARREL AS AN UNCAPPING CAN. what honey drains out while using. You will need several tubs, as the cappings will drain for a long time; and when one barrel is full, it is set over an empty tub to drain.

The knack of uncapping is not acquired in a day, so this job usually falls on one of the boys. Delbert, my oldest son, does the uncapping at the Kalkaska Co., yard, while Arthur does most of it here at Remus.

ADVANTAGES OF THICK COMBS.

Our old frame, with 1 1/16-inch wide top bar, is not to my liking. All of our

latest frames for the extracting combs, are $\frac{7}{8}$ -inch wide clear around. Then we space $1\frac{3}{4}$ -inch from center to center; this gives us combs so thick that with these narrow frames and a long Bingham uncapping knife, we can, by cutting deep, uncap a whole side of a Langstroth comb at one stroke. This deep uncapping trims these combs down to about an inch thick. This item of additional wax secured is no small consideration, but the main point is the superior quality of the honey secured in these thin combs, and I cannot see as this drawing out of the combs each year costs anything in particular, and we *do* get some more wax. We see that our nine-inch-long-blade Bingham uncapping knife is sharp, take a frame of honey in the usual way, place it on end, resting it on two sticks above the uncapping tank. With the left hand near the top, the frame is held in a convenient position until we get our knife started at the bottom end. We start in clear across the comb, as we expect to uncap at least 90 per cent. of it the first time over. We hold the knife so that the bevel on the under side is in line with the comb. This will throw the lower edge of the knife off, away from the comb, nearly an inch. Now, as we start upwards, drawing the knife slightly end-wise, we begin to push the top of the comb to the right until it stands perpendicular. We go clear through the whole length of the comb at one cut. If we do a good job, the uncapping will be done, except some spots in an uneven comb. If the comb is held right, and the knife likewise, as has been explained, the cappings will not touch the comb after being cut off, but will go directly into the tank below, and a few touches here and there finish the work.

With $1\frac{3}{4}$ -inch spacing we get great fat combs of honey, and then we run our uncapping knife deep, cutting the comb clear down even with the frame, and there is rarely ever a comb so uneven but the knife will uncap it the first time over. It is possible to uncap much faster, and there are less combs to handle. I do not

think it would be putting it too strong to say that two, ten-frame upper stories, with eight combs in, can be uncapped as quickly as one with ten combs in, and then the eight combs can be extracted in one-fifth less time. I can not conceive of a more puttering job than trying to uncap narrow-spaced combs in thick top-bar frames. Before we began to use wide-spacing in the upper stories, it took two of us most of the time to do the uncapping, if we made any headway. Now, since we adopted wide spacing, Delbert alone, can uncap all the honey a four-frame extractor can handle. Probably the worst mistake made in uncapping, is to hold the comb at such an angle that the cappings, after being cut off, fall back on the comb, necessitating going all over the comb a second time to scrape off the loose cappings, thus consuming more time than it took to uncap in the first place. Then others, when they have run their knife, say, one-third the way over the comb, or when they think they have all the cappings their knife will hold, stop and scrape their knife on the uncapping tank, in fact it does seem as if some people in trying to uncap honey, spent half their time scraping and cleaning their knife. The only time a knife needs cleaning is when one has been so bungling as to get some particles of comb daubed over the edge of the knife.

A RACK FOR HOLDING UNCAPPED COMBS

Imagine a hive body 20 inches wide, without sides, with legs at each corner, made of $\frac{3}{8}$, $\frac{3}{8}$ -inch strips nailed on the outside of the ends, even with the top and long enough so as to make it the right height for convenience. The ends, instead of being solid boards, are made of strips two inches wide, 20 inches long and $\frac{3}{8}$ of an inch thick, without rabbets, then, down on the legs, eleven inches from the top, will be nailed more of the strips, and on top of these strips four more will be nailed at equal distances apart. These last are to set the dripping pan on. More braces can be nailed on lower down if necessary.

Now we have a box without sides, 18 $\frac{1}{2}$ x 20 inches, and ten inches deep, furnished with legs.

We now go to the tinsmith and have him make a dripping pan 19 x 20 inches

in size, two inches deep, with an inch hole in the center of the bottom, into which is soldered an inch spout, projecting downward, beneath which a pail is set to catch the drip. REMUS, Mich., Jan. 15, 1907.



A Possible Answer to the Question Why Bees Swarm.

E. W. DIFENDORF.

Mr. R. E. W. Alexander, in *Gleanings* Page 474, says: "Then another result from our experiments, so far as we have gone, is that we have never had a colony with two or more laying queens show any desire to swarm. This is something we can not understand, as we expected these strong colonies to be the first to swarm."

In *Forty Years Among the Bees*, pages 186-7, Dr. Miller, after telling us how he confines the queen a week in his "foundation treatment" concludes in these words: "It is possible that this interim without laying may be an important part of the treatment, I don't know."

It is generally conceded that a queen reared at the opening of the swarming season is not likely to come off with a swarm during that season.

In quite a lengthy experience in queen rearing for my own needs, and to supply a small local demand, I have often found nuclei crowded to their full capacity for brood and honey, yet I never knew one in that condition to swarm. Possibly others have.

In the *American Bee Journal*, page 197, are reported some experiments, carried through three seasons, in which severe contraction of the brood chamber in early spring, and before the queen had come to her full laying, seemed to prevent swarming.

I group these several statements for the

sake of comparison, since the outcome in each case is the same. I assume that the same cause operated in all to bring this about. For this reason, among the several things that may have been factors in non-swarming in these cases, it is necessary to find one that was plainly common to all. It is easier to determine what this was by first determining what it was *not*. This would be impossible in any one case taken alone. Evidently it was not the form nor capacity of the hive. It was not the strength nor weakness of colony. It was not the race nor the strain. It was not the season. It was not the character of the honey flow, nor the amount of brood and stores on hand. It was not the absence of drones. It was probably not the ventilation nor the shade. Eliminating these "nots," there seems to have been no other probable common factor, unless it can be found in some supposable physical condition of queen or worker, or both. Such a condition the chyle theory finds in both queen and worker, but it fails when applied to the fifth case (that of severe contraction), as appears from the fact that after about the fifth week, the excess of nurses over open brood was constant. An insufficiency of chyle then was not common, and could not have operated in all to prevent swarming.

Looking for another that shall be plainly common, I find it in the queen, and call

it unimpaired strength. That is, there was no swarming because no queen showed signs of weakness. Conversely, all swarming not the effect of conditions external to the hive, is to be traced to the temporary weakness of the queen. Weakness, or inability to do full work, may result from the great laying of the earlier season followed by swarming; or be an effect of age followed by supersedure.

To further develop the argument, eggs in queen cups, whether followed by swarming or supersedure, are always an effect of the *one* cause—royal weakness.

If the queen recovers her strength after a partial cessation from labor (and we know that she lays less freely, at least *after* cells are started) we may suppose that the bees swarm rather than sacrifice her or destroy their cells. If she does not recover she is superseded. A recovered queen is jealous and restless, and to save both queen and cells, swarming is the alternative. An old queen is indifferent; makes no trouble, and is superseded. Or, to state it another way, knowing that exhaustion of vitality by age leads to cell-culture and supersedure, I assume that a like effect from overwork leads to cell culture and swarming.

By reversing this theory, the cases in hand may be understood. For, Mr. Alexander's queens could not have been overworked owing to their number. Dr.

Miller's queens, in Foundation Treatment, had a week's rest. A virgin introduced at the opening of the season is not likely to get *tired*. A queen in a nucleus can't get tired. Those queens confined from early spring to very small brood chambers had no chance to tax their strength.

Objections to the theory here advanced will, of course, occur to everyone. Of these, the most formidable is the infrequency of swarming from very large hives. Perhaps it may be met in this way: everyone at different times has noticed eggs in queen cups that after a few days were missing. They were put there in accord with the theory. But when the queen grew restless and jealous the bees removed them rather than leave a hive well stored and in every way comfortable and commodious. Their attachment to hive and queen was greater than to their cells. This explanation is not quite satisfactory. I would like a better.

In truth, I am not fully content with the theory, and offer it, not as a real, but rather as a *possible* solution of the swarming problem. We are justly distrustful of teaching that is heretodo, and that this theory is all the word means appears first in that it diminishes the hive to prevent swarming. Secondly, in that it makes the awakening of the swarming instinct an *effect*, not the *cause* of queen rearing.

OTTERVILLE, Mo., April 16, 1907.

Editorial

M. E. Darby, of Springfield, Missouri, has been appointed Inspector of Apiaries for that State.

Marcus Woodcock of this city has recently imported three Italian queens from Milan Bros. of Italy. Although ten days

on the road they were large and lively and in fine condition.

Bulletin No. 70, being a "Report of the Meeting of Inspectors of Apiaries, San Antonio, Texas, November 12, 1906," has been received at this office. Those

having to deal with foul brood will find in it much of interest. The price is 15 cts. and it can be obtained of the Superintendent of Documents, Government Printing Office, Washington, D. C. Stamps are not accepted in payment.

The capture of a run-away swarm is always attended with more or less elation. The more difficult the capture the greater the elation. For instance, I was called by telephone the other day to get a swarm down out of a maple where it had clustered around the trunk 25 feet from the ground. I went up to the limbs on a long ladder, then scrambled on up, carrying with me a hive that I tied fast to a limb adjoining the cluster. Some bees were scooped up and poked in at the entrance to get them started, then the rest driven in with a smoker, and the whole thing lowered to the ground by means of a clothes line.

The crowd that gathered to see the "fun", soon dispersed - it proved too tame - was not up to their expectations.

Mr. Fred. W. Muth has gotten out a bee veil that will certainly prevent bees from getting at the head, face and neck. Notice the cut of it in the advertising columns, also what is said about it, by Mr. Frank Rauchfuss. With the ordinary veil, tucked in the collar, the bees seem to delight in getting at the neck where it is touched by the veil. With the Ideal that trouble is overcome. And while we are talking about Mr. Muth and his doings, it is with pleasure I can say that he is one of the large dealers in honey who always pays "cash on arrival of goods."

The Price of Honey This Year.

What with the loss of bees last winter and spring, and the almost total failure of the white clover, together with the shortage in California, the prospects are that

the price of honey will go as high as it is possible to induce people to pay for it. I notice that two dealers are already quoting white extracted honey at 9 cts. We shall have some raspberry honey to sell, but no clover. We are now (July 12th) right in the midst of the raspberry flow, and it promises to be at least a fair crop. It may be two or three weeks before we extract any, as we leave the honey on until it is fully capped. When we do extract, the honey will be stored in bright, new, shiny, 60-lb. tin cans (no old, rusty, battered, second hand affairs will be used) and we shall offer it at ten cents a pound. The price *may* go higher than this, but all orders accepted at that figure will be filled at that price.

Mr. Muth-Rasmussen, of California, protests against my showing the Bingham uncapping knife with such a blunt bevel as it had in the little diagram that I gave in the Review last month. Those little cuts showing what were intended to be cross-sections of the Bingham and Jones knives were made by taking two pieces of brass rule and filing off the corners. There was no attempt to get the bevels of either one exactly correct. Probably both knives are shown with too blunt a bevel. They were given simply to illustrate the difference between having the bevel extend back only a short distance, as with the Bingham, or clear to center of the knife, as in the case of the Jones knife. Mr. Muth-Rasmussen says that the illustration and my remarks would lead one to think that the Bingham knife was of no account, and he is loud in its praise. I did not intend to give such an impression. The Bingham knife is the best I have ever used, but I have never used the Jones knife, and would like to know if it is any better or worse.

Aparian Premium Lists.

Michigan will hold two fairs this fall at which quite liberal premiums will be given

in the apiarian departments. The Michigan State Fair will be held in Detroit Aug. 29th to Sept. 6th. The bee-keeping premiums amount to \$207. The Superintendent is Mr. F. B. Ransford, of Caro. Those interested can secure a premium list by writing to him.

The West Michigan State Fair will be held at Grand Rapids, Sept. 9th to 13th, and our old friend A. G. Woodman is Superintendent of the apiarian department, and will gladly send you what he considers a model list; one that amounts to \$226.

These fairs are excellent places at which to sell honey, and to advertise it and bring it to the attention of the public. For many years I passed several weeks each fall in making apiarian exhibits at fairs, and those days will always linger in my memory as some of the happiest of my life. I would enjoy them now as well as ever, but there are too many irons already in the fire.

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The American Bee Journal Changed to a 25-cent Monthly - the Price of Journals.

The American Bee Journal is to be changed to a 32-page, 25-cent monthly. Bro. York hopes thereby to greatly increase the circulation and usefulness of his journal - that every bee-keeper, even with a single colony, will become a subscriber.

In this connection I wish to say a few words about the prices of some of the bee journals. Of course, it is a delicate subject for the publisher of a bee journal to discuss, but with my attitude towards the other journals I feel that I can do it without giving offense. By this I mean that I have no jealousy regarding the other journals. I have only a feeling of friendship for them, and wish to see them prosper. I believe that their success does not detract from mine.

Some of the magazines and other periodicals of a general nature have reduced

their price to a very low figure, so low that it does not begin to pay for the white paper upon which they are printed. The low price has resulted in enormous circulations which have attracted a large amount of advertising at a high price, and it is from this great volume of advertising that comes the profit. Bee journals can not hope for any such circulations as these, the class to which they appeal is too limited. Gleanings has the largest circulation ever secured by a bee journal, but it also appeals to other interests, such as gardening, poultry, home interests, etc. Its circulation is such that it can buy paper by the car load. Then it has its own printing office, and, under the circumstances, it is quite likely that it is not published at a loss—possibly at a profit. Still further, it could be *given away* and still be a profitable venture, on account of its advertising influence in securing trade.

But Bro. York and myself have no supply trade, and don't want any, at least. I do not, and we must look to our journals alone for a profit. As a publisher, I could see only loss in a 32-page monthly at twenty-five cents. My only hope for success would be in a large circulation with a corresponding increase of advertising at an advanced price; and I expect that that is what Bro. York has in view.

Gradually, and almost unconsciously, the Review has grown to be the specialist's journal. Perhaps it is because its editor has become intensely interested in that line of bee-keeping. It will be seen that the Review appeals to only a limited class, and can never hope for a large circulation; consequently, the price must be such that there is a profit in the Review *itself*. To me, it is as plain as the nose on a man's face, that the only hope for the Review is to make it so good, make it appeal so strongly to the man who is keeping bees for the money there is in the business, that he will have the Review even if the price is much greater than that of other journals published under other conditions which enable them to be

sold at a correspondingly lower price.

If I can't make a success of the Review on these grounds, I shall simply drop it, and turn my whole attention to honey production. However, as its subscription

list steadily increases as the years roll by, I am led to believe that bee-keeping is gradually passing into the hands of specialists, and that they are learning to appreciate the Review.

EXTRACTED DEPARTMENT.

COMBS NOT IN USE.

The Dangers that Menace Them and What Should Be Done for Their Protection.

There are three things that are a menace to empty combs, away from the bees. They are mice, mould and moth's, or, to be more exact, the bee moth's larvae.

Mice seldom trouble them except in the winter, and the only remedy, or positive preventive of trouble, in this direction, is to shut the combs up tight in hives. It is possible that some men have mice-proof honey houses, but they are very scarce. Of course, mice may be trapped or poisoned, but the safest, surest way is to shut up the combs so that the mice can not gain access to them.

Mould will not trouble combs if they are kept dry. Moisture causes the pollen in them to mould, and, sometimes, even the surface of old combs will mould to a certain extent if the combs are exposed to dampness a long time. I had something of a lesson in that direction last winter. Perhaps 100 sets of combs were stored in the woodshed here at home. The family washing is done in this room, and there was enough dampness from the steam to cause many of the combs to become mouldy to an unprofitable extent. Then one of our honey houses in the North is built over the cellar in which the bees are kept in the winter. There is a hatchway up through the floor from the cellar, and the dampness from the bees came up through this opening, but no outlet had

been provided, aside from the cracks in the walls and roof. Sometimes the frost was an inch thick on the roof and walls. Nearly all of the surplus combs for the apiary were stored in hives in this building, yet the dampness affected them and caused a large share of them to mould. Another fall we will build a ventilator to carry the moisture off up through the roof.

More difficult, however, than all, to guard against, are the ravages of the bee moth's larvae. If the combs are subjected to a low temperature during the winter, there is little danger of loss from this source. Combs from colonies that have died in the spring usually contain eggs that will hatch and give trouble. One remedy is to fumigate either with sulphur or with bi-sulphide of carbon, but it is usually possible to so manage as to avoid this. Mr. R. F. Holtermann, in an article in *Gleanings*, gives the particulars for this management, which are as follows:-

Every summer valuable combs, yes, even frames or hives are destroyed by the larvae of the wax-moth. I do not look upon the wax-moth as entirely an enemy to bee-keeping, as there is no doubt that they render harmless many a bee-tree, hive, or other repository in which the bees have built combs and in which the disease fowl brood lingers.

When the farmer wishes to destroy a weed he studies its life-history and strikes at the vulnerable points. In the butterfly we have an insect which loves light and air it is of the day. In the moth we have illustrated to us a creature in many respects the opposite of the butterfly. It loves darkness, quiet, it does not like a free circulation of air. In colder or more northerly districts the eggs, larvae, and

moth are pretty well destroyed by a low temperature. In other cases the majority of the eggs are saved in hives where the heat of the bees has kept it from being destroyed by the normally low temperatures. This being the case, as a rule the first combs which fall a victim to the bee-moth are brood-chambers in which the bees have died during winter or spring. How shall this be prevented?

Instead of doing as, years ago, I did, and as many instruct now, closing up the brood-chambers and supers, keeping the moth from entering as far as possible, I now let the air circulate freely through the combs, letting the light in, and thus making non-existent the favorite conditions of the moth.

Last year, owing to the failure of the white honey crop, with some 8,000 combs, without a bee upon them for ten months, I did not lose one from the moth, but they were put in supers or hives with the bottom board and cover removed piled up in open break joint style under cover, and sun light indirectly and air directly given access to them. The combs were, of course, kept apart in each super or brood-chamber. This is the experience of other years, and to me the bee-moth is no longer a troublesome pest under such conditions.

I may say, however, that I sent out a dozen hives with combs having cover and bottom boards, and the entrances closed, all being ready upon removal of entrance-blocks for colonies which had been bargained for. The majority of these combs were destroyed by the moth.

I am, of course, quite aware that pollen in combs adds to the danger; but even then, in our more northerly climate, at least, the ravages of the bee-moth can be kept in check by exposure to light and air.

UNCAPPING COMBS.

Some Hints on the Construction of an Uncapping Can.

The season for uncapping honey is now at hand, and any hints that will help in the work ought to be welcome. That very practical and ingenious bee-keeper, Mr. C. W. Dayton, of California, contributes some excellent advice and hints to Gleanings and from them I make the following extracts:

While I am waiting to hear some dis-

ussion from others on the question of honey-knives there will be time to look into the matter of uncapping utensils. The Dadant can is all right for 50 to 75 colonies, except that it does not permit of the feet of the operator extending under it, and on this account the workman is compelled to remain at a distance from the can. This is a fault which needs correction. It is, indeed, restful to lean forward against the cappings-receptacle, and it is especially the case where there are many hours of steady work. Where the outside helper has bent over the hives a long time in taking out combs of honey and feels as if a seat would rest his weary self, if he can help uncap and lean against the capping-can it is as good as half a seat, and a little longer space of time will give sufficient restfulness.

A capping-can should be at least 26 inches in diameter, so that two persons can work. For 200 to 300 colonies it should not be less than 34 or 35 inches in diameter. It needs that size for two persons working steadily. I know that they can get along with more cramped conditions for a while at first. But a larger can costs but a few cents more, any way.

There are a great many large wooden boxes in use in this state which ought to be pitched out of the back door, but a round, convenient metal box instead, having a nicely fitting cover to keep out flies, bees, and vermin when not in use. Such a one I have had in use for the past ten or fifteen years, and I know all about its advantages.

A 10-inch space under the cap-can will admit of a pail or a five-gallon can being laid down on its side, and having a 2x3-inch hole cut in its side. The cap-can should be set to draining every evening, or during working hours, and the honey poured into the extractor where it will find its way into the tanks with the regular run of honey.

When cappings accumulate in the capping-can, and get in the way of the working, they are taken out and pounded down hard in a tank with considerable honey adhering to them. This keeps moths from working in the cappings until they are ready to have the wax rendered from them, whether it should be a year or several years thereafter. I leave the melting of the wax until there is plenty of leisure time, and good fires in the kitchen stove in winter, and there are plenty of bee journals and books to be read. Don't fuss with such things when there is plenty of out-side ordinary work, such as extracting honey or rearing

queens, nor rob yourself of a good excuse to sit by a glowing hearth during a cold or rainy spell in winter.

Mr. Dayton has a wooden cross-arm fastened to two shorter cross-arms that are attached to the top of the can. On the edge of this main cross-arm he has fastened a strip of hard steel 2½ inches wide and 20 inches long, beveled on the under side. This is to clean the honey knife upon.

To hold the comb in place while uncapping it, a little cup is attached to the top of each short cross-bar, near one end. The end of the top-bar is thrust into this cup, when the comb can be twirled about in almost any direction. Continuing, Mr. Dayton says:

After the uncapping is over, the frame can be lifted off and placed inside the can. Honey-knives and other small utensils can also be put inside, where they will remain until the next year rolls round, and the whole outfit, with the cover on, can be set out of doors or in any out-of-the-way place. If it is to be set in the wood or wagon shed, corncrib or granary, it is advisable to set it out in the apiary with the cover off, for then the bees will clean it of honey very tidily. Then no dust or dirt will stick fast and dry to the inside.

I have also made a honey-knife. Its length should be 10½ or 11 inches; two inches wide near the shank, and tapering down to ¾ at the point. The Coggs shall flat handle is "straight goods," and do not forget the nut on the handle. I can not find any one about here who uses more than the one bevel of the blade, so the other side would be more useful left square.

It will need a tank to heat the blade. This knife is for the professional uncapper, and heat is always of very great advantage. It nearly doubles the amount of work done. I have tried every thing, and charcoal seems to do best of anything when a cast-iron tank is used; if thin metal, then coal oil or gasoline. I can not do the knife-heater justice in one paragraph. In my opinion it is a very important affair. While it is not a very large thing, and one which can be got along without, I know from experience that the bee-keeper can putter along day after day with a cold or dull knife, and waste enough time and patience to afford a dozen heaters, or which time, if turned into smooth running apiary work, would

amount to hundreds of dollars. There is room for a world of study and experiment still open to the inventively inclined apiarist.

Even this capping-can can be set in a wagonload of bees on top of the hives of bees, or on the top of the hives of bees on a wagon to be hauled to out-apiaries, because the bottom is flat and smooth, while its height compared to its width makes it not top-heavy but steady, and it weighs but 30 lbs. I know of capping-boxes two feet wide and ten feet long that make two men a good lift, and yet these big boxes are not as facilitating in work as where the cappings are stored outside the extracting-house in another receptacle.

For the cappings, I use tanks holding 50 gallons. They weigh about 15 pounds, empty, and will hold the cappings from ten tons of honey.

Instead of taking a mess of cappings from the out-apiary home every night, and scattering them around in promiscuous receptacles where moths and dirt will be likely to get into them when the tank is used and the caps pounded down solid, the tank can be rolled into the wagon on a pair of skids, or even "ended" into the wagon and taken home all at once with the load of other out-apiary utensils and trappage.

The swarms and queens and main work of taking the crop is enough to think about at the time. It is work which can be done at no other time of the year. It is where all the profits accrue. If our minds are ever clear and untrammelled it should be at the time of the harvest. The more we consolidate our thoughts on single operations the better those operations can be performed. The more work there is that is arranged to be done outside the rush of the season, the more certain are we of success, because all of the work is better and more deliberately performed. More opportunities are discovered, and better take advantage of them. Success often hangs on very small threads in any business. But success is success, notwithstanding the narrow margin. Experience can make the margin wider. Do not let one season's management be a repetition of the season before it. Improve. We enjoy life more when we learn to live it that way.

The Editor of Gleanings comments as follows:—

Our correspondent makes a good point when he says an operator ought to be able to get close enough to his work so that his feet can be placed under the machine, thus allowing his body to come in contact with the bench or table, or (as in

this case) the uncapping-can over which he is working. In this respect the Dayton outfit is admittedly superior to the Dadant; but from the manner in which many extracted-honey producers work we question whether the most of them would take kindly to this method of balancing the frame on the crosswise arm while uncapping. The great majority of them usually prefer a sharpened nail-point on which to pivot the frame while it is being handled over the uncapping-can.

Then we question whether it would be wise for some bee-keepers to attempt to scrape the knife on a hard steel scraper rather than a wooden one. However, if one works carefully there will be no danger of dulling the knife-edge on the metal cleaner; and we can conceive how, when so used, it might be more satisfactory than a wooden device.

But the uncapping-box has one distinct advantage over any form of circular uncapping arrangement, in that it can accommodate a lot of uncapped combs preparatory to being put through the extractor. A great majority of the extracted-honey producers we have visited seemed to prefer an oblong box having just enough width to take in a frame that hangs on its regular projections; or in other words, this width is the same as the inside length of the hive. The length of the uncapping-box may be any thing to suit the requirement of the producer. As fast as the combs are uncapped they are set down cornerwise; and if the uncapper can work faster than the man with the extractor, he has a place in which to put his surplus combs. The man with the machine can then pick them up as fast as he needs them; or where there is only one operator he can uncap twenty or thirty combs, set them up cornerwise in the uncapping-box, then extract them in twos, fours, or sixes, according to the size of the extractor.

The average uncapping-box is made so that one can get his feet under it the same as under the Dayton outfit; and it can be made to have all the advantages of a circular can except the one of lightness and portability, with an additional advantage of its own that of a reserve space in which combs may be temporarily placed.

The greatest objection to the plan of heating the uncapping-knives has been the lack of a satisfactory way of obtaining the heat. Ordinarily, to keep a fire going on a hot stove would prove a nuisance on a hot day, and the expense of keeping a gasoline stove going continuously would be hardly warranted. A small one or two burner kerosene stove answers the purpose very well; but some

sort of deep pan or tray is necessary to hold the water.

As a suggestion based on some ideas we have seen in use, we designed an apparatus for the purpose. The pan is 9 inches long, 6 wide, and 5 deep—the bottom being an inch smaller each way than the top. There is a notched division made of $\frac{1}{2}$ -inch wood and held to the pan by means of a small screw through the tin into the wood very near the top on each side. This piece of wood should be sawed so that the grain will run vertically, in order to avoid the danger of splitting. The wood can be quickly removed so that the pan may be used for some other purpose if desired.

To use, fill the pan with water up to within $\frac{1}{2}$ inch of the top. This amount of water will last for a long time without getting sticky from the honey, and at the same time there is not so much but that it can be heated to the right temperature in half an hour, over an ordinary single-wick oil stove.

With this arrangement there is no danger of dulling the knives, even if they are put in carelessly. One knife is left in the water while the other is being used.

Such a pan could be made at any tin shop for a few cents, and the wooden part sawed or whittled out in a few minutes.

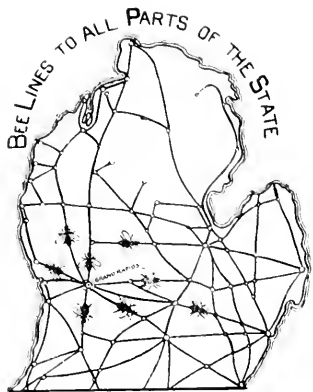
I have used a heater for heating the uncapping knife, and would not think of doing without it, but I saw no need for two knives nor for a wooden rest. I used a common bread tin, such as are used for baking bread in. After a comb is uncapped, it is necessary to lay down the knife somewhere while the comb is being put aside and another comb taken up, and it is just as easy to lay the knife in the tin of hot water as it is to lay it down anywhere, and I have found this period of time sufficient to heat the knife to the required degree. I used a two-burner oil stove for heating the water. Ed.

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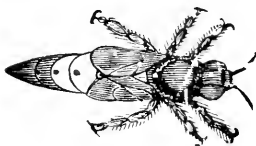
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As Regarded by National Officers.

The officers of the National Bee-Keepers' Association are bright, practical men, and their views on subjects apicultural are worthy of consideration. Here are the views of three of them regarding the book *ADVANCED BEE CULTURE*.

The President, Mr. L. A. Aspinwall, writes as follows:

As to your book, *ADVANCED BEE-CULTURE*, I esteem it very highly, and must confess that it is, according to my judgment, one of the most practical works on bee-keeping that I ever read.

The General Manager, Mr. N. E. France says:

In a few words you have given the up-to-date, advanced methods of profitable bee-keeping for progressive bee-keepers, and I wish every member of the National had a copy.

Jas. A. Green, Secretary of the National says:

I have just finished reading *ADVANCED BEE CULTURE* and write to express my hearty appreciation. The most experienced bee-keeper may study it with profit, yet it is written in so simple and concise a style that even the beginner can understand and profit by it.

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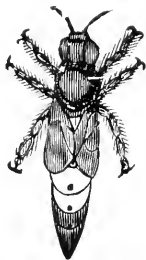
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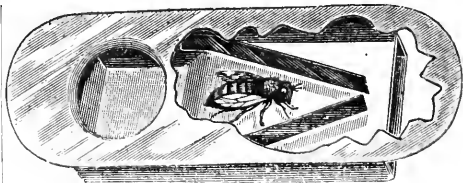
Don't fail to get a start in Caucasians; they are the finest bees in America. Caucasian queens, \$1.00 each. I guarantee my bees to be all right, or your money back. Red Clover queens, tested, \$1.00 each, untested, 75 cts.

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This firm keeps on hand a large stock of standard goods which enables them to fill orders promptly.

They are not simply dealers, but have a shop equipped with machinery, and can make any special goods on short notice.

They are practical bee-keepers as well as expert mechanics, which insures perfect accuracy.

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BEESWAX WANTED

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We furnish **EVERYTHING** needed in practical Bee-Culture, at lowest prices. We make the

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The most practical, UP-TO-DATE hives are the

MASSIE HIVES

We make them, Have you read our Catalog?

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are not excelled for durability, fine workmanship, and practical utility.

Have you seen our latest improved Champion Smoker? If not, you miss it until you get one. Write us for our 1907 Catalog. It's the easiest catalog to understand or order from that you ever saw. No trouble to give estimates. Tell us what you want.

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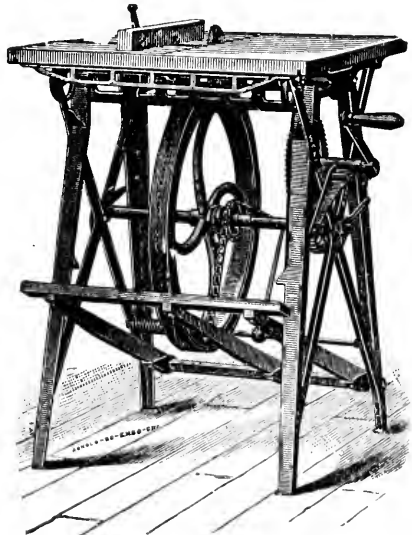
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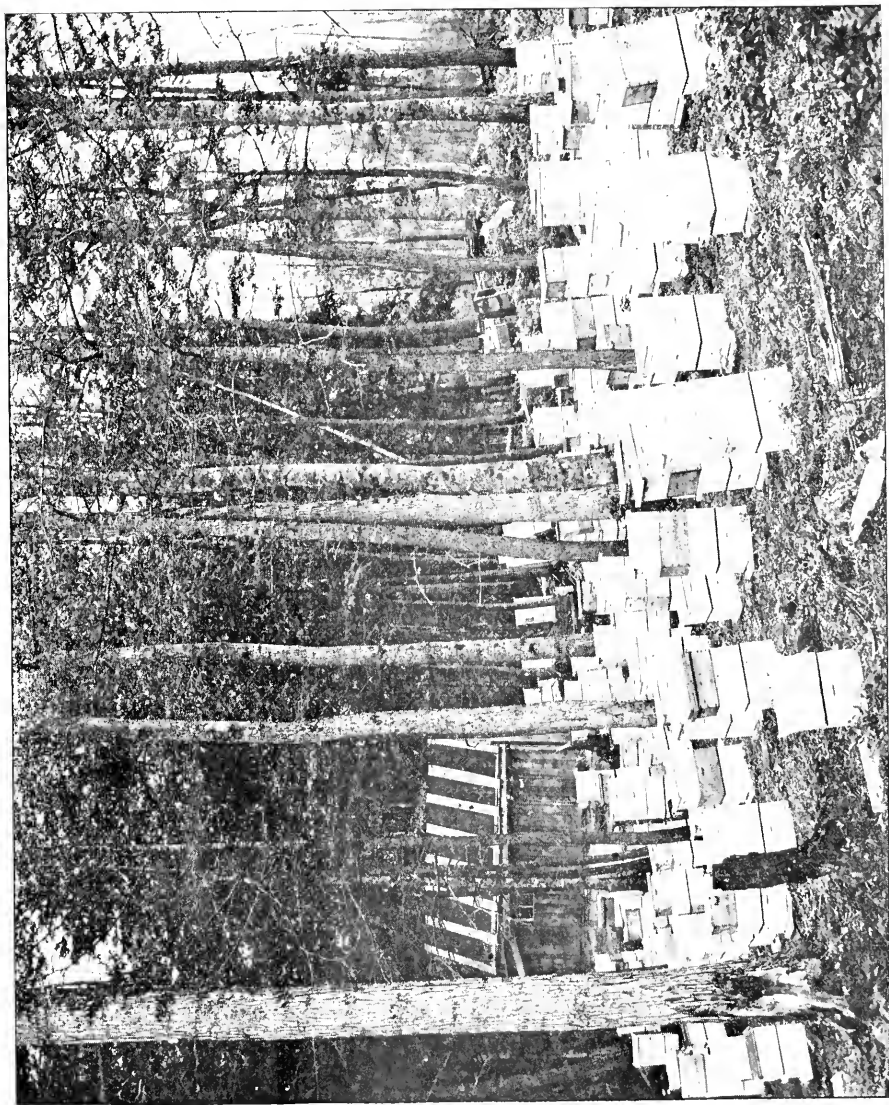
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W. Z. HUTCHINSON, EDITOR AND PUBLISHER.

VOL. XX. FLINT, MICHIGAN, AUG. 15, 1907. NO. 8

The Delights of a Trip to the Northern Apiaries.

W. Z. HUTCHINSON

LET me describe some of the delightful features of a trip to the Northern Michigan apiaries.

First, I must get up in the morning and take the five o'clock train. Nothing delightful about that? Well, the good wife and myself get up before the others are up, and she seems to take especial pains to get me an appetizing little breakfast. We often wish that she might go with me, but there is an old mother and an invalid daughter who can't well be left alone, besides there would be no one to look after business and answer the mail. Under the circumstances, wife and I can't leave home together, but she does the next best thing: Gets me a dainty breakfast, pats me on the back, and sends me away with a loving kiss on my lips.

I am getting so that I enjoy a ride of a few hours on a railroad train. It takes me away from my business. The motion

has a soothing effect; and, above all, it gives me a chance to *visit with myself*. I can sit by the window and let my mind wander at its own sweet will—think of what it likes—and there is not much danger of any interruption.

VIEWING THE "PROMISED LAND."

A little past noon we reach Fife Lake, and how good it looks to see Elmer, Ned (the horse) and the red wagon waiting for me. After driving two or three miles to the east we come up over a ridge that allows us to look over the valley in which lies the Manistee river. How blue the distant hills look across on the other side of the river; and there always comes to me the feeling that over there is the "promised land." Perhaps this feeling comes from the fact that over among those wooded hills nestle our apiaries. I have often wished that I could show my readers a glimpse of this view, but it

would be unsatisfactory. Every landscape photographer knows that a distant view becomes a mere "streak" upon the plate. The eye can appreciate it, but the camera reduces it to a mere nothing. Only comparatively near objects can be photographed satisfactorily.

THE WEIRD, DESOLATE PLAINS OF NORTHERN MICHIGAN.

The valley of the Manistee at this point is largely made up of what the settlers call the "Skiberian" plains. The land was originally covered with pine, but it has been lumbered off, and then the fire has run over the ground, burning up almost everything except the stumps. A team can drive in almost any direction over the plains. Besides the stumps there are a few scrub oaks, some popples, brakes, sweet fern, huckleberries and wintergreens. These plains are the picture of desolation; they remind one of a desert, and yet, for me, they have a strange fascination. I like to cross them. They are "something different." The last time I crossed them there were spots where the bushes were so blue with huckleberries that I could not help saying: "Wait a minute Elmer," and I would jump out and eat my fill. Did you ever try eating huckleberries and wintergreens at the same time? If not, then you have a delicious taste in store for you. The berries were not so plentiful this year as usual, but there were enough so that the white tents of the pickers had begun to dot the plains.

THE APPETITE AT PICNIC MEALS.

At last we reach the Morey yard, where John (Elmer's boy) has been keeping bachelor's hall for the last two weeks, watching for swarms, putting on supers when needed, putting in foundation, transferring some old combs, etc. Why is it that such common things as bread and butter, dried beef, and a cup of tea, have such a flavor when eaten off a barrel head, or a bee hive cover, in a honey house out in the woods?

USING BEE ESCAPES AND ARTIFICIAL HEAT.

In the frontispiece this month I am showing you a view of the Morey apiary. No honey has yet been taken off, but you can see that we are to get a fair crop, and by the time these lines greet the eyes of my readers, much of the extracting will have been done. You see, we have plenty of supers and combs or sheets of foundation, and when a colony is in need of more room it is given, but all of the honey is left on until the end of the season. It is then perfectly ripened and all sealed over, and has a body and flavor of which I never dreamed until I put this method into practice. The honey will be taken off with bee escapes, and then warmed up artificially before it is extracted. One end of the honey house is partitioned off, making a room 5x12 and six feet high. By means of an oil stove we can bring the temperature in this room up to 110 degrees, if we wish, and 95 is high enough. Honey warmed up artificially to as high a degree as it will bear without softening the combs too much, can be extracted quicker and cleaner than honey as it usually comes from the bees. Another thing, there is no need of any hurry about it. Just have plenty of supers, and pile them up until the season is over, then take off the honey with bee escapes, and extract it at your leisure. In this way, bee-keeping is robbed of much of its strenuousness. Of course, it is not absolutely necessary to leave on all of the honey until the season is over. When the honey in a super is all sealed over, it may be removed, and such full supers may be stacked up in the house until we are ready to extract.

BEAUTIES OF THE NIGHT AT AN APIARY IN THE WOODS.

I stayed with John three days; looked the bees over, and put on about 50 more supers, and then rigged up the honey house all ready for extracting. The first night that I stayed there, after John had gone to sleep, I crept to the window, pushed it softly to one side, leaned my

elbow upon the window sill, and looked out upon the white hives bathed in a flood of moonlight. The stars glittered over head; myriads of fire flies twinkled over the low lands along by the brook; and away in the distance could be

heard the weird, lonely call of the whip-poor-will. These are all common things, and yet, they filled my soul with thoughts that are beyond expression.

FLINT, Mich., July 29, 1907.



Helpful Hints in Extensive Bee-Keeping.

E. D. TOWNSEND.

THE hive stand we use and recommend is made of 2x4 material, four feet long. We used to cut a piece 16 inches long, and spike in between these 4-ft pieces, at each end. This made a stand four inches high. With the heavy loads of honey they have to hold, with our system of leaving all the honey on the hive until after the season, before extracting, these stands settle into the ground, so they are no higher than some of the four-foot pieces laid flat on the ground, and that is the way we now use them. This way saves the two 16-inch pieces, nails and nailing; then, in moving, these plain 2x4s are far ahead of the bulky nailed ones. When one begins to move bee-yards, is when he appreciates these conveniences. These four-foot stands are about the right distance apart for a group of two single-walled hives. They ought to be a foot or so longer for chaff hives.

GRADING EXTRACTED HONEY.

For several years our extracted honey has been graded; that is, our early, white honey for table use, with our system of giving additional upper stories *on top*, any partly full upper stories are on top at the close of the season, when we do our extracting. Of course, with this way of managing, especially as we try to have every upper story possible sealed, and finished, still, with all the precaution one

can take along this line, with these fifty-pound-capacity upper stories, there will be a good many partly full upper stories at the close of the season, the best we can do. The way we manage to get our superior grade of honey that sells for one or two cents above the market price, is to take off all these partly full upper stories, and extract them by themselves. As they are all on *top*, this is not much additional labor, and, in a good season, this first extracting will not amount to more than one-fourth the crop. We call this grade No. 1, as even this, our lowest grade, is superior to the ordinary honey on the market. Another way, where one has two extractors, and a little more time, is to set up two extractors, near together for convenience, then run all the partly sealed combs through an extractor before uncapping. In this way, we get a larger per cent of the superior grade of honey, but it is some more work. With this latter plan the unsealed honey is not of as good quality as our No. 1 mentioned above, and ought to go for some other purpose than table use. This plan of using two extractors, originated with me, and our whole crop at the Kalkaska Co. yard was handled this way during the season of 1905. The reason for using two extractors is that the sealed combs of honey would get so cold standing

around, waiting their turn, that it would be impossible to extract the honey unless it was returned to the bees to be warmed up. If one had artificial heat to apply in the latter case, it would work fine. Some of the slickest, cleanest, driest combs I ever extracted were heated up artificially.

PRODUCING AN ARTICLE THAT ENABLES THE PRODUCER TO SET THE PRICE.

It will not be necessary to tell the experienced extracted honey producer that this honey, after being left on the hive clear through the season, then, having all the latest-gathered and unsealed honey taken away, and kept in a grade by itself, that we would be likely to get a fine article; more, *it would be the acme of perfection*. Isn't the system very simple? Just add a few more upper stories, keep giving the bees more comb room clear through the season, then leave it as long as there is no danger of getting dark, or inferior, honey mixed with it, even if it is the last of August, if you have no fall flow, and I assure you, you will not regret it.

You will have an article in a class by itself. To find its value, you do not have to look at a market quotation. *You make customers*; there is a *scramble* for it. Any one producing the ordinary article of honey one finds on the market, is not only losing much on his *own* crop, but is a very great damage to the fraternity at large. It is an undisputed fact, that every pound of good honey that is put on the market increases the demand for honey, while every pound of inferior honey decreases the demand. Can't you see how the land lays? Have you been producing just the *ordinary* honey in the past? Has the price been unsatisfactory, and the sales slow and far between? If so, there is a better way. The better way is so simple that there is not a particle of excuse, for not practicing it. Brother bee-keeper, let us produce, just a little better honey during 1907 than we did in 1906.

REMUS, Mich., Jan. 3, 1907.



Bees, Brood and Supers Kept Together By a Dudley Tube.

E. F. ATWATER.

WE will now describe the "Dudley Tube" method, which gave us such fine results last year, with no dividing (unless we want increase), no shaking, no absconding, no sulking, no scattering to nearby hives, and *big results*. In this, not only do we go with Mr. Gill in keeping "bees, queens and supers" together, but we actually keep the *brood* and *emerging bees* on the old stand also, so as to secure the best results in the supers. Yet we have no swarming, nor need we wait until they are preparing to swarm before treating the strong colonies, unless we wish. Yet a weak colony, properly

treated, may do super-work when otherwise it would not. We wish also to be able to apply the principle of "tube" reinforcement not only to "tube swarms" but to colonies under various conditions, treated by various methods.

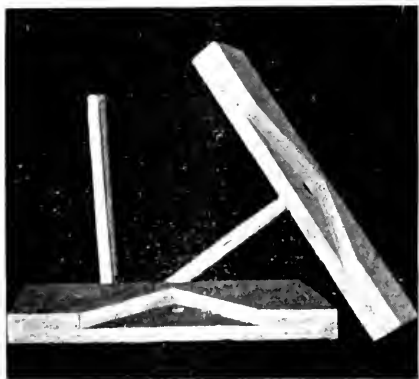
The cuts make clear the construction of the necessary, but cheap and simple apparatus.

THE CONSTRUCTION OF THE TUBE.

The entrance block is of two pieces, $\frac{5}{8}$ to $\frac{7}{8}$ thick; the lower one having a triangular piece cut out as shown. The two pieces are nailed together and at the

apex of the triangle a $\frac{3}{4}$ -inch hole is bored to receive the tin tube, which should open at its lower end into the triangular recess in the lower block.

If using the standard hives, we make tin tubes $\frac{3}{4}$ x10 inches, with an opening $\frac{1}{8}$ x10 extending from one end to the other; or tubes of perforated tin would probably be a little better. We wax the tubes inside to give the bees a foothold, or they may be given a coat of thin paint and sanded. We make these tubes by nailing on a piece of 4x4, 12 inches long, two strips $\frac{3}{4}$ x $\frac{3}{4}$ x12, just $\frac{3}{4}$ inch apart, side by side. Lay over this opening between the two strips a piece of tin about 2 $\frac{1}{4}$ x10 inches. On this lay a round steel rod $\frac{3}{4}$ x12; force the rod down, carrying the tin into the depression between the two strips $\frac{3}{4}$ x $\frac{3}{4}$ x12. We now have trough-shaped pieces of tin, 10 inches long. With a mallet pound down over the rod the projecting edges of the tin, then remove the rod and tin tube, pull out the rod, and shape the tube by a few taps of the mallet until the opening between the edges is about $\frac{1}{8}$ x10 inches. To keep



THE DUDLEY TUBE.

this crack of the right size, a drop of solder might be attached at ends and middle. Wax or paint and sand the tubes inside. Doubtless the machine hinted at, in the December '06 Review, by C. W. Dayton, would form these tubes more rapidly and do a much better job. Perhaps Mr. Dayton will describe and illus-

trate the machine for our benefit. Mr. Dudley has his tin tubes made at the tin shop.



HOW THE TUBE IS USED.

With a supply of these fixtures we go into one of our comb honey yards. Here is a strong colony which we will treat on the new plan. We find the queen, put her with the frame of brood on which she is found, (after destroying any queen-cells that may be on this frame) into a new hive-body. Fill out this new hive body by putting on each outside, a frame of honey and pollen; then five frames with starters or full sheets of foundation in the remaining space. Usually we have used starters, but during 1906 we used mostly full sheets of foundation—had to, to get worker combs. At this stage of the process Mr. Dudley uses three thick dummies, one frame of brood bees, and queen, and four frames with starters, and has been very successful in getting worker comb, so I think his plan of *temporary* contraction with these *tube swarms* worthy of trial. Into an outside comb of the old brood-nest we pour some water, and instead of replacing its lid we use a bottom-board for a lid. On this bottom-board we set the new brood-nest prepared as above, the bottom-board of the new hive forming a bee-tight lid to the old brood-nest. Now nail over the old entrance the double entrance block with the

tin tube in place, as shown in the cut. Now you will see that the lower hive is entirely closed, except for the exit through the tube; and the mature bees on the old combs, finding themselves confined and queenless, when they attempt to escape, pass up the tube and emerge at the new upper entrance, where they join the queen, and go to form and re-inforce the new colony. The nurse bees below find water handy in an outside comb, and do not leave, the most of them, except as they become older, and the same is true of the emerging brood. This forms a continuous re-inforcement of the swarm, insuring large results—and if left thus for 21 days you have every bee kept on the old stand at work during the flow and no increase.

INCREASE OR NOT—JUST AS YOU DESIRE.

At the close of the 21 days we can remove the old hive and combs and use them as desired. If we *do* want some increase, remove the lower body with its brood and bees, ten days after treatment, to a new stand, giving them a cell, or queen if there is not a cell, or a virgin on the combs, and remove the tube and block from the entrance. Or, you can remove the tube-swarm to a new stand, see that the all-sealed brood (like the Rauchfuss-Aikin method) has *one* queen-cell or *one* virgin, put your supers on this hive and remove the tube and block.

When hiving on a temporarily contracted brood-nest, as practiced by Mr. Dudley, as above described, you may wait nine or ten days, then remove the dummies and take sealed brood from the old brood-nest and put a frame of sealed brood in the place of each dummy removed, after destroying any queen-cells that may be on these sealed brood-combs. Allow the brood in the remaining old combs to emerge and pass up the tube, or remove and use as desired.

MANY MODIFICATIONS OF THE DUDLEY TUBE PLAN.

The modifications of the methods first described are attained through the use of the tube and block. With the Rauch-

fuss-Aikin plan, if no increase is wanted, you may kill the old queen at once, or wait a week later, put her hive under the hive of sealed brood having the virgin queen and supers, and tube up the bees and brood into the active colony. Give plenty of supers, for the force of workers will be immense.

With the Wright method, tube up one or both of the two stories of brood into the swarm with its young laying queen. When tubing up the force from a two-story hive, couple two tubes by slipping the end of one tube a short distance into the end of the other tube. We took some fine big results from such colonies.

A fault of the Doolittle method, in common with natural or forced swarming as usually practiced, is that for over three weeks the forced or natural swarm becomes weaker. We overcome this, and avoid the shaking recommended by Doolittle, by tubing up the bees and brood, on to the hive of combs and honey with supers above.

A tube swarm can be run into a small brood-nest, with far less danger of swarming out, or sulking, than with either a forced or natural swarm. Perhaps some credit for this contentment is due to the fact that the bees in the old brood-nest find themselves queenless, then when they do join the queen above with plenty of super room, and practically a new location, swarming is forgotten.

MRS. FREY'S QUESTIONS ANSWERED.

The methods which I have described enables us to control swarming; even in distant out-yards the tube method pure and simple can be so quickly and easily applied that we can now answer some of the questions of Mrs. Frey, page 110, 1906 Review.

First. We can keep a large apiary together until the honey is completed—just tube them up.

Second. Requeen as needed by the Alexander method of mating, or a combination of Alexander and Sibbald plans, as I have described.

Third. We can keep the bees from

wanting to swarm, but if any *do* want to swarm, we satisfy the impulse and get better average results than possible with natural swarming as usually conducted. For this locality we certainly have "a comb honey system of management that will keep the bees at home and at work when honey is coming in a flood." I advise a limited test of this method, say on 10 per cent. of one's colonies, working out the modifications by the peculiarities of one's own locality. I do not regard the method as final, nor absolutely faultless, but I do think that for this locality it is the quickest and easiest method of control yet known, has the least faults, and certainly gives the best results that I have yet seen obtained in surplus comb-honey.

I expect that the tube method will sometimes fail in the hands of the novice, because it may be applied at the wrong time or too weak colonies, or the bees may be tubed up into too large a brood-nest, or the method used in a season so poor that it would be better to discourage swarming, leaving colonies on their old brood-nests.

MANAGEMENT OF SUPERS—ESPECIALLY IN OUT-YARDS.

In out-yards run for comb honey, the management of the supers is a matter of the highest importance.

On forced swarms, made by any method, we usually put two supers: the lower one containing at least a few clean bait combs, or it may best be a super from the old parent colony, or some other colony, in which the bees are well at work. If the flow is heavy, both supers may be worked about alike. If so, at the next trip we add another super *on top*.

We aim to follow Doolittle's advice always keep a super on top in which the bees can begin work, if at any time they become crowded. This plan saves us hundreds of pounds of honey every year, in running comb honey out-yards.

If conditions are favorable, any colony at work in one super may have that super raised, and an empty one inserted below,

but we *do not* put a third super below these two we put it *on top*. With a home yard bees may be started to work by putting the empty super below the others, then in a day or two it should be raised to the top. The super nearest completion should be near the brood-nest

not at any time should there be more than *one* super between. This results in better work, quicker and more uniform work as to whiteness of cappings and uniform weight, and when you remove the super, it is usually *all* completed, a saving of your own labor— all ready to haul to your home shop where your scraping, grading and casing is done.

With us, removing the completed supers from the hive is usually done by smoking down some of the bees, pulling off the super, "jouncing" it on the ground, and stack up criss-cross or on end the supers in the shop or a tent so the bees will soon leave them. Dr. Miller's little tent escapes are too slow, as so many of the bees do not hurry out of the supers as we want them to do. The Elwood plan of piling supers ten high, and on top an empty super covered with burlap for the bees to cluster in, does not work well here.

The use of good bee escapes is the neatest, nicest way, but often requires an extra trip, as it is far from true that we can rely on the bees passing down through the escape in less than eighteen to twenty-four hours.

By the use of the bee-escape the bees clean up all drip and daub from burr-combs before the supers come off the hives.

MAKING ONE BEE ESCAPE DO THE ORDINARY WORK OF SIX ESCAPES.

As bee-escapes are quite expensive we use a plan with them that I have never seen mentioned in print. Put an escape under a finished super, preferably on a colony not so strong as desirable, and on this super pile finished supers from four to six or more colonies, after first driving out a large part of the bees with the smoker.

At your next trip they are all ready for the wagon and one bee escape has done

the work of four or more, and done it just as well.

Before closing this series on the subject of comb honey, I will say that we have in mind a machine for scraping the sections after they leave the hives, a principle en-

tirely new; so far as I know, it will remove the stain.

I hope to report our success with this machine - simple, light, portable before another season.

MERIDIAN, IDAHO, March, 18, 1907.



"Keeping More Bees," and Some of the Results.

G. W. HAINES.

I have run a harness shop for years, and kept a few bees for pastime. As I became interested in them more and more, I subscribed for your Review. You kept urging us to keep more bees, and I followed your advice until the bee business has now become something more than a pastime. As I compare the harness sales, and income from repairs, with the sales of honey, I get the bee fever worse and worse. I am now taking three

bee journals, and would not like to drop either of them. The bees pay the bills.

I am sending you a photo. of a part of my home yard, taken early in the spring, before any tearing-up was done. At this apiary I produce both comb and extracted honey, but at the out-apiary I produce only extracted, hauling the honey home as soon as it is off the hives.

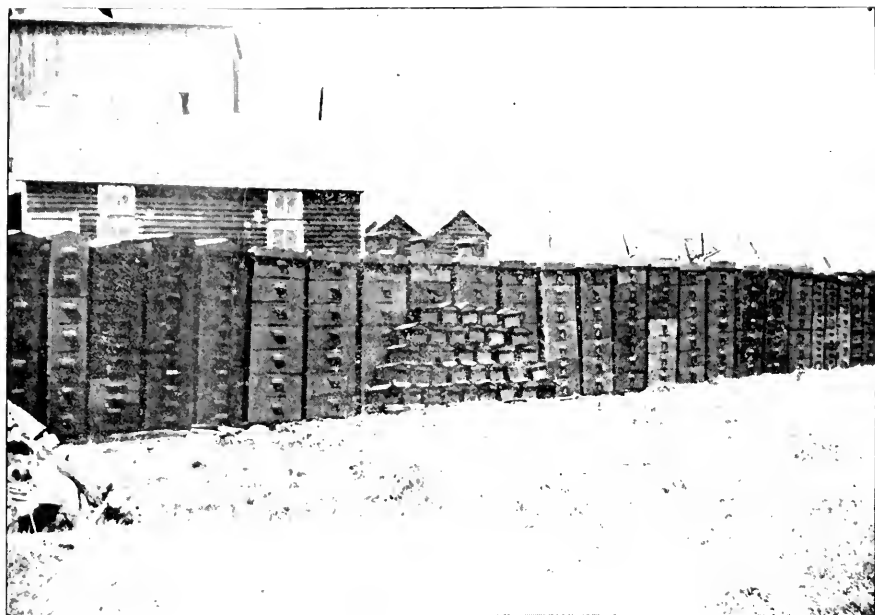
SELLING HONEY AT HOME.

I had all of my pound sections at 15



cts. apiece, or four for 50 cts. The extracted I retail at ten cents for either buckwheat or white honey. I put up the extracted in pint cans and sell them at 25 cts. each. Five-pound tin pails of honey I sell for 50 cts., and ten-pound pails for \$1.00. Many farmers come to

white honey on one side and buckwheat on the other, with a spoon in each side. When I come to a house where I have not sold before, I call for a dish and spoon, and, with my spoon, dip in a spoonful of both the white and the buckwheat honey; one kind on one side of the dish and the



Hives Built During the Leisure of Last Winter.

my harness shop and bring large pails, getting from 25 to 50 pounds. My buckwheat honey is usually sold first; then comes the white clover and basswood extracted; and, last, the comb honey. I do a great deal of talking about granulated honey, and now many customers call for a pail of the granulated, or "hard" honey, as they call it.

WHAT MAY BE DONE PEDDLING HONEY.

If I have more honey than I can sell at home, I go out and peddle it. I put up 60 or 75 pounds in bright, new, tin pails, neatly labeled, and put them and some comb honey in a spring wagon, and start down the street. My sample pail is of five-pound capacity, with a partition of tin soldered through the middle. I have

other kind on the other side, so they can see the difference, and taste first one kind and then the other. Sometimes they are surprised to learn that there is more than one kind of honey. If there are any children I see to it that they have a taste; and if there are 50 cents in the house, I surely make a sale.

HONEY EXHIBITS HELP SELL HONEY.

I find it a great pleasure, as well as good advertising, to make an exhibit of bees, honey and wax at our county fair. My wife gives away samples of honey, using a dozen neat little butter patties and the same number of spoons. Eleven pounds is the smallest amount of honey used in giving out samples at one fair.

and 15 pounds is the most; so you can see that it is cheaper than cards, and will be remembered much longer. This year my 15-year-old daughter will sit in the center of the exhibit and make wax flowers. Other bee-keepers tell me that my exhibit at the fairs helps them to sell their honey, and I know it helps me. Besides, I have the pleasure of getting the "ribbons" and a check at the end of the fair.

HOME-MADE HIVES OF CHEAP LUMBER.

The question often comes up in regard to home-made versus factory-made hives. If a man can't make his hives so that every one is exactly alike, he better buy them from the factory. I am often asked if it is cheaper to make hives than to buy them ready made. That depends upon what is wanted; whether they are to be made of lumber fit for making a palace car, or a \$10,000 house, or from a cheaper grade of lumber. One bee-keeper showed me some factory-made hives, and then kicked on the price. There wasn't a knot in them, and he could not have bought such lumber for less than \$60 a thousand. There is no call for using such lumber in

bee hives. I buy a cheap grade of pine in which the knots are sound. The knots will last just as long as the other lumber that is around them. I start in cutting out the longest pieces first, dodging all of the bad knots, then cutting out the next longest pieces. Short pieces are cut out as I go along if it comes just right. The small pieces I work up into queen rearing nuclei holding four frames six inches square.

When the stuff is all sawed out and ready for use, I sort it out, making two grades; and one day the dealer from whom I bought the lumber called after the stuff was sorted out and piled up, and was surprised at the good quality of the material after it had been cut up and sorted. He said it was worth just as much to me as though I had paid him three times as much for the lumber. By having a work shop, a good set of tools, including a good foot power saw, buying a second grade of lumber, and working it up to the best advantage during the leisure of winter, a man can get a fine lot of hives and frames at a low price.

MAYFIELD, N. Y., May 29, 1907.



Is the Second Shaking Necessary in Treating Foul Brood.

ALOIS J. KLEIN.

THOUGH an amateur only, I am pleased with the Review for its always fresh atmosphere, so that I felt not unfrequently disposed to keep it as long as I kept as few as two or three colonies. At present I have forty-two hives.

I beg leave to take this occasion also to state where I have not been pleased. You will kindly pardon my sincerity. In short, it is your teaching of curing foul brood (bacillus White.) Years ago I

have, like many other beginners, followed blindly the directions of those apicultural coryphaei that I took fancy to. In the foul brood trouble I embraced your plan of treatment because 1st, as you say in *Advanced Bee Culture*, 1902, page 44-5, that it is the only plan of treatment that can be "depended upon to effect a radical cure;" and 2nd, because of its simplicity. Not a little was I chagrined when finding by subsequent experience

that, with me, for bad cases, nothing short of the McEvoy treatment will bring relief; and that the one-shaking method may prove effective only in cases of the mild form.

Where I am inclined to take issue, is my belief that your positive assertion places *more merit* into the treatment than the treatment possesses.

I feel, however, that you should not be blamed alone; others have been proclaiming the very same doctrine, before and after. The point is: None of those others did I acknowledge as my chosen authority on questions of apiculture.

What findings did I make?

When a deceased colony was shaken upon starters, as soon as only a few cells were built, the bees stored the infected honey from their honey-sacs in them. They did *not* consume *all* that honey in building comb. Circumstances being favorable, comb-building went on rapidly, being soon followed by brood rearing in and around the middle sphere of the new combs. This brood received nourishment from the freshly gathered nectar or from the feed that the bees were given by the bee-keeper, and the *first built cells* near the top bar, with honey more or less *infected*, were gradually *sealed over*. Later brood rearing subsiding, the combs are being filled with stores towards the autumn - and we are glad to take a look at the convalescent colony so numerous in bees and rich in stores with no symptoms of disease apparent. Cured. Cured?

Next spring everything goes well. Careful scrutiny will reveal no trace of the old malady, until about the latter portion of June, or rather the first decade of July will tell the story, at the climax period of brood rearing. It is then, that I generally found the infected honey from the uppermost cells near the top-bar *removed* and replaced by brood; the infected honey being probably used for feeding the brood. The colony is infected again, in a mild form. This is probably what some papers call being "cured, but not staying cured." The infection lurking in the hive until the height of the *next* brood rearing season. This is my story. Please excuse my going at length into the matter.

If you see fit you may use a part or the whole of this letter, or modify the language in any way desirable, mentioning my name in connection with the matter.

BRAINARD, Neb. Feb. 21, 1907.

[I have many times tried shaking the bees from an infected colony upon starters and also upon sheets of foundation, and have never yet seen the necessity for the second shaking. I believe that Mr. R. L. Taylor has had a similar experience, but, like myself, he would not contend that it is never necessary. It is just possible that these colonies of Mr. Klein's secured the infection the second time from some outside source. Of course, it is not probable, but there is a lack of positiveness upon this point.—EDITOR.]

Editorial

Profit is the first principle of business.

.....

A whole lot of work of one kind is more profitable than many kinds of work and a little of each.

The A B C of Bee Culture is being published in both the French and German languages.

.....

The Modern Farmer and Busy Bee has been sold to H. A. & N. J. Shepherd, of

Eldon, Missouri. Mr. Abbott remains editor of the bee department.

The American Bee Journal as a monthly shows more polish—there is more time to do the sandpapering—and the front page has been embellished, each month, with a most beautiful apicultural picture.

To produce a good crop of honey and sell it at a good price, to make a success of bee-keeping as a *business*, is what I am trying to teach bee-keepers; and that I may know exactly what I am talking about I am trying to do that very thing myself.

Mr. Stachelhausen, of Cibolo, Texas, after a long illness, passed away the 7th of last month. Mr. Stachelhausen was one of those thorough-going Germans who know what they are talking about, and he will be missed, not only in this country, but over the waters.

Bee Veils are receiving some attention these days from inventors. I have just received one from Walter S. Pouder. It has a front, or "window" of celluloid. Glass has been tried for this purpose, and the difficulty is that the breath condenses upon the glass. Possibly the thin celluloid may behave differently.

Seventy colonies of our bees were moved on wagons about fifteen miles this week (Aug. 16) to the buckwheat region. It cost \$7.00 for teams. We won't need to secure very much honey to pay the cost of moving them. We are having quite a little experience this year with migratory bee-keeping.

An Extracting Tent that is cool and airy is described to me by Mr. C. W. Rees, of California. There is a frame-work six feet high having a roof of canvas, but the sides are of mosquito netting, which allows the air to circulate freely. Two men

lift it off or on a wagon, and, after the season is over, the top and sides may be removed and folded away for future use.

General Manager France, of the National, has gathered a list of "no pay" dealers. If a man does not pay, he is told that this list is soon to be published, and, unless he pays up, or gives a good reason, his name will go on the list. Nearly all pay.

The Perfection Oil Stove mentioned in another column is furnished by the Standard Oil company; costs \$5.00; is about two feet in height, and can be made to burn a gallon of oil inside of eight hours. Just to see what we could do, we ran the temperature up to 127 degrees in our "oven." A room of ordinary size could be easily warmed in cold weather with this stove.

California has some beautiful scenery. Here is an extract from a letter written me some time ago by Mr. F. M. Batty of that state. He says:—

"This location looks out upon a beautiful view. At our feet lies the Sespe valley with its orange and lemon groves interspersed with fields and meadows, some freshly tilled, and some just relieved of their golden hay, while here and there stand guardian groves of Eucalyptus. There are occasional glimpses of the Sespe and Clara rivers winding their silvery ways to the sea, and above all the grandure of the surrounding mountains. The little brooks play leap frog over the rocks, the quail may be heard calling from the bushes, while the verdure of spring is over all."

The American Bee-Keeper embraces every opportunity, and sometimes manufactures one, for attacking the National Bee-Keepers' Association. Because the publishers of the Bee-Keeper are furnishing goods at wholesale to a company of Eastern bee-keepers, is no excuse for this journal to be continually belittling and misrepresenting the only National apicultural organization in this country. If any

reader of the Review approves of this course, or has any specific complaint to make, I should be glad to hear from him.

.....

Surplus Combs may be cleaned up at the close of the season, writes Mr. J. Ridley, of Minnesota, by taking two or three combs out of each super, so that the combs may be spread apart, and then piling the supers up, crisscross, out of doors, and letting the bees "wade in." The combs removed may be hung upon some pieces of scantling, or put into extra supers. He says that the bees will not tear the combs unless placed close together. They won't injure old combs, but, judging from my experience, I don't feel so sure about new, white, tender combs.

.....

Metal Spaced frames are defended by Bro. Root to the extent of calling the dulling of the honey knife upon the staples a "man of straw." He has talked with those who have used them, and they ridiculed the very idea of dulling the knife upon the staples. I passed three or four days lately in uncapping combs, and some of them were in frames that were staple-spaced. I will be candid enough to admit that the presence of staples is not a serious obstacle when uncapping combs, but it certainly is very exasperating, when working with a keen-edged knife, to have it go slap dab against a staple that was unseen because covered with wax or a bit of brace-comb.

.....

Bee Escapes are all right for getting bees off the surplus honey, but there is one point that all must bear in mind; if they don't, it will be most forcibly impressed upon them, and that is that the supers must be bee-tight when escapes are used after the close of harvest. If there is the least bit of a crack that robbers can squeeze through, they will be into the super and carrying off the honey very soon after the escape has done its work. You may think that your covers and supers fit perfectly tight, but you will

be surprised to see how small a crack will allow a bee to wiggle through. It is possible to have hives and covers fit perfectly, and it is also possible to *think* they are bee-tight when they are not.

.....

Extracting is finished at two of the Northern Michigan apiaries. The yield was not so great as we had hoped and expected. I think bee-keepers are given to over-estimating their crop while it is on the hives. The average in these two yards was only about 45 pounds per colony— not half a crop, but as good as the average. The Morey yard, the one shown in the frontispiece, is yet to be extracted, and I expect that that will have a much higher average. The excluders were put on early in this yard, and there will be solid combs of honey, instead of some from which brood had hatched, as was the case in one of the other yards: besides, all of the hives in this yard are ten-framers, while at least half of the others were in eight-frame hives. I came home to get out this issue of the Review, then I am going back, and Elmer and I will live in a tent and have a picnic of a time while extracting this honey. Don't you see how nice it is to be able to extract your honey just whenever you are ready?

.....

The Far-Western Bee-Keeper for June contained the following advertisement:

"Wanted, a business manager for this journal. To run a comb honey apiary of 100 colonies, all alone, through the honey season, look over several hundred pages of bee literature every month, prepare copy for 20 pages of this journal, look to the subscription list, make collections, advertise, and attend to all of the numberless details of the publication, is too much like slaving, and, as I don't fancy slaving, I would like somebody to help me."

Since June, the Far-Western has failed to put in an appearance, and I fear that brother Horn failed to secure the needed help. Without actual experience, one can have only a faint conception of the amount of work necessary in getting out even a small and very ordinary monthly journal.

Were this more generally understood there would be fewer ventures and less dashing of hopes in this direction.

In a cellar is where I have been extracting honey during the last few days. It is a cool, comfortable place in which to work, and there are no cracks through which the robbers can squeeze. The extractor is set up on a platform some eight or ten inches above the cellar bottom: the tub into which the honey is strained sits in a hole dug perhaps six inches deep into the cellar bottom, then, still lower, in a sort of pit, about two feet deep, are the scales upon which is set a five gallon can that receives the honey from the strainer-tub. An electric alarm bell gives notice when the can is full. About five feet of the back end of the cellar is partitioned off and the honey warmed up in there by means of a lamp stove.

The one great objection is that, in order to give ventilation, the door must be of wire cloth, and this allows the odor of the honey to escape, which attracts a great crowd of robbers, if we are extracting after the close of the harvest, and when the door is opened they swarm into the cellar. We overcome this difficulty to a great extent by making a great big "smudge" in a tin can and setting it in the cellar way just outside the door.

A Tent as ordinarily used for a honey house, may be much improved, writes Mr G. W. Haines, of New York, by making it higher and putting a "window" of mosquito netting in each gable end. The trouble with a tent is the hot, close interior when it must be closed to keep out bees. Mr. Haines bought some 8-oz. duck and sewed a three-foot strip all around the bottom, thus making the walls six feet high instead of only three feet, using poles with a corresponding increase of length. To furnish the windows he cut out a piece 18 inches square at each end. The piece was not cut out entirely, but the lower edge was left fast, so that

it hung down like a flap inside the tent. The edges were bound and furnished with buttons and button holes, which allowed the flap to be buttoned up in case of rain. The opening, as already mentioned, was covered with netting, and a small opening left at the "peak," which served the purpose of a bee-escape. A tent thus arranged proved to be as cool, as an ordinary honey house.

How to Get Good Prices.

I have urged my readers to ask a good price for their honey, but simply *asking* is not enough. It is a very easy matter to ship off a crop of honey to some dealer and get the ordinary, ruling market price for it. If you wish to secure more than the market price, then some effort must be put forth. In the first place, there must be some *reason* why a good price shall be received. Take my own case for instance; my honey is not ordinary honey, it is raspberry honey. Then it is thoroughly ripened—left on the hives weeks after it is capped over—and is thick, rich and delicious; and it is put up in bright, new 60-lb cans. It is impossible to produce an article superior to this. Having produced such a fine article, and put a proper price upon it, the next step is to let consumers know about it—advertise it and send out samples. I am now advertising it in three of the bee journals. Of course this costs something, and if a man were to be in the business only a year it might not pay him, but a man can gradually build up a trade, and secure a class of customers that will buy his honey year after year without any advertising. I am now receiving orders from men who bought honey of me last year. They don't even ask for samples; they say, "if your honey is like that of last year, you may send me so many cases," and they send on the cash.

Now friends, isn't it worth while to have such a trade? To be able to sell your honey year after year to the same men, those who are willing to pay you

from one to two cents a pound above market price, and send cash with the order, because they *know* that no finer honey can be produced, and that it is worth what you ask for it? The whole thing can be told in a few words: Produce honey of superior quality, and then let consumers know about it the latter is fully as important as the first.

Re-Queening An Apiary.

There is one quite important matter in regard to bee-keeping upon which I have not yet reached a decision; and that is as to whether it is profitable for the bee-keeper to requeen his colonies each year, or once in two years, or if he shall leave this matter entirely to the bees. Personally, I have not had the experience that will enable me to decide. Until the last two or three years, I have been more or less engaged in the queen trade, and the demand for tested queens has resulted in the requeening of the majority of my colonies. Lately I have begun keeping bees in larger numbers, and turning my attention wholly to honey production; that is, not selling any queens. Last spring there were quite a number of queens that died; and others failed to come up to the desired standard. A year ago the latter failing was also noticed. Last spring we would go through the apiary and examine each colony to see if it had a laying queen, or was short of stores. A week or ten days later a similar examination would reveal perhaps four or five colonies out of 100 that had become queenless. A still later examination would show more colonies that had become queenless, or queens that were failing.

The question arises, would it be profitable to requeen colonies having queens two years old? If this could be accomplished with no expense or labor, if it were simply a matter of choice between young queens or those two years, or more, old, I think the decision would be in favor of the young queens. Of course, there

are methods of requeening that do not require very much labor; for instance, Mr. S. D. Chapman simply removes the queens and allows the colonies to requeen themselves. Mr. Chapman's sole object is not to requeen, but to prevent swarming and increase his crop by curtailing brood rearing.

I believe Mr. France also favors requeening, but I think that the majority of bee-keepers favor leaving the matter of queen supersedure entirely with the bees. Mr. Townsend argues that he keeps bees enough in each apiary to secure all of the honey in that locality, even if some of the queens do play out in the spring. Still further, he favors using his time in keeping more bees, establishing another apiary if necessary, rather than employ it in requeening colonies each year. I can see only one weak point in his argument: Is he always sure that each location is fully stocked? Last year we had 150 colonies in one location, this year there were 200 during the height of the harvest, and the yield per colony was greater than that of last year. This matter of overstocking is not yet fully settled, or understood. Mr. E. W. Alexander recently said, in *Gleanings*, that the time would come when we would realize that what is commonly called the "season," which is the condition of the ground as to proper moisture and the temperature, and the electrical condition of the atmosphere at the time the flowers are in bloom, will have a thousand times more bearing on our surplus than the amount of bloom or the number of colonies we may have in one apiary.

I would like to hear from my subscribers on this subject. Shall we requeen, if so, why, and when, and how? If not, why not?

Get Good Prices for Your Honey; Don't Fool It Away.

Last winter and spring were terribly hard on bees; the mortality was great.

Then, on top of this, came an almost total failure of the white honey crop. The result is one of the shortest honey crops that this country has experienced in a long time.

The National pure food law has cut out the glucose competition and largely removed the suspicion of adulteration.

Coupled with all of the foregoing comes a general advance in the price of nearly all commodities, and bee-keepers certainly ought not to be so far behind the times as to neglect to take advantage of this opportunity; or, rather, to claim what is rightfully theirs. I do not advise the asking of an exorbitant price, even if it could be obtained; and it can't, as honey is a luxury (not a staple like bread, meat and potatoes) and few people will pay a fancy price for it.

Under the circumstances, I think strictly first-class, white, extracted honey should bring ten cents at wholesale and the same grade of comb honey at least 16 cents. I believe any man having any of that grade of honey can secure those prices between now and January if he only holds on to his honey and takes the proper course to secure customers. I am already getting orders for my honey at that price; but there is occasionally a retail dealer who "balks" at that price, saying his trade will not allow him to pay that figure. The prices at which honey has been retailed in the past will not allow such a price at wholesale, but retail prices must be advanced, and there never was an opportunity like the present for advancing them "there is a reason." Retail dealers must explain to their customers that bees died largely as the result of the late cold spring, that the clover harvest was almost a failure, and the result is a very short crop with the consequent advance in price. Call attention to the additional fact that the prices of nearly everything are advancing—people *know this*, and can comprehend why the prices of honey should also be advanced. A little careful explanation like this on the part of the retailer will enable him to

put the price of honey where it ought to be under the circumstances.

Getting the Review Out on Time—or Not on Time.

To get out a publication on time is commendable. Its readers are thereby pleased. A daily paper *must* be out on time. The same may be said of a weekly. A monthly has a little more leeway. If a publisher's sole business is that of publishing, he can usually get out his journal with a reasonable degree of promptness. If he is a publisher and something else as well, if he is a publisher and bee-keeper, as in the case of the Review, there will come times, especially in the busy times with bees, when it is impossible, or at least, not advisable, to get out the paper on time. To illustrate: Had I left the bees in order to get out this issue promptly on time, buckwheat honey would have been mixed with the white raspberry honey. I had to drop everything and help hustle the white honey off the hives ere it was darkened by the honey from the fields already whitening with the buckwheat. After the white honey was extracted at this one apiary, we wished to move some bees from another yard to a buckwheat location. They must be moved *at once*, or the harvest would be over and passed. Unless the bee-keeping was thus looked after, there would be serious financial loss. This explains why this issue is late. Perhaps some will think that if I am to keep on printing the Review, I might better drop the bees. Possibly I had; but here is another point: If I had not been keeping bees, doing the work with my own hands, do you suppose that this number would possess its peculiar vim, vigor and freshness? It seems to me that nothing would more peculiarly fit a man to edit a bee journal as would the actual work of keeping bees. It enables him to see things from the bee-keeper's standpoint.

I believe that I better keep on running these apiaries, giving my readers the

benefit of the experience thereby gained. I believe this is of more importance than that of getting out each issue of the Review with exact promptness. When a man takes a newspaper he wishes to be able to read it before the news becomes ancient history, but in a technical journal like the Review, the information given is just as valuable (if seasonable) given the 20th of the month, as though received on the 15th. It is the character of the journal that gives it value, rather than the exact date it is received.

I could publish each issue of the Review upon exactly the same day of the month, but, in order to do so, would sometimes be compelled to sacrifice some things that seem to me to be of more importance.

Success Comes to Him Who Endures or Perseveres.

Once this summer I witnessed a ball game between two league teams—the first game I had seen in five years. The teams were very evenly matched, and neither side scored until the 12th inning, when Battle Creek put four men over the plate inside of five minutes. It all came about through the pitcher of the Flint team becoming tired out. I noticed that the balls did not come in with their usual whiz, they came in *slow*, and one after another, the boys, "found them," and knocked out some grounders that went cavorting clear across the grounds. You see, this game was lost because the pitcher could not endure to the end.

As usual, I tried to apply this lesson to bee-keeping. Last fall the cold weather and snow came on unusually early and caught us before our bee cellars were dug, and we had to "endure" cold and discomforts in getting the cellars completed and the bees into them. Then came the long, cold spring in which we had to protect and feed our bees. White clover turned out to be a failure, and we had to move the bees at Flint to the

alsike fields and to the raspberry regions. We are now planning to move some of the bees to the buckwheat fields.

Had we not persevered and got the bees into good cellars, we would not have wintered them; had we not protected and fed them last spring, there would have been no bees when the berries bloomed, and had we not moved the bees to where they could find pasture, there would have been no crop gathered. You see, it is often a question of endurance—of perseverance.

The Hutchinson System.

Perhaps it is claiming too much to call it the Hutchinson system, as it contains nothing particularly new. The most that can be said of it is that it is a combination of other systems or methods.

There is nothing new about having plenty of supers of empty comb and tiering up, leaving the honey on the hive until the end of the flow, lots of others have done that, and I am just a little at a loss to decide why this plan has not been more generally adopted. Perhaps the cost of the supers and combs has been one drawback, but the interest on the money invested is nothing compared to the advantages. How some bee-keepers have to *hustle* to extract the honey during a good flow in order to give the bees room. See how easy it is if there is an unlimited supply of supers and store combs at each yard. Simply give each colony that needs it, another super.

Another thing that has discouraged bee-keepers from adopting this method, is that robbers give much trouble when taking off honey in the usual manner after the season is over. Bee escapes will allow of the removal of the honey at any time with no trouble whatever from robbers. "Yes," says one, "but how about extracting the honey? Won't it be too cold and thick?" Now we are getting to the root of the matter. It will. And if left on the hives until all capped, and

taken off in cool weather, it will be too thick to handle to advantage, even if no escapes are used.

Artificial heat is the final analysis of this problem, and its adoption is the only thing that would allow of the adoption of this system. Last year I heated up the honey by means of a coal stove; this year we are using a Perfection, kerosene oil heater; and it is perfection. It is the first oil burning stove I ever saw that would not smoke. It has a cylindrical wick, and just above the wick is a round plate of iron called the "flame spreader," and the wick is turned up until it strikes this "spreader," when it can go no higher, and it won't smoke and can't be made to do so. One end of the honey house, or cellar, is partitioned off making an "oven" as we call it, large enough to hold 50 or 60 supers. We fill this up at night, light the stove just before we go to bed, and turn the wick part way up, so that the temperature at the top of the room will stand at about 100 degrees. In the morning we re-fill the stove, turn it on full blast, and go to extracting, taking the first supers from the top of the room. As some of the piles are lowered, more supers are taken from other piles and added to these, thus bringing more honey up into the

heated "zone." As fast as there is vacant room, more supers are brought in, and sort of a routine is followed whereby one always has hot honey to work; and more a heating. It uncaps so easily, extracts so easily, and strains so easily.

We have two small pails filled with water, and keep one of them constantly on the stove, and the other by the uncapping barrel. The uncapping knife is kept in the one by the barrel, and, as soon as the water cools it is exchanged for the hot one on the stove.

Perhaps this system of management might be called the *gentlemen's* system. It certainly is an easy, pleasurable, leisurely way of producing first-class extracted honey. There is no hurry, hurry, hurry to get the honey extracted because the bees are needing more room. There is no shaking and brushing of angry bees out in the boiling hot sun. Unless there is a flow of dark honey following one of light, there is no hurry whatever about getting the honey off the hives. Even when off the hives, it may be extracted at leisure.

Plenty of supers and combs, bee-escapes and artificial heat are the Hutchinson combination where am I making any mistake?

EXTRACTED DEPARTMENT.

SELECTING BREEDING QUEENS

The Choice May Better Be Made on the Basis of Results Rather Than Upon the Causes.

Awhile ago I copied from Gleanings an article by Mr. Holtermann in which he enumerated a few of the things we ought to know about bees that we might choose our breeders wisely, and now Gleanings has an article from Mr. C. F. Bender calling attention to a very practical

method of choosing our breeders, even if we don't know so much about the *whys* as Mr. Holtermann thinks necessary. Mr. Bender says:

Mr. Holtermann's article on page 413 is a very clear statement of what we ought to know about our bees, and don't; but I rather doubt such knowledge being of very great use in the practical breeding of bees, even if we possessed it. I should like very much to know which of my queens produce the longest-lived workers, which bees would fly furthest, live on the smallest rations, resist unfavorable weather the best, carry the largest

loads, or make the most trips. But even if I knew all these things I might yet be a little puzzled to know which queen to breed from if I had nothing else to judge by.

If we turn our attention to practical results, instead of looking for the causes of those results, the decision is much easier. We want the bees that will store the largest quantity of the most marketable honey, and they must be gentle enough so that we can handle them. Those are the requirements in a nutshell.

To take a case from my own practice: The season last year was nearly a failure, but I had one colony that produced honey to the value of \$11.00, besides their own stores. The next best gave a net return of \$6.00; several others of \$5.00, or nearly that. It would be interesting to know what combination of qualities caused those bees to go so far above the average, but such knowledge would probably make no difference in the selection of a breeding-queen. As it happened, all the best colonies were gentle, and all were pure Italians, and so were more likely than hybrids to hold those qualities in the next generation. Other things being equal, of course the colony storing the greatest amount of honey would be chosen. But the best colony produced watery cappings, and so was not suitable for comb honey. The point I am aiming at now is this: That the qualities enumerated by Mr. Holtermann are important only as they affect the honey crop; and of the honey produced we have a ready means of judging.

In regard to controlling the drone parentage, I think the best we can do is to follow Dr. Miller's plan. If one has more than one apiary, keep all the best colonies at the home yard—that is, those that gave the best records the previous season. Then do all your queen-rearing at the home apiary, and let the drone question take care of itself. Where we have a hundred colonies in one place, the mating with drones from other sources will not exceed five per cent. If we are to make any improvement in our stock, it is quite as important to weed out the poorest as it is to breed from the best.

BEE-KEEPING AS A BUSINESS.

Some Hints About Learning the Business and Then Sticking to It.

You know that the Review believes in making a business of bee-keeping, of

dropping all other entangling alliances, and turning the whole time, attention and talents in this one direction. Learn the business thoroughly, select a good location, and then make a business of the business. Right in this line is a short item in the last issue of *Gleanings*, that I would like to copy. It was written by my friend J. E. Crane, of Vermont, and reads as follows:

A good deal is being written these days about whether it is safe to depend on bee-keeping alone for a livelihood, or whether it should be combined with some other business. Now, I see no reason why a little good reason should not be applied to this subject as well as to others. To expect a man to succeed in raising wheat on the hills of Colorado, or peaches in Minnesota, or in lumbering on the prairies of Illinois is on a par with expecting a man to succeed in bee-keeping where little or no honey is to be had. Of course, he must have a location that is fairly well adapted to his business.

Again, why should we expect a man to succeed in producing honey before he has thoroughly learned the business than to expect a wheelwright or carpenter or glass-blower or merchant or manufacturer, until he has thoroughly mastered his own kind of business?

We find in all trades and professions those who fail as well as in bee-keeping those who meet with moderate success as well as those who have achieved enviable success.

The fruit-grower, the farmer, as well as the merchant or manufacturer, have their poor years when it is difficult to make both ends meet. The same is true of the bee-keeper. Ability counts in this business the same as in all other lines of effort. It is certainly true that a man can keep a few bees, a little dairy, and some poultry, and not meet with as great extremes as with any one kind of business; but I doubt if he can make all of them pay as well as if only one kind is followed.

If the venerable and kind-hearted Quinby were living today with all our improved modern appliances I very much doubt if he would advise any very large mixture of other kinds of business with his bee-keeping. The only kind of business I would add would be "more bees."

It is quite likely that there sometimes comes a time when a bee-keeper, or any man, for that matter, has a feeling come over him that some other business would

be more desirable. Last spring, when I had the loss of bees over at Port Huron, some more up North, the snow was a foot deep and the temperature below freezing week after week, I will admit that I could not help thinking how nice it must be to have some business not dependent upon the weather. Now, when we are filling our empty hives with swarms, and piling up super on super on some of the hives, the bee business seems a pretty fair business. On this subject of comparing one business with another, and sticking to your own business, even if it is not always all sunshine, there is a short editorial in a recent issue of Green's Fruit Grower, that contains some excellent advice. It reads as follows:—

Persistency wins. A man who is easily discouraged seldom accomplishes much. When you consider the question you will see that every business is profitable. If a certain business were not profitable, that particular business would be discontinued, and no one would be left to follow it. It is true that some lines of business pay better than others, but all are profitable. The fact is, it is the man behind the business who makes the business profitable more than the business itself.

Good management leads to success, but there can be no management without persistency. When you undertake a new enterprise you will find that there are drawbacks, hardships and discouragements. It is under such circumstances that persistency leads to success. Be patient, industrious, economical and hopeful, but above all be persistent. In other words, keep everlastingly at it.

Do not worry. Do all you can to promote your enterprise, then wait patiently for results.



COMB VERSUS EXTRACTED HONEY.

Some of the Reasons Why One Kind May Be More Profitable Than the Other.

How often the question is asked me: "Which is the more profitable to produce, comb or extracted honey?" There are probably some locations in which one

kind has little, if any, advantage over the other, and it might be profitable to produce both kinds in the same apiary, but there are locations and circumstances where comb honey could not be produced at a profit, as compared with extracted, and *vice versa*. The profitable production of comb honey requires populous colonies, and an abundant flow of white honey. A slow or intermittent flow, or a dark honey, calls for the extracted form. Out-yards can be much more easily managed for extracted than for comb honey. There are many more minor points, and I think I have never seen the ground more fully covered than it is in an article in last Gleanings, from the pen of Mr. E. W. Alexander, of New York. He says:—

Frequently I receive letters from different parties wishing to know which is the more profitable to produce—comb or extracted honey. This, in some respects, is a rather hard question to answer, for much depends not only on the location and season, but also on the man and his methods. Rather than produce extracted honey as some do I should prefer comb honey.

There are many localities where the surplus is gathered so slowly, even in good seasons, that it is almost impossible to produce a nice quality of comb honey. Then there are many seasons, even in good locations, when the surplus comes so unevenly, by unfavorable conditions of the atmosphere, that this, too, to a great extent, prevents the securing of nice comb honey. We all know that, the sooner the sections can be filled and well capped, then removed from the bees, the nicer will the honey appear.

Some years ago, in conversation with one of our principal honey-merchants, he called my attention to a fine lot of comb honey he had just received. Each section was glassed on each side, and the combs were as white as any new comb I ever saw. I don't think the sections could have been on the hive more than ten days. They were so white and free from travel-stains he told me he could sell that honey for 4 cents per lb. more than ordinary honey, on account of its fine appearance.

A location that will require the whole summer in order that a colony can secure 30 or 40 lbs. of comb honey should never be used to produce honey of that kind, for only a rich harvest with strong colonies and warm nights, so the bees will continue

their work in the sections, night and day, will give us choice comb honey, and usually it is rather hard to have these requirements all at the same time; and if either is lacking, then we have a surplus of poor quality and a large number of unfinished sections.

Then there is the expense connected with comb honey, which we must consider. This is no small item in large apiaries. I hardly know just what it would be now, as it is a long time since I produced comb honey. But when I did, it cost me at least 2 cents per lb. for the necessary sections, comb foundation, glass and crates. Then the freight charges were high, and frequently the honey got badly damaged in transit; and the worst of all was the uncertainty of securing much surplus. Then when I got the net returns from the commission men, and found they were only 10 or 12 cents per lb., with still another discount to be made of 2 cents per lb. or over for supplies, I gave up the production of comb honey in disgust.

The desire to swarm is hard to overcome in producing comb honey—much more so than with extracted. It is much handier to make increase, rear queens, or form nuclei in running an apiary for extracted honey, for I think these all require some brood when started, which never should be taken from a colony at work in sections, for it soon reduces their working force and causes them to be somewhat discouraged. This can be easily proven by removing their brood and putting in its place combs partly filled with honey.

Now, the question of labor is one we must consider. From our past experience we find, from the time sections, crates, comb foundation, separators, and glass are received from the manufacturer until the comb honey is sold, it has required far more labor than it would to produce a given amount of extracted honey. Whichever you produce, I consider it of as much importance to prepare your bees well in the spring for the summer harvest as it is to prepare them in the summer for the long cold winters of the North.

In the above I have briefly called your attention to a few of the many troubles in producing choice comb honey. With extracted honey it in many ways is so different that it is almost like another business. We have the whole spring season to rear young queens, make increase, and build them up into strong colonies; and although when the harvest comes there may be some still weak in bees, we know that they will give us some surplus,

even though the season is a poor one, and the harvest is strung along all summer with only now and then a good honey day.

As soon as a colony is strong enough in bees, and is full of brood and honey, all that is necessary to do is to put on top a hive of empty combs with a queen-excluder between; and if you want them to commence storing honey above, at once exchange an empty comb from your upper hive for a comb of brood from below.

Some prefer shallow combs to extract from; others prefer combs of the same size as those below, and use one or two combs less in their extracting-supers. We prefer all combs in the apiary to be of the same size, and use the same number in the extracting-super as in the main hive. This gives more comb surface, so the honey will evaporate much faster than in thick combs.

Here is one of the principal reasons why we are never troubled with thin honey. A strong full colony that has plenty of room to spread out their honey and keep it hot night and day will thicken it very fast.

Storage-tanks are very important in producing extracted honey of fine quality. After it is strained into them there will be a little scum rise to the top, which can easily be skimmed off, and never should be allowed to go with the honey. Then it is easy to draw off the thick honey from the bottom, which gives you the very best quality that can be produced.

Comb honey is rather unfortunate in many ways. It is used only for table use, and here it has to compete with nearly all kinds of fruit, maple syrup, and a small per cent of extracted honey. But not so with extracted. There is a growing demand at nearly all times of the year for it. This is used mostly for manufacturing purposes.

As to the amount of comb or extracted honey that an apiary can be made to produce this is well worth considering. Some good bee-keepers estimate 2 lbs. of extracted for one of comb. We are sure we could never secure more than one third as much comb as we do extracted, even though it cost far more labor.

Still another thing I like about producing extracted honey is that, as soon as the harvest is over, the work in the apiary is nearly done, except putting the bees in their winter quarters.

In the above I have tried to show both sides of the question to the best of my ability, and I leave you to answer your own question as to which is the more profitable to produce comb or extracted honey.

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5-07-tf

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Jas. A. Green, Secretary of the National says:

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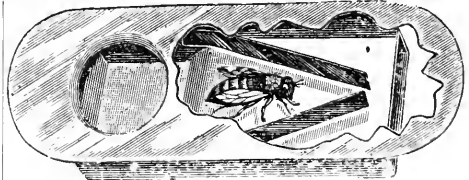
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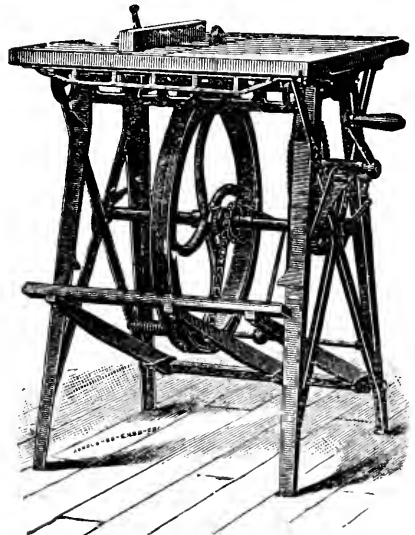
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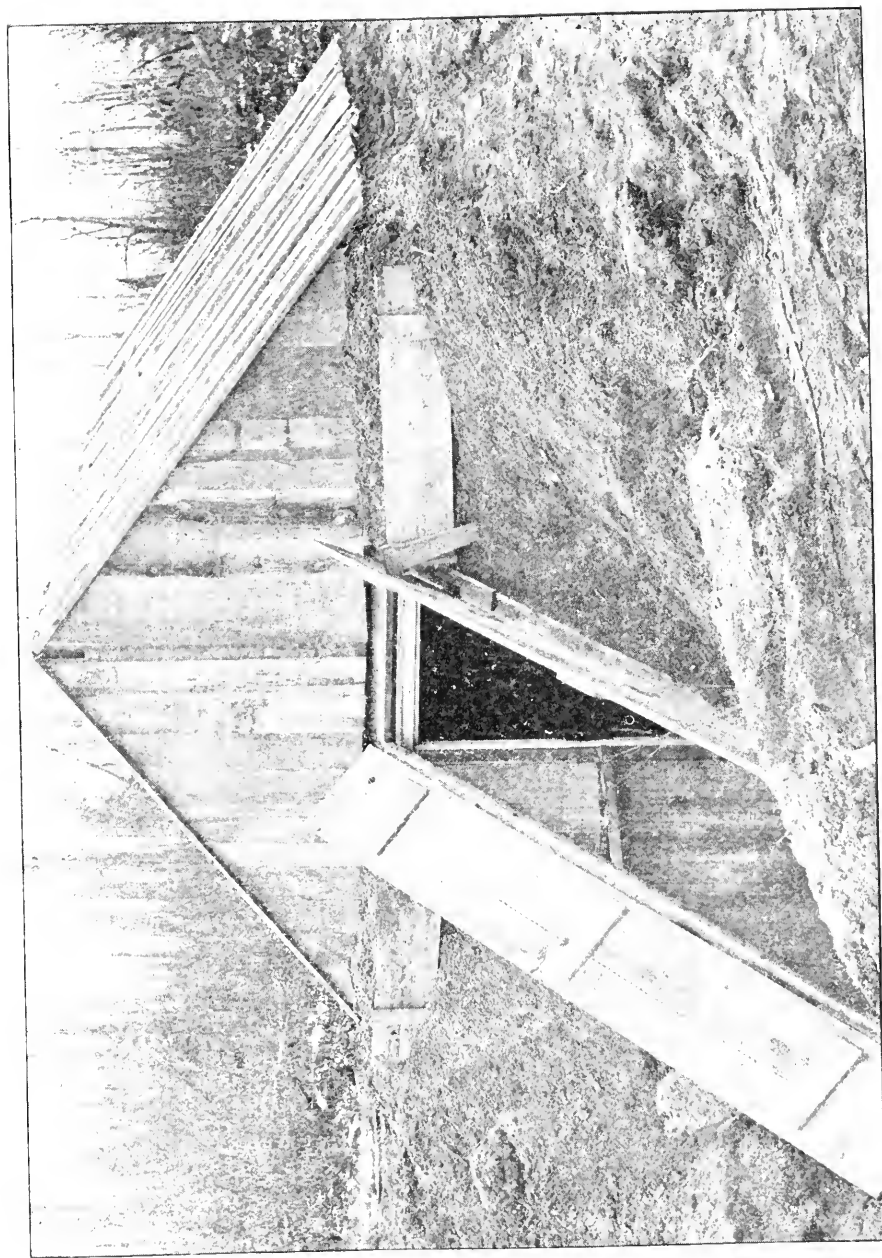
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W. Z. HUTCHINSON, EDITOR AND PUBLISHER.

VOL. XX. FLINT, MICHIGAN, SEPT. 15, 1907. NO. 9

Building a Cheap Cellar That May be Made Permanent.

W. Z. HUTCHINSON

WE built three out-of-doors cellars last fall in Northern Michigan, and I'll tell you how they were built. Each location had a sandy hillside near the bees—the location was chosen with this end in view. In two of the locations we were able to use a team and scraper for doing most of the excavating. If the soil is loose and sandy, one day's work with a good team and scraper will scoop out pretty nearly all of the earth that needs to come out of a 14x16 cellar. It may need a little trimming up at the corners, but not much. At the Morey yard, the one shown last month as a frontispiece, there were so many trees and roots, it being in the woods, that it was impossible to use a team; then, after we had got down through the roots, we struck some hardpan, a sort of gravel and clay glued together, that required the use of a pick o' loose'n it.

WALLS OF POSTS AND CHEAP LUMBER

After making the excavation, the next step was to set up some eight-foot, cedar fence posts, selecting nice, straight, round posts about eight inches in diameter at the large end. These were set in the ground about one foot deep and three feet apart, and each "pair" of posts connected by a 2x6, 14-ft scantling, being spiked on their sides level with their tops. A 16-ft, 2x6 scantling was then laid along on top of the row of posts at the sides, and spiked fast, thus forming a plate for the support of the rafters.

A hatchway was built at the end of the cellar opening out upon the hillside, and a door put in at both the outer and inner ends of the hatchway. Cull hemlock lumber was then nailed to the outsides of posts, thus forming a support for the earth in banking up the walls; most of the banking being done with a team and

scraper. Some of the same kind of lumber was nailed to the *under* side of the joists, and then this floor was covered with sawdust to the depth of perhaps 15 to 18 inches.

VENTILATION WITH NO REGULAR VENTILATOR

A hatchway, probably two feet square, was left for ventilation up through the floor and sawdust. The gable ends were

the combs to mould that were stored in the house, and we shall put in a ventilator this coming fall to carry the moisture up through the roof.

REASONS FOR THIS PARTICULAR CONSTRUCTION

These cellars were built in the cheapest manner possible, because we were yet undecided as to whether we should continue to keep the apiaries in exactly those



One Day's Work, Plowing, Scraping and Digging.

single-boarded, of cull lumber, and the roof was of the same kind of lumber laid two thicknesses. There was no ventilator placed in the roof, as we thought that the cracks in the gable ends and in the roof-boards would be sufficient, and, so far as I am able to judge, the ventilation was sufficient. At the Morey yard we placed our honey house right over the cellar, and allowed the moisture from the cellar to come up into it, just as we did with the other cellars. It was all right, so far as the bees were concerned, but it caused

localities. If we should decide to move them, it would not be very much work to pull off and out the lumber and posts that we had put into the cellars, while, if we decided to remain permanently at these locations, we could simply board up on the *inside* of the posts and fill the space between the outside and inside walls with cement, when we would have permanent walls at very little additional cost.

USING A CELLAR FOR AN EXTRACTING-ROOM

These cellars cost us about \$50.00 each, and we expect to build another one

this fall, and don't think of any changes that will be made. As mentioned last month, we used one of them as an extracting room, and the most serious objection is that the bees gather about the door, when we are extracting after the close of the season. We could use a glass door instead of one of wire cloth, only it would shut off the ventilation. The bees gather about the door, and rush in when

put in as soon as the cellars were finished, yet the bees wintered perfectly. I mention this, as I have seen cautions about attempting to winter bees in new cellars the idea being that they ought to have a chance to dry out. It is possible that there might be something in this with a stiff, damp, clay soil, but there is nothing in it with a dry sandy soil.

Since the foregoing was put in type,



Putting up the Frame and Boarding up the Sides.

it is opened. We made a big smudge and set it in the doorway, and it enabled us to work with very few bees getting in, but when the wind blew towards the cellar we had to give it up. Then we took the honey off after the bees had stopped flying at night, and stacked it up in the cellar; then there was so little going in and out that we managed it.

WINTERING BEES IN A NEWLY-BUILT CELLAR

These cellars were built late in the season, October and November, and the bees

Mr. O. H. Townsend, of Otsego, Michigan, has written me a letter asking some questions. Among other things he wishes to know if a cellar in a loose sandy soil might not be all right without any special ventilation. It might, possibly, so far as purity of the atmosphere is concerned, but with 150 or 200 colonies in a 14x16 ft. cellar, there must be some provision for the heat to pass off. Even with the upper ventilator open, we found it necessary to keep open the inside door of the hatchway.

FLINT, Mich., Aug. 25, 1907.

Constant Watchfulness Better Than Wholesale Supersedure.

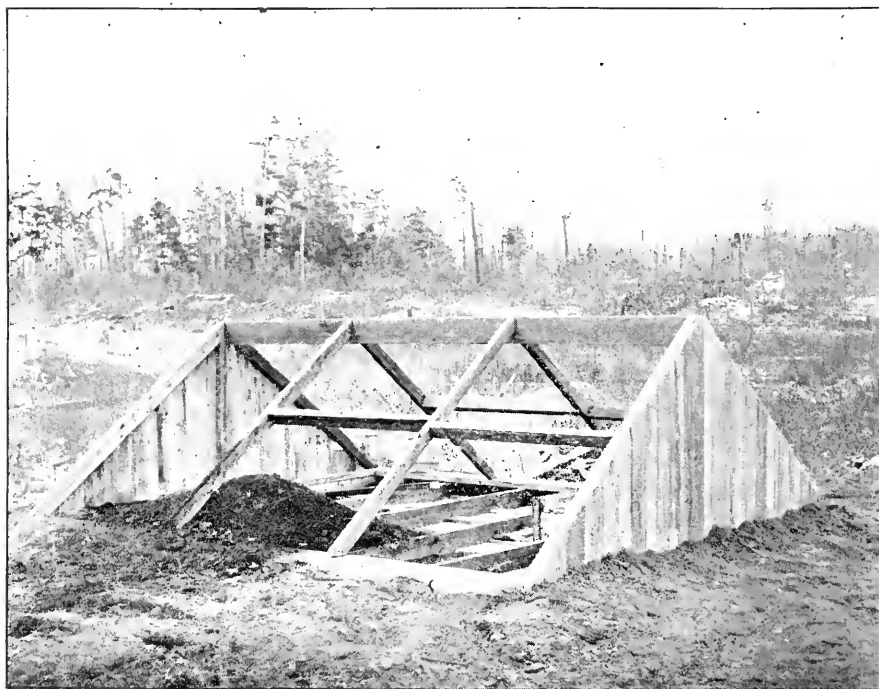
JAMES McNEIL.

SHALL we leave the supersedure of queens entirely to the bees; or shall we supersede after a plan of our own?

Doolittle, whose authority I greatly respect, says that the bees will attend to this matter more wisely than we can.

supersede the old queens, but hatched too late in the season to become fertilized.

It is evident that it would not be wise to leave the matter entirely to the bees; and yet, I doubt if it would be wise, considering the time, labor and expense in-



Covering the Floor with Sawdust Before Putting on the Roof.

Perhaps, on the whole, they will, but they often show mighty poor *judgment* in the matter, as is evidenced by the run down colonies because of worn out queens, which we find at all seasons of the year; and the drone layers which we find in the early spring, being either worn out queens or virgin queens, probably intended to

involved, to adopt a *wholesale* plan of supersedure after the queens have reached a certain age. Many excellent queens would be sacrificed by this plan.

The bee-master should be the master of the situation, so far as he can, by keeping himself informed regarding the condition of each colony, and marking for su-

persedure, at his earliest convenience, the queens of every colony that shows signs of failing.

During the building up period, previous to the main honey flow, the bee-keeper has an excellent opportunity to note the conditions of his queens. Then, when he takes off his early honey, he should be on the look out constantly for run down colonies. If colonies which he would naturally expect to be strong in bees are not, they should be marked, for examination, and when the harvest is over he will have abundance of time to go through them,

and make such changes as he finds necessary. A similar examination may be made later in the season when his fall crop is taken.

By this constant *watchout* for failing queens, and by adopting some system of supplying the deficiency, either by purchase or raising his own queens, it occurs to me that the matter of requeening can be attended to with greater economy, if not more effectively, than by wholesale supersedure at stated intervals.

HUDSON, N. Y., Aug. 21, 1907.



Helpful Hints in Extensive Bee-Keeping.

E. D. TOWNSEND.

In publishing a series of articles, like these written by Mr. Townsend, it is well-nigh impossible to have each item published at a seasonable time. The article that will appear in this issue and the next, wherein he tells exactly how he managed the Kalkaska yard, 105 miles from home, for both comb and extracted honey, is really the best thing that he has written, and I wish it might have been given last March and April. Will readers please try and store it up in their minds for the next year.—EDITOR.

WORKING THE KALKASKA COUNTY YARD 105
MILES FROM HOME.

After taking our bees from the clamps here at Remus, (this was done the last week of March) and papering them, as I have previously described, I started, about April first, for the Kalkaska Co., yard, 105 miles north, by rail. This yard is located on a branch of the Pere Marquette railroad, four miles north west of Kalkaska. This is a very hilly, broken country, a location where it will be a good many years before it will be cleared up and used for farming purposes, if ever. This tract of country was once a beautiful forest of maple, beech and elm, but the woodman's ax has slaughtered it, or about three-fourths of it. While it is heart-rending to see these noble forests disappearing, they are nothing, from a bee-

keeper's view-point, only as the maple and elm produce pollen and honey to stimulate early spring breeding.

The main thing that interests bee-keepers is the wild red-raspberry that comes up on these cuttings. Two or three years after this cutting, the berries come to maturity and are ready for the busy bee. This wild red-raspberry is a very sure yielder of a beautiful white honey, that takes an expert to distinguish from clover.

RASPBERRY HONEY IS WHITE IN NORTHERN
MICHIGAN.

I copy from the American Bee Journal, under date of Oct. 25th, 1906. Mr. Morley Pettit says in Canadian Beedom: "J. L. Byer reports, in the Canadian Bee Journal, extracting 1700 pounds of raspberry honey from one of his yards, and says that although amber in color the flavor is beautiful. This reminds me of a little joke we had at the Michigan State Convention last winter, when E. D. Townsend was showing a sample of extracted honey to some of the members. All who

did not know—and some of them acknowledged experts—pronounced it good *white* clover honey, until Mr. Townsend informed us it was raspberry honey."

This same sample referred to was gathered at this yard we are now talking about, and it is a fair sample of all the honey gathered in the northern part of Michigan, where the soil is a light sandy loam. There is an impression among some that raspberry honey is of an amber color; this is not so, at least not as it applies to the wild red-raspberry grown on the sandy loam of Northern Michigan.

Years ago, when the country was new in Clinton and Gratiot counties, on that rich clay soil, the wild red-raspberry honey was of a amber color, although the flavor was very good. That was long ago, and this part of the State is now all cleared and made into farms, and there is no raspberry honey produced in Michigan today that isn't white.

DON'T SPEND TIME IN THE FALL HUNTING FOR QUEENLESS COLONIES.

It was the first week of April, 1906, when I arrived at this yard and began taking the bees from the clamps. There were 198 colonies the fall previous; and when we took them out there was the usual quota of queenless colonies; six, I think, that were dead. These six, with several other queenless colonies, had we looked them over the previous fall, would not have been put into winter quarters at all. But this is our practice; rather than go to the trouble of looking through the yard for queenless colonies, we put them *all* into winter quarters thinking this is the most profitable way.

When the honey season opened in June, we had 168 colonies with which to commence the season. This is a shrinkage of about 15 per cent; all normal colonies wintering in fine shape; this shrinkage being wholly on account of queenless colonies. This is the largest per cent. of loss we ever had, that we could attribute wholly to queenless colonies. This we think was caused to a considerable ex-

tent, by there not being any land marks in this yard, so the returning queens in the old colonies that swarmed, missed their location and entered the wrong hives.

After papering these colonies, I started for home, being at this yard six days, including two days I spent at the Northern Michigan Convention.

May 9th, my oldest son, Delbert, and myself arrived at the yard; this being my second trip, and Delbert will stay all through the season, getting home in time to commence school Sept. 1st. Previous to going, we had shipped all the needed supplies for this yard, and they were there when we arrived. This shipment consisted of our sections and foundation, also 50 additional upper stories and the necessary 400 frames and foundation. These bodies had to be nailed and painted, frames nailed and wired, then full sheets of foundation put in. Then, after cleaning the supers, fence-separators and slats, we were ready to commence setting up sections and putting in foundation; yes, and there was the item of 500 comb honey super frames that we nailed and wired, and put foundation in, in connection with the above work. It is sufficient to say, twelve busy days were consumed before I left for home May 21st; then there was a plenty left for Delbert to do, inasmuch as the honey season was (we thought) only three weeks off.

PRODUCING BOTH COMB AND EXTRACTED HONEY IN THE SAME APIARY AND SAME HIVE.

This yard consists of 84 colonies in 10-frame Langstroth hives that were worked for comb and extracted honey. Aside from some one being in the yard all the time, this extracted portion was worked the same as all our other yards were worked for extracted honey.

The two kinds of hives wintered about the same; if there was any difference 'twas in favor of the extracted portion; these colonies not swarming to amount to much the previous season, their brood-nests might have been in a little better

shape when they went into winter quarters.

Our comb honey hives are of the Heddon style, only they have ten frames instead of eight, as in the regular Heddon. The bodies and supers are the same, and are the regular, deep, ten-frame supers, shortened up to $16\frac{1}{8}$ inches long, by $14\frac{1}{4}$ inches wide and $5\frac{3}{4}$ deep, inside measure, with flat tins nailed on the bottom of the ends, the tins projecting in $\frac{1}{4}$ inch, for the frames or pattern slats to rest on. The brood frames are 16 inches long, $5\frac{1}{2}$ deep, outside, and are closed end with $1\frac{3}{8}$ spacing. As the body is $5\frac{3}{4}$ inches deep, this leaves the regular $\frac{1}{4}$ inch bee space at the top. To make it into a super, we use six slats $16 \times 1\frac{3}{8} \times 3\frac{3}{8}$ inches. These are for the twenty-four, $4 \times 5 \times 1\frac{3}{8}$ plain section to rest on. Seven fence separators are used, and on each side, next the side of the super, is a frame of new comb, (not bred in) the same as the brood frames, with an extra end-bar nailed in the middle. This middle bar is for the purpose of pressing the sections together in the center, and two, or three, super springs can be used, at the option of the bee-keeper. This is our comb and extracted honey super, the extracted honey coming from these two, outside combs.

ADVANTAGES OF THIS SYSTEM.

There are several advantages in this combination super: the most important is the stimulus these two combs give the colony. The fact is, the bees enter the super and work just as readily as in extracting combs. No matter how high you tier up, there is a continuous comb clear up both sides of the super. There is really no breaking of the cluster, when raising up one super and placing another under it, as the bees form a cluster clear down along these outside combs. With the Barber plan of giving a full set of shallow combs to get the bees started, they start all right, but the trouble comes when we lift up this super of combs and place our empty super under. The cluster is then broken, and if the bees are not in a comb building mood, they sulk, and

many times swarm, when the super of combs is full. These full supers of combs are just the thing to give at the close of the season, instead of a late super of sections, that would be likely to get only partly full.

A super, to work to the best advantage, ought to be of ten-frame width; this gives room for 24 sections in a super, and leaves room for the two combs. Some one has said that this super produced extracted honey at the cost of comb. To this I would say, the only time the extracted costs the same as comb, is when we are getting our foundation drawn out, the first time used. Later, after the combs are drawn out, any one trying this system will soon be convinced, when he sees how freely the bees work in these supers, *right from the start*, that there will be no sulking, as we used to have, when we depended on bait sections to start the bees above. Before we used extracting combs in our supers, we used to put our bait sections in the corners of the super. The idea was to get the bees started *first* in that part of the super they usually work *last*. The trouble with this system was, each season we would try to get all the sections finished, if possible, so we had baits for only a few, using four to the super. As far as they went, they did very well. Having had these experiences, you can see how natural it would be for me to adopt the combs instead, when my attention was called to them. A great advantage, perhaps I ought to say *the great advantage*, this super has over the bait comb plan is, we start the bees at work in that part of the super that usually is the last to be worked. If we can accomplish this, our battle is won, as far as getting the bees to work in the super is concerned; but I have left the best for the last. It is this: Our being able to get the bees to work in the outside *first* induces them to take possession of the *whole* super of sections at *once*; and in thus getting the bees to work every section in a super at the *same time*, lies much of the secret of the production of

fancy comb honey; and that is just what this combination does. If the foundation is put in properly, so it hangs true and even in the center of the section as it should, and the honey flow is fair, every section produced in this super will be fancy, unless it may be a very few at the close of the season, which will have to go into the number one grade.

It was along this line that we produced the exhibition honey that won the first prize at the Michigan State Convention a year ago; the only time ever on exhibition. Another point, we have not produced, and sold, during the last two years, to exceed two per cent. of number two honey, and 75 per cent. would grade fancy.

By using a few sets of these shallow supers full of comb with which to finish up the season, then feeding a few supers at the last, to get them finished, we have not had over two supers of what would be called bait sections, in two years. This not having any old, dirty, propolised sections left over, and being able to commence the season each year with new clean sections, is enough, in itself, to cause any one desiring to produce a fine article of comb honey, to make the change.

May 20th, before going home, as the weather conditions were favorable, the paper was removed from the hives and upper stories given to all the medium and strong colonies. This proved to be just 30 days before the season opened. Much of the time during the first 19 days of June the weather was cold and disagreeable. Had our bees been confined to their one story hives during these 30 days previous to the honey flow, many of them would have swarmed at the opening of the honey season, but, as it was, of the 84 colonies in this yard, worked for extracted honey, only five or six swarmed; and the queen was confined to the lower story, with queen-excluders.

The 84 colonies that were worked for comb honey were treated the same as the extracted colonies, before the honey season opened. We placed one section of a brood-nest *under* all the strongest col-

onies: that is, this was done as long as these bodies lasted, for they were the hives where the bees had died the previous winter. There were enough for about half of them, counting some that were taken from a few that were so light as to need only one section of their hive. What others there were that needed more room before the season, were given a shallow extracting set of combs on top, first putting on a queen-excluder, as we did not want brood reared in our nice white combs. At the first signs of the honey season opening, these extra half stories were removed and supers of sections given. This was June 19th, the date of my third visit to this yard. As the second stories were already on the extracted honey colonies, there was nothing to do with them. After removing these extra stories from the comb honey colonies, and getting them into their regular size hive, and uniting all the little, one-section colonies, making all strong, we gave each a super, arranged as I have explained heretofore.

TIERING UP BY PUTTING SUPERS ON TOP.

This being done, I was ready to start for home; and my son Delbert, who was to stay here clear through the season, was instructed to give an additional super *on top*, as soon as these first given were one-half to two-thirds full. When the bees were nicely started in this top super, when it was, say, one-fourth full, it would indicate that the first-given super was about full. The combs might not be capped, but the foundation would be nearly drawn out, and the time had come to change places with the supers, by placing the full one *on top*. Then another empty super is to be placed on top again; and then when this third super is a fourth full, or so, lift up the two lower supers, and place this last, or light super next the hive. It will not be long now before some of this first will be capped and ready to come off.

From now on there will be work, and lots of it, for as soon as these supers are $\frac{3}{4}$ capped, or a little more, we put a bee-

escape under, and remove and clean and crate, ready for the market. The combs that are not sealed, ready to crate, are put back into a super, and when full it is given to some colony that needs room, to be finished. This process of giving supers, as I have explained, is kept up until the season is two-thirds over, at which time my fourth visit is planned.

REMUS, Mich., Jan. 21, 1907.

(To be continued.)

[It is seldom I have occasion to criticise anything written by Mr. Townsend, and it is possible that, with his experience, I might agree with him, but there are one or two points in his method of tiering up and removing finished sections, upon which I would be glad to know his reasons.

Why put the second super on top, leave it until it is one-fourth completed, then place it next to the brood nest? Why not place it next to the brood nest in the first place? The same might be asked in regard to the third super, why put it on top and remove it to the bottom? I suspect the answer will be that this method prevents any *break* between the brood

nest and the super. But I thought the extracting combs at the side prevented this break? Possibly this isn't the reason. Perhaps the object is to push along to completion as rapidly as possible, the first super of sections. This changing about of supers is a lot of work in a large apiary, and I feel sure that so practical a man as Mr. Townsend would not follow the plan unless he found it profitable. Bro. Townsend, give us the reason.

Then there is the removal of a super when only three-fourths of the sections are completed. Seems to me, when there are extracting combs at the side, and the sections all begun at the same time, as Bro. Townsend tells us so enthusiastically, that there would be so little difference in the sections that not much time would be gained in removing a super when three-fourths completed. The combs certainly would not have time to become travel-stained. If the season were nearing the close, and there was anxiety to secure the rapid capping of all unsealed sections, I can see a reason for thus wishing to crowd the bees upon as few combs as possible, but in the fore part of the season—friend Townsend, why do you do it?—EDITOR.]



Some Criticisms of the National and Its Officers.

ARTHUR C. MILLFR.

The best critics are they,
Who, with what they gainsay,
Offer another and better way.

DEAR Mr. Hutchinson:—In the Aug. Review you say that "The Am. Bee-Keeper embraces every opportunity, and sometimes manufactures one, for attacking the National Bee-Keepers' Association. Because the publishers of the Bee-Keeper are furnishing goods at wholesale

to a company of Eastern bee-keepers is no excuse for this journal to be continually belittling and misrepresenting the only National organization in this country."

To the foregoing I beg leave to make reply. First the A. B. K. never "manufactures" opportunities for attacking the National, nor do I consider criticism of the doings of its officers or the shortcom-

ings of the Association as it has been conducted for some time, as in any sense "attacks." The Association is ostensibly for the protection and benefit of its members: from them it collects annually a sum of money that it may render those services and benefits. I am a member of the society, and have as such paid in many dollars, but when I attempt to get any help in the form of the circular material, I am handed out a few sloppy circulars. The only possible redress that I have is to publish the fact. The conditions which I wished to meet were these: The bee-keeping industry of Rhode Island is small; few persons have over a score of colonies; and I have not found half a dozen persons who are seriously concerned as to bee diseases or laws to suppress them. But the bee-keepers of the States of Connecticut and Massachusetts are interested in having the diseases suppressed here as well as in their own States. Under the circumstances work must be done through the fruit growers, Granges, Horticultural societies, etc. and that sort of work called for literature as well as letters, speeches and personal work. To get such literature I wrote of the conditions to the General Manager of the National, and in return received six circulars which, while containing some pertinent matter, contained much that was not relevant, and the whole appearance of the circulars was more suggestive of a cheap advertising circular than of educational matter. A letter from Mr. France, the General Manager, said that was all he had. I have had no evidence of his attempting to produce any more of the same circulars or any others. But I have received evidence that he resents criticism, for a circular sent out by him makes much the same charge that you have. The circular last referred to is mostly composed of advertisements of goods wanted or for sale by a score or more individual members, and includes at least one advertisement after which is the word "sold." If sold why pay for printing it? This circular probably cost the Association ap-

proximately \$25 for printing and postage to benefit about 25 members, but the manager apparently does not think the interests of the bee-keeping industry of Mass., R. I. and Conn., worth further thought.

The foregoing I cite in detail because I was directly concerned and know the details. It will suffice for the present.

As to the second part of your comment. You say:—"Because the publishers of the Bee-Keeper are furnishing goods at wholesale to a company of Eastern bee-keepers is no excuse etc." It is no excuse, nor do I see any connection between the publishers' business policy and the management of the National. It seems to me that in your comment you show grievous displeasure at the wholesale price matter and that it is to discredit that that you are most anxious. If the National is what it pretends to be, and if the Review really means what it has said in the past, then both should welcome wholesale prices where ever they may be had. As to a "company of Eastern bee-keepers" that is entirely a figment of your imagination. No such company exists. The prices are I believe still open to any society of bee-keepers who care to accept them, either Western or Eastern. The grapes need not look sour to you, they are within your reach; or if freight charges interfere I would respectfully suggest that you appeal to the National Association, which can, doubtless, with its larger membership and wider field, secure somewhere as much or more reduction as the associated societies of the State of New York secured for all bee-keepers' societies.

In closing permit me to say that neither Mr. Hill nor myself are in any way, shape or manner guided in our conduct of the American Bee-Keeper by the commercial policy of the owners of the paper. Also let me say that we are both members of the National Association, and I believe are quite as anxious as you are to see it prosper and become a real benefit to the bee-keepers of the land. Washing dirty linen in public is not the pleasantest way

of cleaning it but sometimes it is the only way to get improved laundry facilities.

PROVIDENCE, R. I. Sept. 1, 1907.

[Dear Friend Miller— Criticisms of the National and its officers are all right if proffered in the right spirit. You say that the editors of the Bee-Keeper are anxious to see the National prosper and become a real benefit to the bee-keepers of the land. This may be true, but in the columns of the Bee-Keeper I find only fault finding and sarcastic flings— no spirit of friendliness nor helpfulness.

You say Mr. France "resents criticism." He *ought* to resent such criticism as appears in the Bee-Keeper regarding the National. Every member with a sense of justice in his heart will resent it.

The circulars sent out by Manager France may not be above criticism, and if Mr. Miller, or any one else, will take the trouble to write and tell him in what way they can be improved, do this in a friendly helpful spirit, there will be no resentment.

I have worked side by side with Mr. France in Wisconsin, New York and Michigan; I have roomed with him many a time at conventions; I have visited him at his home; and I know him as no other

man in the work— knows him, and a more whole-souled, useful, tireless worker for the good of bee-keepers. I never met; and he needs cheering words, encouragement and *helpful* criticism— not incessant fault finding.

Having said this, I can't refrain from saying that the editors of the American Bee-Keeper are both good men, excellent bee-keepers, splendid writers, and warm friends of mine; in fact, each of them has performed an act that might almost be said to have sealed our friendship. The private letters they write me are delightful; they are kind and considerate, and full of sympathy; and I am sometimes led to wonder if the course taken by the Bee-Keeper regarding the National is not prompted by something that does not appear upon the surface.

No, friend Miller, you seriously misunderstand me if you think I am opposed to the success of co-operation in the East. I am pleased over the success, and have said so several times, but I am saddened, yes and "maddened," at the *senselessness* of the attack upon the National that was opened at the same time, and by the men, or some of them, who helped to make co-operation a success. Because co-operation was a success, why attack the National and its officers?—EDITOR.]



Natural or Artificial Supersedure of Queens, Which ?

R. L. TAYLOR

THE most important item of expense in the production of honey is labor, and every year it is challenging our consideration with increased force. I often find myself excited with surprise at the persistence of certain operations of the apiary that, perhaps in the case of the novice, or when labor was easily obtained and cost

little, were well enough, but are now costly as well as useless. Take the clipping of queens' wings, an operation still practiced by a vast number of apiarists, involving much labor and to what end? I practiced this invention of the evil one for several years under the advice of those high in apiarian councils, and now, after

having foresworn it for some years. I unhesitatingly pronounce clipped queens in swarming time to be an unmitigated nuisance but that is another subject.

Does artificial supersedure or requeening come in the category of useless and costly operations? I proceed on the understanding that artificial supersedure or requeening is that method of changing the queen of a colony that involves the purchase or the rearing of a new queen, the finding and the removal of the old one, and the introduction of the new one, and natural supersedure any one that does not require these steps.

The correct answer to the question contained in my title is contained in the answer to another, to wit: Which pays the better, financially; for the matter must be considered with reference not to those keeping a few bees from sentimental or experimental reasons, but to those keeping them for the direct net cash results.

It must be admitted that either method costs. Let the matter be considered on the basis of one hundred colonies. In artificial supersedure the first item of expense is the purchase or production of one hundred queens, which can hardly be estimated at less than \$50. After that comes the finding and removal of the queens from crowded hives for to be of any marked advantage it must be done before the colonies become depleted, that is, if it is to be done generally and systematically, unless, indeed, it be done in the early spring, in which case the cost of queens would be doubled. I have never been able to find any pleasure in searching for queens in populous colonies; some bee-keepers may possibly enjoy it, but, to me, it is, when it becomes necessary, an indefinable burden a burden over and above the labor required. The overflowing bees, robber bees, perhaps, and either slow work or else the crushing of bees are all but intolerable. Of course, there are ways by which these disagreeable features may be to some extent avoided, but, at best, if to be done when colonies are populous, an offer of \$25 for per-

forming the job would not be a great temptation.

Then there are 100 queens to be introduced; and after all is done, what has been gained? Colonies with queens that possibly, but by no means certainly, may average a little better, and that is all. Some of these queens, as with any introduced queens, will disappear after beginning to lay; occasionally one will not be accepted at all. It is quite probable that two or three of the colonies, unless looked after closely, may go into winter quarters queenless; and if the bees have wintered badly the queens will keep perishing in the spring just as the rejected ones would have done in the same circumstances. Queens in colonies that have wintered well, even though such colonies have not been requeened, do not disappear by the half dozen in the spring. In an apiary of from 150 to 200 colonies I seldom find more than two or three queenless colonies, in fact, as many colonyless queens as queenless colonies.

I will not deny that one may keep his apiary a little more uniform in strength by the requeening of an occasional colony, but I cannot escape the conviction that his care and time might be more profitably employed in a financial point of view. If the gratification of a *sentiment* is of more value in his estimation, of more value than a thicker wallet, well and good.

Who dare affirm that, not better but as good queens can be supplied colonies by any interference of the hand of man as by natural supersedure, where all is accomplished without any excitement or disturbance? The bees, it must be admitted, attend to this very well, as was to be expected, for it is *nature*. There will be a few failures, no doubt, but if my own experience is a safe guide, five per cent. would easily cover the whole of them. How easy, then, becomes the solution of the whole matter; simply keep, with almost no trouble or expense, five per cent. more colonies.

LAPER, Mich., Aug. 22, 1907.

Editorial

Buckwheat did not furnish us any surplus this year.

The National convention will be held this year in Harrisburg, Pennsylvania, October 30, and 31. Excursion rates on account of Jamestown Exposition.

Superseding Queens when they reach a certain age is a subject that has brought out quite a lot of correspondence more will be given next month.

Messrs. Facey and Atwater each sent a good article for this issue of the Review, but they will be seasonable next month, and other matters were pressing, so they were left over.

Twenty Cents a pound, in a jobbing way to grocers, is where the price of fancy comb honey will probably go before the season is over; so says Mr. A. G. Woodman of Grand Rapids, Michigan; and he has lots of experience in both buying and selling.

Screw-Caps on cans are sometimes hard to turn, and there are tongs for this purpose. If you have no tongs, tie a stout string to the end of a stout stick, wind the string once around the cap, pull on the end of the string to draw it up tight, then use the stick as a lever to turn the cap.

A late honey season is usually a short one, says E. D. Townsend, in *Gleanings*, and I agree with him. When the warm weather finally comes, and nature gets things started, it seems as though she, realizing the need for haste, hustles things through with more than the usual speed.

Sixty Years will soon rest upon my head, and yet, I never felt younger, stronger, brighter, more enthusiastic and ready for some new enterprise or "good time" than I do at present; and I hope the Review will inspire similar feelings in its readers.

J. P. Moore, the veteran queen breeder of Kentucky, writes me that he now has 560 nuclei, and the average output of queens is 1100 per month. In July he sold 1165, which brought him \$862.03. Another year he will have between 700 and 800 nuclei.

Every beginner in bee-keeping should not now jump into queen rearing with the idea that there is a fortune in the business. Mr. Moore and his locality are especially adapted to this business, he has a strain of bees that are without a superior in this country, and he has worked at the business at least a quarter of a century—he is now reaping the fruits of many years of toil and stick-a-to-ative-ness.

Labels for honey are the subject of much inquiry since the National pure food laws went into effect. In the first place, let it be said that the labeling of honey is not compulsory—you can label it or not, just as you please, but it must be labeled truthfully if it is labeled. Another thing, so long as your honey is sold in your own State the National law has no bearing whatever—only when it is shipped from one State to another. A man who buys honey and puts it up for inter-state trade, can do as he likes about putting on a label; but, if a label is used, it must state that the honey is "put up," or "bottled," or "distributed," (not produced) by so and so.

Fall Feeding.

The sooner fall feeding is attended to now, the better. The bees will now have time to ripen and cap over the stores given them, and get everything in apple-pie order for winter. The position and character of the stores have much to do with the successful winter of the bees.

Then there is another point: If the bees have not gathered any stores since early in the season, there ought to be some stimulative feeding to encourage breeding, and thus have some young bees for winter. I had a letter today from a man in Canada, saying that his bees had gathered no stores since fruit bloom, and the bees had run down in numbers until he was fearful that he could not winter them. Last year, here at Flint, my bees gathered no honey after the close of the white clover honey harvest, hence there was not very much breeding late in the season. There were plenty of bees in the hives when put into the cellar, but many of the bees were old, and when spring came many of the bees (not colonies) were dead from old age. The bees were all clean, dry and healthy, but I was surprised to see how few there were in many of the hives. This year I am giving them an occasionally a feed this month, and probably will continue it a part of next month. No amount of fussing next spring will atone for neglecting the bees this fall.

"Music Hath Charms."

A few days ago I heard a professional violinist play a few solos in the back room of a barber shop. There was no one present except a few chums of earlier days, and he was playing with all that abandon, and "just for the love of it," style that usually characterizes playing under such circumstances. But how he did play! How the tones rose and fell, and died away to a whisper. Then they set my pulses dancing until I could scarcely sit still. Then, without being able to say why, I found my eyes growing moist,

and I was biting my lips to keep back actual sobs.

When it was all over I found myself saying "Oh, if I could only play like that!" Then the thought came to me, suppose this musician should go with me to an apiary, see the rows of white hives dotting the greensward, listen to the myriads of bees on the wing, inhale the fragrance that arises from an apiary in the clover-time, see the building of the dainty combs, the piling up of the glass-fronted cases of honey, and all the other beauties of modern bee culture, he, too, might turn away with a sigh, and say "What wouldn't I give if I could manage a business like this!"

We are too much given to seeing and magnifying the beauties of some other business than our own.

The Bee Journals of this country are now fewer in number than they have been in many years, but it is likely that more will soon be started. If everybody knew as much about it as do those already in the business, no more would be started. The truth is that the field is already more than covered. I don't say that it would not be possible to make a success of another bee journal, but the same amount of time, talents and capital put into straight honey production would bring much larger returns. Why do I publish the Review? Because it has now become a profitable business, but to *make* it such has cost years of hard work and thousands of dollars. As I have said before, in these columns, if I should now sell the Review for \$5,000, I would not, with this capital, and my years of experience, think of starting another bee journal. I would turn my whole attention to honey production. Having built up the Review to what it is, I can now continue it at a good profit, but, having "been through the mill," I know there are many things that are easier of accomplishment and more profitable than that of making a success of starting a bee journal. Yes, and most of the ventures in this line are not suc-

cesses; hence it is always with a sort of sorrowful sympathy that I read "Vol. 1, No. 1."

A Special Request.

Several times I have asked favors of my subscribers, and they have never failed me, and I now have one to ask in which it seems they ought to be equally interested with myself. It is a simple request, and one that, it seems to me, can be easily granted. I wish each reader to write and tell me what particular subject he would like discussed in the Review, and, if possible, give the name of the bee-keeper in whose views he is particularly interested. For instance, just write on a postal something as follows: "I would like to have Mr. J. E. Crane tell me the most practical way to improve my stock—Wm. Streeter." Or: "Get Mr. F. Greiner to tell us how co-operation is working out in New York—Orville Skinner." Or: "What is the best use that can be made of the honey that does not drain out of cap-pings?—John Williams."

The foregoing are given simply as samples. Now, *please*, dear reader, don't neglect this, nor put it off, thinking: "Oh, the others will write; it won't be necessary for me." For once, put on your thinking cap, and decide just *one* thing that you don't know about bee-keeping but would like to know. What is the one question that you would like answered, the one problem you wish solved, and, if there is any particular bee-keeper in whose views you are particularly interested, let me know his name.

The editor of a bee journal does not always know in what particular subjects his readers are most interested. In many instances it would be an easy matter to secure the information, if he only knew what was wanted. If my subscribers will only take hold of this matter, it will do much to make the Review more helpful than ever. Once more let me urge you not to neglect this. Write this very day --do it right *now*.

Strive to Stand at the Head.

How we do enjoy seeing a man do a thing even just a little better than the ordinary, and when it is done *much* better, our admiration is boundless. The other evening, in company with my wife and daughter, I visited the Bijou theater. As a rule, I care very little for seeing clog dancing, but there were two men at this entertainment whose performances in this line I thoroughly enjoyed. It did not seem possible to me that the human body could be made to perform such motions, and I will admit that my admiration was great. Then I asked myself *why* I had enjoyed this dancing, and I unhesitatingly answered that it was because it was so much better than I had ever before seen. Then I said that this little thing should be an object lesson to me; that I would begin right then and there, and put forth my best endeavors to advance in my chosen profession, to stand at the head, and help my readers to do the same.

Dear reader, where do you stand? If not at the head, why not, and still further, why not resolve that you *will* stand there, and then carry out your resolve? Are you barely making a living with a few colonies? Why not arouse yourself, and branch out, and keep more bees, and learn to keep them in such a way as to make some money? Three years ago I did not own a bee, now my brother and myself are managing over 500 colonies, owning most of them, and in the past two very poor seasons have produced about 40,000 pounds of honey. Perhaps this is nothing to boast of. Others might have done better; but here is the point; others fully as bright as myself have *made no advancement*. The starting point is to resolve to advance, and it is the most important of all. Just decide that you will stand at the head, that you will "dance better than any one else," that your locality shall be the best, that your stock shall be unexcelled, that your hives and fixtures shall be of the best, and your

methods and system well adapted to your needs. Read all of the bee books and journals, visit successful bee-keepers, attend conventions, study, think, arouse yourself and stand at the head.

.....

Filling 60-pound Cans With Honey.

Mr. F. H. Cyrenius, of New York, illustrates and describes in *Gleanings* a device for filling 60-pound cans with honey. By the way, Mr. France told me of this same plan two or three years ago, and I gave it in the *Review* at the time.

The plan is to take the bottom out of a 60-pound can, or else have a can made of about the same capacity as a 60-pound can, then have a funnel-shaped tube fitted on over the nozzle and soldered fast. This makes a sort of measure in which to run the honey before it is run into the regular 60-pound can; that is, this open-bottomed can is first filled up to the 60-pound mark, then the honey is allowed to run out of the nozzle into a regular 60-pound can.

To stop up this nozzle while the measuring can is being filled, a long plug is used, one several inches longer than the can is deep. The lower end fits into the opening in the bottom of the can, then, when everything is all in place, this plug is pulled out, and away goes the honey into the lower can.

I have never used such an arrangement, but it seems to me that there are one or two objections. First, we have to wait until the open-bottomed can has been filled with honey. Then we have to wait until the honey has run out into the other can. If I were going to use such an arrangement I should have two or three measuring cans, then one or two of them could be emptying themselves while I was filling another. Then there would remain only one objection that I can think of, and that is that honey is often so thick that it requires a long time for it to run off the sides of a vessel. Suppose we fill a can up to the 60-pound mark, and set it to running into another can. A lot of

thick honey will adhere to the sides and bottom of the can, unless we wait a long time for it to run out. Possibly by filling the can just a little above the 60-pound mark, thus taking into account the amount that will adhere to the sides of the can, we might come somewhere near getting it accurate without waiting for all of the honey to run out.

I would much rather run the honey directly into the cans, and then use an electrical alarm bell to give the warning when the can is nearly full. Have a battery and a door bell that can be bought for less than a dollar. Have one end of the wire wound around the back end of the scale beam, and the other end of the wire arranged just above the outer end of the beam. When the beam rises it touches the wire and completes the circuit, ringing the bell. Set the scales a pound or two short and warning will be given in time.

.....

Bee Journals are now offered at very low prices. One after another has lowered its price until, as one of them expresses it, they are "practically given away." Of course, the object of these low prices is to secure more subscribers. I doubt the profitableness of this cutting of prices in bee journalism. If all the journals were alike, like so many pounds of sugar, custom might be gained by the cutting of prices; but they are not alike; each has its friends and subscribers; those who prefer that style of journal; and the price, within reasonable bounds, does not cut any great figure. When a man finds that a journal is really helpful to him, that its value is ten times its cost, the matter of 25 or 50 cents, more or less, does not concern him greatly. If he doesn't care for the paper he isn't going to take it, let the price be what it may.

I prefer to work at the other end of the problem not how cheap, but how good.

Since the foregoing was in type there came to hand a letter from Mr. John M. Davis, of Spring Hill, Tenn., that puts both sides of the question so fairly that I

feel sure he will excuse me for making it public. It reads as follows:—

After reading carefully those very valuable articles in July Review I read your remarks regarding journals. Friend York deserves great success, and I hope his desires may be more than realized. Surely, any one owning only one colony of bees can afford to pay the price and save money by the expenditure.

Many years ago I saw that a friend needed a journal for beginners and offered to send him the American and take bees in payment, but he declined, saying he would not give me bees for a journal.

The next spring he told me that he had employed a carpenter to make him a lot of Langstroth hives. I asked him if he had used one of the hives I let him have as a pattern. He stated that the carpenter had made an improvement, and had made such and such changes. I told him that I would rather have the lumber in those hives standing down in some deep ravine with the bark on than to have the hives painted.

His eyes stretched at me; but he could not manipulate the hives when the bees had been in them a month, and he was one dollar wise at an expense of \$19.50.

This class may be reached by the American at the give-away price, and developed into men of judgment. I shall try and help friend York out by sending him a lot of such subscribers, and thus benefit our craft.

But this is not what I started to say: I wished to state that the July Review is worth several years' subscription price to the *specialist*. This is what we want, and the price *cuts no figure* with us. We expect to make money by adopting the best methods, practiced by the most successful specialists who handle large apiaries, and care but little for what the fellow does with half a dozen colonies. Your ship is headed right for this class, so keep her bow so directed.

All of our journals have their special work to do, and are doing it admirably.

This subject promises to extend itself into several chapters. After the foregoing was all nicely in type, along comes the American Bee Journal for September, when, lo and behold! Bro. York has jumped the price up to 50 cts. Only three months of experience have proved to him that such a journal as he is making can't be furnished for 25 cts; and very wisely, so it seems to me, he has doubled the

price in fact, he says that is the only thing he *can* do.

Guard Against Fires in Locating an Apiary in a New Country.

Last fall, when we located the apiary shown in last month's frontispiece, we knew we were running a risk from forest fires, and we intended, upon the first opportunity, to burn the brush and logs surrounding it. Other duties pressed, and a fire started by some careless hand did the work for us, and it was almost a miracle that the bees were saved.

Just at dusk, one evening in June, Elmer saw burnt leaves falling from the sky, and his suspicions were aroused. The next morning he and one of the boys drove over to the Morey yard. Half a mile this side of there he came upon the blackened trail left by the fire. With his heart in his mouth he drove on; nearer he came to the apiary; turn after turn in the road was made, and still the blackness of desolation. At last, not ten rods from the apiary, he came upon the fire, still eating its way towards the rows of white hives. How *good* they did look smiling in the sunshine.

Elmer sent the boy back home for bed clothes and provisions, and secured a man to help him, and set out to control the fire as it swept down towards the apiary. There is a brook only a few rods from the yard, and barrels and pails were procured, and water brought and stored in the yard. After the fire had burned as near to one side as it was considered safe, it was put on along that edge of the yard. Then it began to eat along down one side, and watch was kept that it did not get too near. In this way it burned its way clear around the yard, and only at one time was the danger so very great, and that was when a great mass of cedar and hemlock tops burned very near the yard, so near that some of the hives had to be moved back or they would have perished. For two or three minutes, when this mass of inflammable material first flashed up, Elmer almost dreamed

of being able to control it. The flames even reached and scorched the leaves on the tops of trees 75 feet high, standing right in the apiary. There was one supreme moment, when it seemed as though he must run away, or be burned up himself, then there came a puff of wind from the opposite direction, the flames began to die down, having spent their greatest fury, and he knew the yard was saved. That night the rain fell in torrents, and all of the fires were quenched.

Of course, there is now no danger from fires, as everything is now burned all around the yard, and nothing for the fire

to run in, but it was a close call. If Elmer had not noticed those falling burnt leaves, if his suspicions had not been aroused, if he had reached the yard a little later, if he had not had water handy, if he had not had enough help, if the wind had not changed just as it did—you see there are a lot of ifs—altogether too many.

Our two other apiaries are located in cleared fields where there is practically no danger from fire, and if an apiary is to be placed upon uncleared land, a spot ought to be first cleared off and the ground burned over.

EXTRACTED DEPARTMENT.

HOBBIES AND HAPPINESS.

The Man Who Works for the Love of it Gets the Most Happiness Out of Life.

The man who does work simply for the money that he can get for doing the work, certainly needs a hobby. Some are so fortunate as to be able to make a hobby of their regular work. Many bee-keepers belong to the latter class. If any "resorter," or pleasure seeker, has enjoyed his vacation this summer, as I have my work with the bees, he has certainly had a good time. These thoughts came to me as I was reading a short item that I found in the American Farmer. It reads as follows:

If you want to be happy, get a hobby. It makes little difference what it is, poultry fancying, fine cattle of any breed, horses of any style, a particular kind of flower, or even cat raising, so only that you love your occupation and find pleasure in its pursuit. The one-idea man, the specialist, is he who obtains from life the most enjoyment. Audubon following the wild turkey in Kentucky, sleeping in the woods so as to observe the habits of birds, watching their nest-building from day to

day, was a happier man than Rockefeller with his millions. John Burroughs in his cabin on the Hudson, listening to the woodpecker's tap and the squirrel's bark, finds an enjoyment more exquisite than falls to the lot of any king. Burbank, with his floral experimentations, his endless efforts to produce or train new fruits and vegetables, is always busy in a pleasurable occupation, and that is the nearest approach to happiness that is to be found on earth.

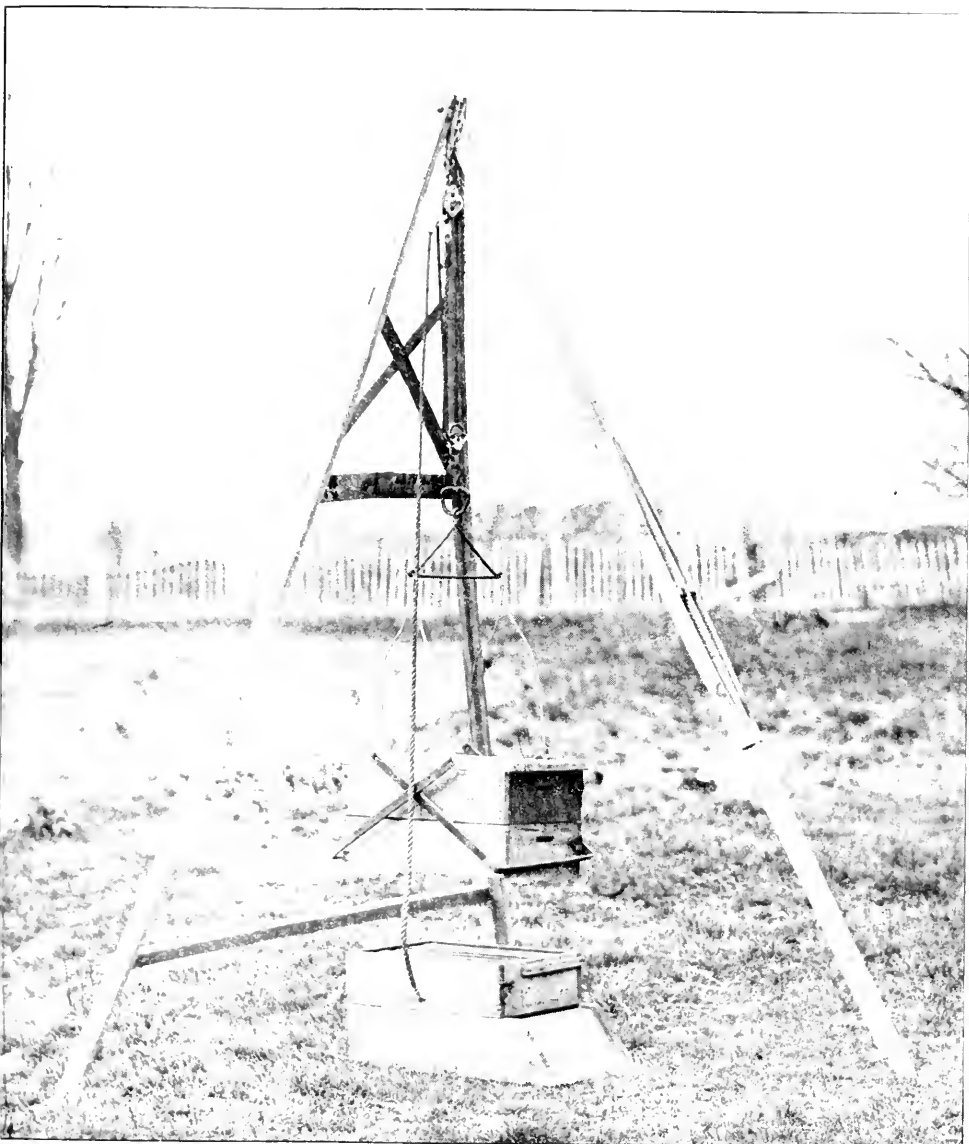
A HIVE-LIFTING DEVICE.

It May Excite Ridicule Now But It is a Sensible Device That is Bound to Come Into Use.

Last month I described what I was egotistical enough to call the Hutchinson system of extracted honey production—plenty of empty combs, the use of bee escapes and of artificial heat. There is just one thing more needed to make it perfect, and that is a hive-lifting device. It is bound to come sooner or later. I prefer to use a queen excluder and tier up the supers the same as in comb honey production, keeping the oldest, ripest honey at the top, where it is ready to be

removed with a bee escape at a moment's notice. This method of tying up calls for a hive-lifter, and I have fully decided that another year will find one in use at

each of our apiaries. So far, I have seen nor heard of any device that so appeals to my sense of the sensible in this line, as the one used by Mr. J. E. Hand, and illus-



J. E. HAND'S HIVE LIFTER.

It will be seen that a rope tackle is used in connection with a very simple clamp, made on the principle of ice-tongs. This can be instantly adjusted, and will not slip. By pulling with one hand on the rope, the heaviest hive can be easily raised and held in any position. An inward pull on the rope releases the lock so that the hive can be lowered.

trated and described in a late issue of *Gleanings*. Here is what Mr. Hand says:—

As we do not handle brood-frames, and as all our manipulations will be by hives, it is advisable to use some kind of hive-lifting device. Some are inclined to ridicule the idea of such an invention, and claim that it is more work to move a machine of this kind about the apiary than to handle the hives; however, in manipulating the sectional hives for swarm control some kind of hive-handling machine is a positive necessity, and we are using with much satisfaction a very simple affair that is both rapid and easy of operation; and at the same time is light and will adapt itself to uneven ground.

The illustration will help to make our description plain. The clamp is made like two pairs of ice-tongs, connected by a bar at each side. Blunt teeth on the inside prevent any slipping. The jaws open wide enough to drop down over the hive. A tightening of the rope will close the jaws across the ends of the hive, and a slight pull on the hoisting-rope will quickly raise the heaviest hive, and a self locking device on the rope will hold the hive in any position, when it can be instantly raised or lowered, or held in position by a quick jerk of the rope outward to lock it and inward to release it.

This device is also very handy in weighing hives when preparing them for winter, and also during the honey-flow to see how much gain our colonies are making. Simply hook on a pair of spring balance scales and we can weigh a hive very quickly and easily.

We would not think of doing without some kind of a hive-lifter; and the one here shown is both light and easy of operation, and can instantly be adjusted to any part of the hive or supers. A man can, with this device easily raise 600 lbs. and can with one hand easily raise the heaviest hive. We find that lifting hives and supers each day is hard work; and while some may be able to perform such labor, there are many others who are not, and it is to such as these (and this includes ourselves) that this invention will be of real value.

The tripod weighs only 13 lbs., and the clamp and pulleys 8 lbs., and the clamp can be unhooked when moving, so that it is necessary to lift only 13 lbs., which is but little more than the weight of the box that we have to carry about to set the supers on while manipulating the brood-chamber. As our hives are in groups

of four we find that we can manipulate hives and supers more rapidly, and very much easier, than to lift them by main strength. Indeed, the heaviest work in the apiary is by this invention actually reduced to mere child's play.

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 — — — — —
 YOUR LIFE-WORK.
 — — — — —

What Comes From the Spirit in Which It
is Done.

What a thrill of pleasure there is comes to a man when he finds his own unexpressed ideas written out sharply and clearly, hence you can easily imagine my feelings when reading the editorial in *Success* from which I copy the following:

It ought not to be necessary to ask a man if he likes his work. The radiance of his face should tell that. His very buoyancy and pride in his work, the spirit of his unbounded enthusiasm and zest, ought to show that. He ought to be so in love with his work that he would find his greatest delight in it; and this inward joy should light up his whole being.

A test of the quality of the individual is the spirit in which he does his work. If he goes to it grudgingly, like a slave under the lash; if he feels the drudgery in it, if his enthusiasm and love for it do not lift it out of commonness and make it a delight instead of a bore, he will never make a very great place for himself in the world.

The man who feels his life-yoke galling him, who does not understand why the bread-and-butter question could not have been solved by one great creative act, instead of every man's being obliged to wrench everything he gets from nature through hard work, the man who does not see a great beneficent design and a superb necessity in the principle that every one should earn his own living—has gotten a wrong view of life, and will never get the splendid results out of his vocation which were intended for him.

The man who does not look upon his vocation as a great unfolding, enlarging, cultivating, educative, elevating process—the results of which could come in no other possible way, has made a very poor guess of life's riddle.

Multitudes of people do not half respect their work. They look upon it as a disagreeable necessity for providing bread and butter, clothing and shelter as un-

avoidable drudgery, instead of as a great man builder, a great life university for the development of manhood and womanhood. They do not see the divinity in the spur of necessity which compels man to develop the best thing in him, to unfold his possibilities by his struggle to attain his ambition, to conquer the enemies of his prosperity and his happiness. They cannot see the curse in the unearned dollar, which takes the spur out of the motive. Work to them is sheer drudgery an unmitigated evil. They cannot understand why the Creator did not put bread ready-made on trees. They cannot see that the best thing in man has ever been developed by the necessity of labor. They do not see the stamina, the grit, the nobility, and the manhood in being forced to conquer what they get. No one can make a real success of his life when he is all the time grumbling or apologizing for what he is doing. It is a confession of weakness.

What a pitiable sight to see one of God's noblemen, made to hold up his head and to be a king, to be cheerful and happy, and to radiate power, going about whining and complaining of his work, apologizing for what he is doing, and deploring the fact that he should have to work at all!

It is demoralizing to allow yourself to do a thing which does not get your approval, if you do it in a half-hearted, grudging manner.

There is a great adaptive power in human nature. The mind is wonderfully adjustable to different conditions; but you will not get the best results until your mind is settled, until you are resolved not only to like your work, but also to do it in the spirit of a master and not in that of a slave. Resolve that, whatever you do, you will like it; that you will bring the whole man to it; that you will fling the whole weight of your being into it; and that you will do it in the spirit of a conqueror, and so get the lesson and power out of it which come only to the conqueror.

Put the right spirit into your work. Treat your calling as divine as a call from principle. If the thing itself be not important, the spirit in which you take hold of it makes all the difference in the world to you. It can make or mar the man. You cannot afford grumbling service or botched work in your life's record. You cannot afford to form a habit of half doing things, or of doing them in the spirit of a drudge, for this will drag its slimy trail through all your subsequent career, always humiliating you at the most unexpected times. Let other people do the poor jobs, the botched work, if

they will. Keep your standards up, your ideals high.

The attitude with which a man approaches his task has everything to do with the quality and efficiency of his work, and with its influence upon his character. What a man does is a part of himself. It is the self-expression of what he stands for. Our life-work is an outpicturing of our ambition, our ideals, our real selves. If you see a man's work you see the man.

The foregoing is only about one-third of the article, and I wish you could read the whole of it, but lack of room prevents my giving more. Yes, I wish you could read Success month after month.

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If you have any to dispose of, or if you intend to buy, correspond with us.
We are always in the market for WAX at the highest market price.

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Bee-keepers, we can furnish you with the best

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at the lowest prices; and all other up to date goods
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AUGUST LOTZ & SON, Cadott, Wis.

SECTIONS One-piece, strictly first-class, of all standard sizes, at \$4.00 per thousand for No. 1, and \$3.50 for No. 2. Plain sections 25 cts. less. Other supplies at low prices.
2-07-tf J. E. MORGAN, Oansville, Irgham Co., Mich.

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We strive to please. We have the best, the finest, the prettiest, the whitest comb builders. They winter fine because they don't get excited Bees by the pound. One two and three-frame nuclei. Circular. Write, A. D. WOOD LANSING, Mich.

Advanced Bee-Veil

50 cts. Postpaid.

Made of imported French tulle veiling, cotton with silk face, and cord, an arrangement which permits the wearer to handle bees in shirt sleeves, with no chance of bees crawling up and under veil. With a hat having a fair sized rim, you are as cool and comfortable and as secure from stings, with movements as free and unrestricted as if you were at the sea shore with nothing of the kind over your head. No wire screen dancing around and wearing the hide off the end of your nose. The cord arrangement does away with the hot, stuffy, uncomfortable feeling of other veils. Bee stingers are extra long in August, get our veil by return mail and be comfortable.

Here is what the general manager of the National Bee-Keepers Association has to say about the Advanced Bee Veil.



A. G. Woodman Co.

Enclosed find 50 cts. for one of your veils.

A. G. Woodman Co.

Bee veil just received and is as advertised, the best on the market. Find enclosure for 10 more veils.

A. G. Woodman Co.

Please send me two more of your bee veils. I have tried all kinds and yours are best of all.

Platteville, Wis., April 7, 1906.

N. E. France.

Platteville, Wis., April 14, 1906.

N. E. France.

Platteville, Wis., June 10, 1907.

N. E. France.

A. G. WOODMAN CO., Grand Rapids, Mich.



We have a complete stock of Root's Goods and can save you time and freight expense. We would like to quote you prices on the goods you need. We sell the Danz. hive, the Comb Honey hive, H. H. HUNT & SON, Redford, Michigan.

Send for
Our 1907
Catalog.

BIG SLAUGHTER

In Bee Supplies. Owing to the backward spring I have a car load of Dove-tailed Hives, too many, also a car of sections. To move these quickly I will name you a very low price. 2,000 lb.-shipping cases for 4 $\frac{1}{4}$ sections, all basswood, one-piece covers, 13c each.

Augusta Berry Baskets and Crates in stock. Send for 32 page list.

Beeswax wanted; 31c cash, 33c trade.
W. D. SOPER, Jackson, Mich.

WANTED To buy, for cash, comb and extracted honey, also bees wax.

ROBT. A. HOLEKAMP & SON,
St. Louis, Mo.
8-07-4t

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New Catalogue Lower Prices
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SUPERIOR QUEENS.

For the rest of the season I will sell Untested Queens, reared during a heavy honey flow, at 60c. for one, \$1.60 for three; \$3.00 for six, \$5.50 for twelve, \$10 for twenty-five. These are all selected queens, large, fine ones reared from queens reared by Moore. No inferior queens are allowed to mate. I can not warrant them purely mated at above prices, but, for 10c. extra on each queen, I will replace all mismated ones.

3-07-tf

S. F. TREGO, Swedona, Ills.

WE WANT YOUR COMB-HONEY.

When you ship to us, you ship to the biggest exclusive honey dealers in business today. Don't take our word for it—

ASK THE EDITOR

We buy in unlimited quantities, have an unlimited outlet for the goods.

We REMIT TO YOU the day SHIPMENT ARRIVES.

Just write us how much you have to sell, your price delivered in Cincinnati, and how the honey is packed.

COMB-HONEY TO US, MEANS BIG MONEY TO YOU.

The FRED. W. MUTH CO.

The Busy Bee Men.

51 Walnut St.

Cincinnati, Ohio.

IT HAS A SIDE GRATE that strengthens the fire-cup, and holds a removable metal and asbestos lining that keeps it cool, adding to its durability. It has no valves to get out of order or snout to **CLOG WITH SOOT.**

ALL THAT IS CLAIMED—N. E. France, Platteville, Wis., General Manager of the National Beekeepers' Association says:

"I have given your 20th Century Smoker a thorough trial. For convenience in lighting, durability and long time one filling will last and give ample smoke. I find it all you claim. In the spring I shall want several. I always want the best."

SURPASSES ALL OTHERS—Mr. Grant Stanley Nisbet, Pa.—"After giving the Danzenbaker 20th Century Smoker several trials, can say it surpasses all smokers it has been my liberty to try; it will not go out until the fuel is all consumed, and it produces a cool smoke, a feature very necessary in any first-class smoker."

BEST IN TWENTY YEARS—M. D. Andes, Bristol, Tenn.—"I have used the 20th Century Smoker one season. It has given me entire satisfaction. In my twenty years of bee-keeping I first used the old stand-by Clark smoker, and I believe I have tried all the different makes, as I am always looking for the best, and will say that your smoker beats them all up to date."

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W. Z. HUTCHINSON,
FLINT, MICH.

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The honey is put up in bright, *new*, shiny, 60-lb cans, two in a case, and is offered at ten cents a pound, or \$12.00 for a case of two cans. Perhaps some will think this a high price, but we must take into consideration the great loss of bees last winter and spring, the almost total failure of the white clover honey crop, as well as that of California, together with the upward tendency in the price of nearly all commodities. Remember, too, that this is not the ordinary honey—it is *raspberry* honey; and, besides this, it has been left on the hives until it was all sealed over and thoroughly ripened, and is as far superior to ordinary honey, as ripe fruit is more delicious than green.

If you prefer to taste the honey before ordering, drop me a postal, and I'll mail you a generous sample—enough so that the neighbors, too, can have a taste, and perhaps will wish to join you in ordering a case, if you do not care for that much yourself.

W. Z. HUTCHINSON, Flint, Mich.

ADVANCED BEE CULTURE

The foundation of a crop of honey rests in the successful wintering of bees, and this is the result of many things. Strong colonies alone will not insure safe wintering, neither will a warm cellar, nor chaff hives. Perfect stores will come the nearest to it, but they can't be depended upon *alone*. In some localities the natural stores can be depended upon; in others part of the natural stores are all right for wintering purposes, and others are disastrous. There are methods whereby the right natural stores may be secured for winter, or, if not, the colonies may be brought through the season practically free from natural stores, when it is an easy matter to furnish them the best of all winter stores—cane sugar.

When the food is all that it should be, then comes the matter of protection; shall it be packing of some kind, such as sawdust, or chaff, or planer shavings, or shall it be the cellar?

If it is the cellar, then follow the matters of temperature, moisture, ventilation, etc., all of which have a bearing upon successful wintering. There is a way of telling whether a cellar is damp, *how* damp it is, and whether it is *too* damp (depending upon the temperature) and there are methods of rendering it dry if it is too damp.

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Then there is the giving of protection in such a manner, when wintering bees in the open air, that the cluster may remain warm and dry.

Successful wintering is really a many-sided subject, but it can be mastered so as to be able to bring colonies of bees through the winter so safely as may be done with a cow or horse.

All of the leading factors of successful wintering, as well as the minor details, are given in the book *ADVANCED BEE CULTURE*, and I am satisfied that any man who reads this book, and follows its instructions, will winter his bees with practically no loss. Last fall I put 104 colonies of bees into my cellar, and took them all out in the spring alive, dry, clean, healthy and strong, and I *know* I can do this *every time*, and so can others if they will follow the instructions that I give in *ADVANCED BEE CULTURE*.

If you have failed in wintering your bees, or, if you have succeeded only in a measure, and would like to secure *perfect* wintering, get the book *now*, and read it, and put into practice its teachings, and next spring will find you with strong, healthy colonies—the foundation of all honey crops.

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W. Z. HUTCHINSON
FLINT, MICH.

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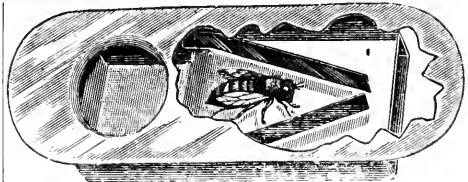
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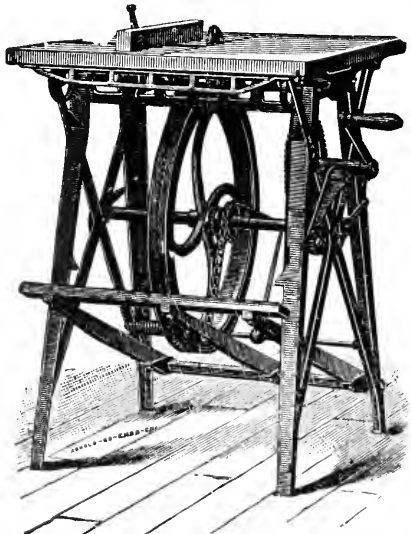
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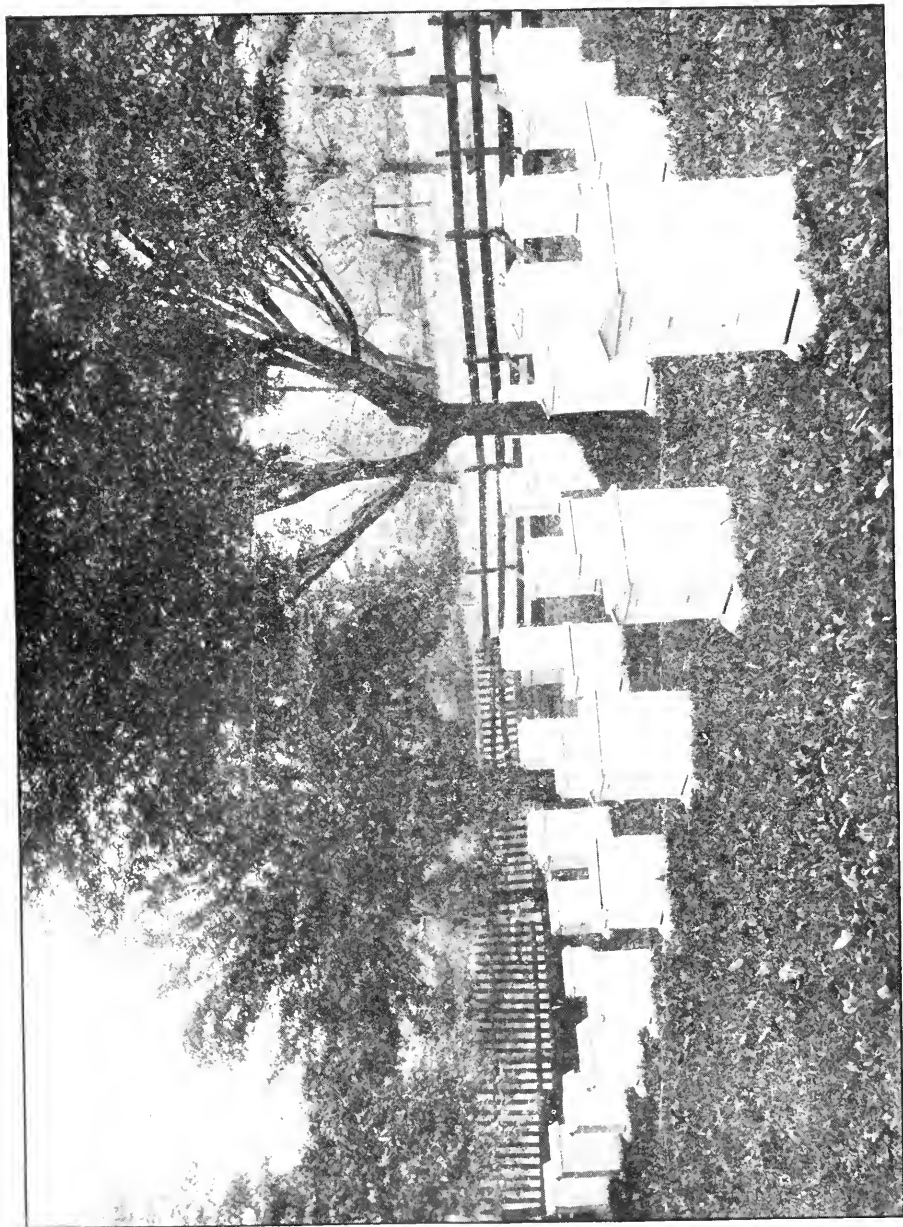
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W. Z. HUTCHINSON, EDITOR AND PUBLISHER.

VOL. XX. FLINT, MICHIGAN, OCT. 15, 1907. NO. 10

The Highest Success Comes as the Result of Knowing How.

W. Z. HUTCHINSON

LAST summer I received the photograph  from which the accompanying frontispiece was made, and I admired it greatly. The point of view, the balance, the background, the exposure, the development, printing and toning were all perfect, and appealed strongly to my photographic sense. As a rule, white hives in a photograph are simply white paper. I don't know whether the half-tone will show it, but there is a texture, a sort of color, to these hives—they are not dead, glaring white. If the letter head accompanying the picture had not read "Homer M. Matthewson, Portrait and View Artist, Binghamton, N. Y.," I would have known that it was the work of a professional.

I wrote Mr. Matthewson and told him that I should like to use it in the Review, and asked him if he could not furnish a "story" to go with it. He replied that he was pretty busy; that during each week of August, September and October he attended a different fair, and used his camera making tin types, but he would

try and write something. Before going north to build another bee cellar, I sent away the photograph to have a cut made. Mr. Matthewson sent the promised article, and it was forwarded to me from Flint, but, for some reason, failed to reach me. There was not time to get another article, nor to have some other cut made, so I am using the cut and writing the "story" myself; although it probably is not so interesting and appropriate as the one written by Mr. Matthewson. The best that I can do is to call attention to the beauty of the picture, all the result of "knowing how," and point the moral that, whatever your business it pays to "know how." Read all of the books and journals, attend conventions, visit bee-keepers, and, above all experiment, and *think* for yourself. Resolve that you will know all about your business that it is possible to know, then you may expect the results to be like this picture.

FLINT, Mich., Oct. 1, 1907.

Don't Keep Queens After They Are Two Years Old.

E. W. ALEXANDER.

REQUEENING an apiary is one of the important points of keeping it in a profitable condition. As long as it is neglected as it is by many bee-keepers, there will be no end to the complaints about poor seasons and over-stocking. Not but what we will frequently have poor seasons, when colonies with the best of queens will give us only a small surplus, but the chances are so much better with colonies having good queens, that I often wonder why any one should tolerate a poor one a day longer than could be helped. This is a subject to which my son and myself have given special attention for several years, on quite an extensive scale. And we find, all things considered, that it is best to requeen our colonies as early in the season as convenient during the third summer of the queen's life. We would not care to do it when she was any younger, even if we had more young queens than we could possibly use; unless the queen had some other fault, aside from her age. We frequently supersede queens within six weeks after they commence to lay, also some when one year old, but it is because of some fault, such as their bees being of a cross disposition, or not good workers, or the queen not sufficiently prolific. While it is true that many queens will give us good service until three years old, and some do fairly well at the age of four years, it is poor policy to keep them after they are two years old. After that age they are too slow in filling their hives with brood in the spring, and we are sure to lose many during the winter and spring. This usually amounts to losing the colony; and the loss in dollars, of even a few colonies, would buy many good queens in the fall. So, my friends, don't

allow yourself to take any chances of loss if you can prevent it. We have too many to bear when we shun all we can.

Now as to how we should requeen: I think by far the better way is to either rear or buy good, large, well-developed queens from some reliable queen breeder who rears his queens from a good honey gathering strain, then introduce them into our colonies according to our most successful method of introducing.

I never thought much of leaving this superseding part of the business for the bees to decide; it is the poorest of all ways; they don't know one-tenth as much about what is for their welfare in this respect as we do.

Neither do I think much of simply removing the old queen and allowing the bees to rear one in her place. That is too much of a slam bang way of bee-keeping. We are then breeding from our poorest colonies as well as the best; and, besides, we will soon have a large per cent of small, inferior, degenerated queens that I would not allow in an apiary under any circumstances whatever.

I cannot understand why it is that so many bee-keepers hesitate as they do about buying good, young queens. The same men would not think it extravagant to buy 100 bushels of good oats for their horse, although it could be fed on cheaper food and do good services. You never can get as good results from a cheap grade of queens as you can from the best. I don't think there is any other one thing connected with our bees, except sugar for spring feeding, that has paid us as well, considering the expense and trouble, as the rearing and buying of choice queens. This is a subject we have tested thoroughly for a long time in all

its different phases. And in the above I give the reader the benefit of our experience.

In conclusion, I repeat, don't supersede your queens until they are two years old, unless it is for some special fault; neither is it best to try to keep them after that

age unless it should be a choice breeding queen.

I hope to hear from others through the Review on this important subject.

I give the above as my mite for the benefit of the inexperienced.

DELANSON, N. Y., Sept. 1, 1907.



What Have Been the Profits of the Northern Apiaries?

M. P. CADY

MY dear Mr. Hutchinson:—The September Review is at hand, and, now while the "spirit moves," I shall send in my question—or topic—in response to your special request, page 277, namely: What are the net profits of the bee-business conducted by yourself and brother, for the last two years?

It may seem an impertinence to ask a man in regard to his private business—but, really, it seems to me that your business has in one sense been an effort to demonstrate the truth of the doctrine: "Keep more bees," of which you are the acknowledged apostle. The present number of the Review is still voicing the same doctrine, and I, at least, would like to have the mathematical demonstration that the profits of your business demonstrate that your teaching is based on good business sense.

It is all well enough to wax poetical, upon occasion, and descant upon the beauties of nature, "rows of white hives on the greensward" and all the other beauties of modern bee-culture, but, who is it that says: "When Poverty comes in at the door, Love flies out of the window"?

I have no doubt but there are many, like myself, who have been following your writings as well as your bee-keeping ven-

tures, with both a keen interest and a determination that you must either prove the truth of your doctrine: "Keep more bees," or else, we, your peers, must condemn your proposition—so far, at least, as your effort to prove it is concerned. As a jury, we are not impartial, I fear, for the doctrine sounded so good that we all hoped it true.

In glancing over what I have written, I fear that there might be a tinge of apianian agnosticism suspected—that I am asking for something which is prejudicial to your favorite maxim: "Keep more bees." Not so; but rather am I asking for the "reason of the hope which is within you," hoping that you will be able to demonstrate that we shall be wise in following your advice—provided we *can* succeed as well as you *have*.

When I was teaching school, we sometimes used to sing:

Some sing of charming women,
Some sing in praise of drink;
"I'll sing of what we all adore,
And that's the merry chink.
You may call it filthy lucre,
You may call it worthless dross;
But up a tree you're sure to be
If your to mourn its loss.

Chorus:

For there's nothing half so handy as the chink, chink, chink;
Nothing half so jolly as the chink, chink, chink;
You may do without a wife, you may do without a drink;
But you can't do without the merry chink, chink, chink.

On several occasions I have found the sentiment of the song very true.

BIRNAMWOOD, Wis., Sep. 26, 1907.

[No one knows, or ever will know, how I have enjoyed the establishing and management of those apiaries in Northern Michigan. In September, Elme and I camped out at the Morey yard while we were extracting the honey. It was right in the height of the wild blackberry harvest, and how we did revel in their deliciousness. Great bushes as tall as my head, growing in the shade, were fairly bending with their weight of black, glossy, spicy fruit. In one place I picked a pint without stirring from my tracks. Morning, noon and night we had great dishes of the berries heaped up high and covered with sugar and cream. The latter came from a settler living near. Then there was coffee, and bread and butter, and mealy potatoes such as grow only in that northern land.

The last trip, from which I am now returning, was made to build a bee cellar where we are to establish another yard. I thought I had before seen gorgeous autumn foliage, but those northern hill-sides of maple, oak, elm, sumac, and popple, bathed in the liquid gold of October's sunshine, surpass anything I have ever seen in brilliancy, variety, and depth of coloring. When we are coming home at dusk, winding along the valley roads, every hill a triumph of chromatic art, vista after vista springs into view with each turn of the road, the deepening twilight throwing a purple gloom over the distant hills, until finally they fade and the stars begin to glimmer—such sights fill the soul with a quiet joy and peace that lifts it far above business cares.

But, as brother Cady says, it is all well enough to wax poetical, but what about the practical side, what about the "chink"? Certainly this question ought not to be ignored. Before entering upon that, let me make a little explanation. Mr. Cady says that the establishment of the northern apiaries has been, in one sense, an "effort"

to demonstrate the truth of the doctrine, to "keep more bees." Perhaps, in a slight degree, but the main impelling cause was an intense, irresistible longing to be right in the thick of the business, *with my own hands*. I presume I became so full of enthusiasm on the subject that I talked about it until I may have bored some people. I was once expatiating to a young bee-keeper upon the advantages of Northern Michigan as a place for establishing apiaries, when he said: "I presume, if you were ten years younger, we would soon see you running a series of yards in that region." This was the last straw. There was a sting about this that stuck. The *idea*, that I was an old man, past the time of life when I could take up new enterprises—I would show them! And right here let me say that the embarking in this enterprise has made me a younger man—physically and mentally. I suspect that it is largely because the work has been done in the spirit of joy, gladness and enthusiasm.

But I am not yet talking of the "chink" side of this venture. To be honest about it, the time has not yet arrived when I could show a balance sheet that would *fairly* represent the status of the business. It has been only 18 months since my brother and myself first turned our hands towards this venture; and we have poured out both money and labor most freely. A neighboring farmer who has often helped us with his team once remarked: "Well, you fellows must have lots of confidence in the bee business by the way you put your money into it!" But to ask us to prove *now*, by a balance sheet, that "keeping more bees," is profitable, would be like going to a man who had bought a new farm, fenced it, built a house and barn, and cleared a few acres, and ask him to prove by his experience, that farming was profitable. We have been looking up locations, moving apiaries, building bee cellars, transferring bees and buying hives, foundation, and implements. This year we bought 600 new hives, 600 lbs. of foundation and three new, automatic,

four-frame extractors. Don't imagine, however, that we are "going it blind." We keep a careful account of every cent that is expended, and every hour of labor, as well as keeping tabs on the receipts, and will eventually be able to tell how profitable has been the venture. I will frankly admit, that there was no profit the first year; we just about got back our expenses and pay for our labor. This year there will probably be a profit, nothing startling, as we have been buying hives, foundation, etc., but we have not yet "figured up" and will do so very accurately until the end of the year.

There is one consolation, however, in that the soundness of the enterprise, especially, the running of out colonies and the "keeping of more bees," does not depend upon the financial success of the North-

ern Michigan enterprise of ours. Other men have thus met success, even if we should not; and I know of no reason why we will *fail*. As I have already said, we are only just getting fairly settled, but there is brother How, one, who has been "keeping more bees," for these many years, and in this very issue of the Review show a balance sheet of an apiary operated in the very region where our yards are located, and during the very poorest season that has ever been experienced in this part of the State. I know this is not giving my financial experience, but it must answer for the present. I thank brother Gady for his very interesting letter; the matter that he brings up is all-important, and I will only be as patient as he is, and I think, he shall eventually have his answer. [ED. NOTE.]



Some Comments on the Hutchinson System. Requeening

MARY LATHROP

FRIEND Hutchinson: The *Amateur Bee Review* came last evening and I read it nearly all through before I could get to bed. It seemed so much like a personal letter to me that I can't resist the feeling that I should reply to it.

I think you have done the right thing in launching out into bee-keeping, and we have. I like your plan for the present, and it is the one that we are following pretty closely.

I can not help noticing the contrast between your method of producing extracted honey, and the one described by Mr. Facey, of Minnesota. His method, it would seem to me, would not produce the thick, rich, honey that you describe; and yet it seems to succeed with him. I am quite certain the yield will be greatly reduced, by failure to extract full combs, unless

the bees are very young and only a few bees are left in the comb. Ten combs to allow for the loss of the white honey will give you thirty without extracting.

My dear little girl at our place was very interested by the big dog who was taking the picture of our *Winter* picture. What that little girl is interested in is a lot of care and charge of that kind of business. When the bees were a good deal older, and queens dropped, they did very well, but when I made a queen change Aug. 13th I was surprised to find many hives plugged with honey, and sealed from top to bottom. They had been doing better than I expected them to do, and Amy did not realize the true situation. She was extracting some out I am satisfied we lost honey

by not giving more room. However, we have no fault to find, because the expense of caring for that yard has been small and the income will be good.

In regard to requeening: The best I can do is to mark such hives as appear to have poor queens at the time of clipping. Then, as soon as I can rear queens, which is not much before the swarming season with me, I make it a point to requeen as many of those marked hives as possible. By this method one can keep his apiary supplied with a fairly good queen force. Situated as I am it is not possible to requeen each hive once in two years. It involves too much work.

We have heard stories about hives worked with more than one laying queen in them; yes, five or six at a time. I would like to know how it is done, and

how one can rear queens enough for such a plan while working for honey. We had very little swarming in our yards this summer, but find quite a good many hives in which old queens are being superseded during August.

Indications point to a fall crop, as there is an abundance of fall bloom here on the Wisconsin bottoms.

I have noticed statements in the bee journals to the effect that glucose mixtures had been done away with through the operation of the pure food laws. I want to say that just as much of the so-called corn syrup is being shipped into this burg as ever. I fail to see wherein the manufacture and sale of glucose syrup in this form has been curtailed.

BRIDGEPORT, Wis., Aug. 28, 1907.



Nominations Ought to Be Free From Official Electioneering.

ARTHUR C. MILLER

DEAR Mr. Hutchinson:—In your head and tail to my criticism of the National Bee Keepers' Association you invite further criticism but more along lines of suggested improvement. First let me criticise that form of policy which the Prest. and Genl. Mgr. have adopted of using the circulars of the body to advance the selection and election of persons to fill offices soon to become vacant. The constitution provides specific ways for the nomination, and it is unjust to all members who may have other candidates they may wish to offer, to use the influence of present incumbents and of official literature as it is being used.

Undoubtedly Mr. Aspinwall has the best of intentions in putting forward the name of Mr. Hilton for the Presidency of the

society, and in all probability he would fill the office conscientiously. Now there are some members who believe that another person would be better for the place, but what chance have we to give such a person the aid which has been given Mr. Hilton by Mr. Aspinwall through the improper use of the official circulars of the General Manager? The time for nominations you will note close, Oct. 13th, and in the same circular in which these are called for, the General Manager has seen fit to do some special electioneering. Mr. France has been particularly unfortunate on sundry occasions in doing such things, and I think it perfectly proper for the members who object to such use of his position to criticise him. That he has done good work for the society is evident.

and I last year not only voted for him but publically urged his re-election. As years and experience usually bring wisdom to a man of ordinary intelligence, and as Mr. France's position in life shows that he is not below the average, I believe that he is the logical successor to himself in the office he now holds. But for President, I and many others do not believe that Mr. Hilton is the best man for the Presidency, and solely because he is a supply dealer. His interests are not those of the honey producers and cannot be. Do you suppose that if the National had not been dominated by supply dealers that long ere this the Society would have secured reduced prices on many goods?

How heartily is a man going to work for a measure which means lessened income? Put it up to yourself. How much initiative or how much aggressive work will you put into a measure which will lower the price you are to get for the honey you have so laboriously secured in Mich., or that will seriously cut the price of the advertising in the Review or its subscription? We would consider you more than simple so to do, and yet, as honey producers, we are asked to put at the head of our National body a man whose interests lie in maintaining the prices of all that the bee keepers use.

You are constantly urging the keeping of more bees, and to further that object suppose you lend your aid to the men who would like to follow your advice by lessening the cost of following it. The producer's side is the opposite of the manufacturer's side. The former work for lower cost of needed implements and supplies while the latter work for higher prices for the same things. Under such natural conditions we are fools to elect a supply dealer to the head of our organization and then expect to secure reductions. There are a good many simple minded persons among bee-keepers as evidenced by the way they have danced attendance on every varying fad put forth by the thrifty supply men and the clever exploiters of new races of bees. But all

are not so, as you have seen by the withdrawal of the New York members. Others, whose homes are farther apart, and hence cannot so readily get together for mutual aid, have seen fit to remain in the body and work for its regeneration.

To discredit an opponent is oft the quickest way to make harmless his opposition, and so the opponents of the "N. B. K. A. for Bee Keepers only" have put up the cry that the advocates of such a policy are assailing the character and integrity of the supply men and their agents. It was a clever ruse but it is losing its power.

As honey producers let us take and keep control of the National Association which in name is ours and is supposedly for our protection and benefit.

PROVIDENCE, R. I., Sept. 28, 1907.

[For once Mr. Miller has taken up what I deem a legitimate line of criticism, and I agree with him that official documents ought to contain no electioneering. Three years ago the Board of Directors passed a resolution or rule instructing the General Manager to publish, in the *bee journals* in August, a call for a postal card vote for nominations of candidates for the several offices to be filled at the next election, and on October 1st the General Manager and one other disinterested member should count the votes, and the two persons receiving the highest number of votes for a certain office should be the candidates for that office, and the results of that vote should be published at once in the *bee journals*. Instead of sending out a call for this vote in August, sending it to the *bee journals*, the General Manager did not send it out until September 22nd, and then in the form of a circular, instead of to the *bee journals*.

With his multiplicity of cares and duties, and I can well understand how the General Manager might have overlooked the sending out of the notice in August, and I presume that the publishing of the notice in a circular addressed to the members carried out the spirit of the resolution, but I think it would have been much bet-

ter to have published the call in the journals. Those circulars are mainly a list of men having bees or honey for sale, and of those who wish to buy, and may not be read as thoroughly as a bee journal. As for myself, I never noticed the call for nominations until the above article called my attention to it. I kept watching the bee journals for the notice, and wondered why it did not appear, not dreaming that it would come in a circular mixed with other matter.

I presume that President Aspinwall did not write to Mr. France as he did, expecting that it would be published in an official circular, and I still further expect that Mr. France did not give the matter sufficient consideration when he published it, but it will be seen, after a moment's thought, that that one little line practically elects Mr. Hilton. I have nothing to say against Mr. Hilton. He is an excellent presiding officer, and, personally, I would like to see him elected, but above and beyond all this there is a spirit of fairness that must be satisfied before I can vote for any man. For a few years some of the hot-headed, disgruntled members have been shouting "ring," "ring," when there was not a semblance approaching a ring, and we must so conduct the affairs of the Association that there

never will be any such semblance. Let the rank file once get it into their heads that the Association is managed by a "ring," and its usefulness is gone forever. In this matter of nominations, the members should be left free to express their choice with no official influence brought to bear upon them. I think it all right to electioneer through legitimate channels, such as the bee journals, but *official* documents ought to be entirely free from it. Mr. Miller says that some members would prefer some other man than Mr. Hilton, but it is now too late to give their candidate the advantage of a public "boost," in advance, and through the official circular. In a spirit of fairness I, too, would like to place some other man in nomination. I would like to nominate Mr. M. A. Gill, of Colorado, who came very near being elected last year, but it is now too late to do anything of this kind, and the only thing that we can do is to enter our protest against future official electioneering.

In regard to the election of supply dealers to office I have heretofore expressed my views. In my opinion, the objection is very slight, but, so long as there is a faction that objects, and there are plenty of capable members who are not dealers, it seems to me that, other things being equal, we better choose those who are not dealers.—EDITOR.]



Helpful Hints in Extensive Bee-Keeping.

E. D. TOWNSEND.

AT this time an average colony was placed upon a set of scales. There is a rural mail route by this yard, thus I was able to get a daily postal card report from this scale hive. A report of the weather was also sent, hence I knew at

once of the drouth that cut short the last end of the honey season. I also kept in touch with the progress the bees were making in their supers, knew when they began to cap their sections, etc., and was thus able to give occasional suggestions

as to taking off honey, giving additional super room, etc.

IMPORTANCE OF KEEPING YOUR FINGER ON THE PULSE OF A DISTANT YARD.

July 4th I received a card stating things were getting very dry; still the scale hive was showing a fairly good gain. This card led me to believe that the season was probably two-thirds over; and it was about noon, July 5th, when I arrived at this yard, on my fourth visit. There were only about 300 pounds of section honey finished and off the hives; but there was more being finished, as the dry weather was favorable to the curing and sealing of honey. No more empty supers were given; and it proved that we had made a good guess as to the duration of the honey flow, for we got all the supers finished except eight or ten, that needed just a little feed to finish sealing.

I stayed four days at this trip: and my son and I worked faithfully with the sole purpose of getting this crop of comb honey finished up. The first thing we did, was to put bee-escapes under all the heaviest, or best finished supers. This was kept up until nearly every super in the yard had been handled, and all the finished sections removed. The partly full sections were put in supers, and returned to the colonies that were the most likely to finish them. When we got through there was no colony that had more than one super to finish, and several had none. These colonies that were left without supers were the new swarms that were still on one section of their hive. These were now given their other section of their hive. This gave them a week or so of the last end of the honey flow for their own use, which put them in better shape to build up for winter.

During the time that this shifting was going on, we kept in mind the fact that some colonies were finishing up honey faster than others, and these free-working colonies were given those supers containing the most work to do. We think we gained quite a considerable time by doing this.

It is a custom of ours to do lots of this shifting of supers from colony to colony. To illustrate, a colony that is a little sulky about drawing out foundation in the sections, will often finish up and seal combs quite readily; taking advantage of this fact, we keep these sulky fellows finishing up work.

We had, at this yard, about 35 new swarms; 30 from the 84 comb honey colonies, and 5 from the 84 worked for extracted honey. This just made up our loss through queenless colonies during spring, and was about the number we wanted. The first new swarms were hived in one section of our shallow hive, on combs where the bees had died during spring. The sections were removed from the parent colony, and given to the new swarm, on the old stand. This was done immediately after hiving; and with this treatment, there was not a single swarm absconded. Towards the last of the season, new swarms were hived in the dead-swarm-hives in the extracted honey yard; so that the yard had the same number of colonies in the fall that it had the previous fall.

This about finishes the story, except that Delbert stayed and finished harvesting the crop of honey, and put it in marketable shape. There were 2,300 pounds of No. 1 and fancy comb, and 6,000 pounds of extracted. This being a poor season, the crop was short. Delbert also fed three or four barrels of sugar to colonies short of winter stores. This yard being located on the bank of Rapid river, one of Michigan's famous trout streams, do not imagine for a minute that producing honey was all we did.

FEEDING BACK TO GET PARTLY-FILLED SECTIONS COMPLETED AT THE CLOSE OF THE HONEY SEASON.

Delbert came home the last week of August, having been in this yard a little over three months. My last, and fifth visit was the 5th and 6th of November to put the bees into their winter quarters, of which I will write at some later time.

I mentioned above that there were several supers that were not sealed and in condition for the market at the close of the season. In these last-filled, unfinished sections, the part that is capped, is very thin, or lean to look at, and were they finished up and capped without the cells being lengthened out, they would not weigh more than 11 to 12 ounces; and were we to feed to get them into marketable shape, the unsealed portion would be drawn out to the regular thickness, while the part that was capped would be left untouched, thus making a bad looking job. We remedy this by uncapping the portion that is capped, letting the bees do anew the whole job of capping, and this gives us a good, smooth, even surface; about the same as they cap with a natural flow. It was good enough, so that it went with the rest, at 15 cents a pound, on the car here.

Although this "fed back" honey has the reputation of candying more quickly than the natural gathered article, we have no trouble along this line, although we take the precaution of shipping it to market as early as possible after it is ready.

COMPARATIVE RESULTS IN EXTRACTED AND COMB HONEY PRODUCTION.

THE COMB HONEY YARD.

84 colonies at \$4.50	-	\$378.00
16 empty hives and combs at \$2.50	- - -	40.00
300 supers complete at 50c.	-	150.00
Tools	- - -	10.00
1 honey house	- -	50.00
Total capital invested		\$628.00
Interest on capital invested	\$	37.68
Wear and tear	- -	37.68
Rent and taxes	- -	9.00
3,000 sections	- -	13.00
30 pounds foundation at 54c	-	16.20
150 shipping cases	- -	22.00
18 outside crates at 40c	-	7.20
Work (estimated)	- -	75.00
Traveling expenses	- -	20.00
Total expenses		\$237.76

Credits.

2,300 lbs. comb honey at 15c	\$345.00
1,000 lbs. extracted honey at 8c	80.00
15 lbs. wax at 30c	- - 4.50
30 new swarms at \$1.50	- - 45.00
Total receipts	\$474.50
Expense items	- - 237.76
Profits	\$236.74
Per cent of profit on capital invested,	
37 ² / ₃ per cent.	

EXTRACTED HONEY YARD.

84 colonies at \$4	- -	\$336.00
16 empty hives at \$2	-	32.00
170 upper stories and combs	\$2	340.00
1 four-frame extractor	-	20.00
Tools	- - -	10.00
1 honey house	- -	50.00
Total capital estimated		\$788.00
Interest on capital invested	\$	47.28
Wear and tear	- -	47.28
Rent and taxes	- -	9.00
42 cases of empty cans at 40c	-	21.00
Work (estimated)	- -	25.00
Traveling expenses	- -	20.00
Total expense		\$169.56

Credits.

5,000 lbs. extracted honey at 8c	400.00
50 lbs. wax at 30c	- - 15.00
5 new swarms at \$1.50	- - 7.50
Total receipts	\$422.50
Expense items	- - 169.56
Profits	\$252.94
Per cent of profit on capital invested, a little over 32 per cent.	
Total income from both yards	\$897.00
Total expense items	- - 407.32
Total profit	\$490.78
Total per cent of profit on both yards, about 34 ¹ / ₂ per cent.	

It will be remembered that the season of 1906, in the location where this yard is located, was very poor; bee-keepers getting only about half a crop. Had the season been an ordinary one, and we had harvested, say, double the crop we did,

many of the expense items would have been considerably reduced; that is, in proportion to the amount of honey secured. Take the item of labor: While there was plenty for one to do a considerable of the time, at other times there was little to do; and, had the crop been double, just a little extra help at harvest time would have secured it. This extra help, and extra supplies would not have been anywhere near as much expense, as would have been gained in the larger

crop of honey; while the items of interest, wear and tear, rent and taxes, would be the same.

I think this statement would be incomplete, unless I told what my son would often say, while working this yard. The expression would be something as follows: "I could have worked five yards for extracted honey with the same labor it took to produce this crop of 2,300 pounds of comb honey."

REMUS, Mich., Jan. 21, 1907.



Some Comments on the Review for 1906.

E. F. ATWATER.

THE first point of special interest to me in the Review for 1906 is found in Mr. Gill's article in the January number. I fully agree with him in his sincere appreciation of the Review; and his high opinion of the standard Langstroth hive is just my opinion too, after no small study of the question and some experience with various hives, including one experience in following after strange hives—led astray by some weakness in my nature. In letters of gold let us repeat with him that "I will say that I aim to see how *little* work I can do in early spring instead of how *much*." It is just wholly true in many places that hives having an abundance of stores and breeding room need no spring care before some time in May, unless queens are to be clipped in many yards. Our distant yard had no care until May 10th, yet gave a fine crop. Our Dry Creek yard of 80 colonies in 1½ and 2 story hives heavy with stores will need no care next spring, unless the season be so favorable (as was the season of '06) that they will need even more room, early in the season.

Now that dubious looking Miller Wax extractor: Strange, that we hear no reports from users of an invention so promising.

WESTERN HONEY IS SOMETIMES RIPE WITHOUT BEING CAPPED.

In the February Review, Holtermann's article on short-cuts in extracting is *fine*, but don't let any Eastern man with a humid summer climate try to dictate to all the world that honey *must be* capped before extracting: don't think that I advocate frequent extracting, but with such tiering as Holtermann and Hutchinson practice, a large part is sometimes left without capping here, some seasons. He gives the Alexanders a nice dig in the ribs about "carrying and showing the comb-baskets through openings in a wall." Use a wheel barrow or cart, of course—do twice the work twice as easy, twice as quickly. Why not tell us how the uncapping machine worked, if it *did* work.

How about the A. C. Miller uncapping machine, heralded a few years ago?

When I read about the Holtermann Automatic strainer, within the extractor, I

thought that I wanted the same arrangement. But I don't believe it will work with our "gummy" honey, so I have in mind something better (I hope) the invention of a friend.

Page 46. Mr. Aikin and I don't agree on where to add room to control swarming. I say *on top* is the best place, as soon as the bees need more room. Queen and bees will move upward, in most cases, far more readily than downward to rear brood, after one body is fairly well filled.

THE ASPINWALL HIVE A NOVELTY.

In the March number I was interested in the Aspinwall hive, though I expect it will be nothing more than a novelty, as we must soon control swarming with as little labor, in any common hive.

Page 79. Evidently Mr. Chapman has not grasped the possibilities of the out-yard plan. Some of the Chapman methods are totally inapplicable to some other men and other conditions, as are some of my methods, no doubt. Mr. Chapman insists on the great value of the old method of "tiering up." Here, the Dudleys, with their 400 colonies in the home yard, all run for comb honey, do not practice it. The empty super is put on top. I seldom practice it in raising comb honey, and for extracted I practice it only as I have time. *Perhaps* there may be a *little* less tendency to swarm by putting the empty super next to the brood-nest, but I have not seen the proof of it. Some of Utah's best bee-keepers put the empty super on top; so does the veteran Doolittle. Therefore, Mr. Chapman's "grandest truth" is debatable.

Page 81. I like to use excluders after the flow is on, but as we have a ventilator (1½ inch-hole) in the front end of our extracting supers, the bees take a short cut to the supers and some pollen is often stored there, but it does no harm that I can see.

THE OLMSTEAD METHOD.

Page 104, April. What shall we say of the "Olmstead method" of pulling out a comb through a hole in the back of the

hive to detect swarm-preparations? Unreliable. Better treat the colonies and have done with swarming. His method of rearing and mating a queen in the same hive before the flow—I think that ordinarily the bees will destroy the virgin before she mates unless wire-cloth is used instead of queen-excluding zinc. Also it's too fussy. He intends to kill the old queen and allow the young one to be the new mother of the colony, thinking this sufficient to control swarming. Here is his vital error.

Page 107. Mr. Gill's recommendation to "keep bees, queens and sections all together" is grand. I will add, keep the brood and emerging bees with the above trio, and success is assured.

Page 110-111. Mrs. Frey, and a host of others, may find her problems solved in the "Dudley Tube" plan which I am describing for the "Review" for use in the production of comb honey. I only hope that the method proves as successful with others as it has here.

DARK COLOR IN SPRING PROTECTION.

In the May "Review," page 139, I think that you will find that oiled paper is not to be compared to tarred or other black or very dark colored paper for spring protection. Half the value of such protection is in the *color* which absorbs so much heat from the sun.

As an occasion *may* arise when a distant yard needs feeding, I'll tell you how we fed 11 colonies in one of our yards last spring. We took sugar, a spray pump and a big tub to the yard. We mixed the feed, then filled the combs by spraying the feed into them with the pump. A super of combs partly full of feed was put under each light colony.

CLEANING GASOLINE AND KEROSENE CANS.

Page 152. You are mistaken in thinking that gasoline cans must be thoroughly cleaned before filling them with honey. Gasoline is, I think, wholly volatile, and I know from using hundreds of such cans that it is only necessary that they be clean of everything else than gasoline,

rinsed so no dust adheres to the tin, as the gasoline all evaporates if the cans are not used very soon after emptying the gasoline. But *kerosene* or *coal-oil* cans are so difficult to clean that we never use them, as we can get plenty of gasoline cans. A lady tells me that sour milk will clean kerosene cans perfectly, while friend Remington cleans them so they are clean, with lye, etc.

The July Review opens with one of your nice pictures that your readers so appreciate. The Review apiary there shown may well cause some of us to improve the appearance of our own yards. I must admit that our own yards have usually presented such a hit or miss appearance that I have never felt like sending in a photo for publication.

Page 202. Mr. Greiner says that "Horizontal wiring does not prevent sagging." "The fact is the wires don't do the business, now do they?" Just amend that to read "horizontal wiring does not *always* prevent sagging." The wires have at *least* a tendency "to do the business." I know that I get a better average of combs since I use three wires than I did when I used only two, but some of the friends will insist on vertical wiring.

In extremely hot weather the wires certainly "do not do the business."

Page 239. One reason that bees are inclined to fill tin rabbits with propolis is, I think, because there is only a scant bee space under the top-bar projection. I shall try a $\frac{3}{8}$ space—a tin rabbit projecting upward $\frac{3}{8}$ inch which I think will do away with all trouble, besides making it much easier to take hold of the top-bar projections to handle the frames.

GETTING COMBS CLEANED UP AFTER EXTRACTING.

Page 280. To get combs cleaned up after extracting is over, I now prefer to pile the supers with combs as high as a man can reach on colonies fairly strong but not heavy with honey. Have a cloth over the brood nest, turned back at the corner. This avoids excitement in the yard and adds to the winter stores of colonies that need it.

Page 282. "Selling honey at fairs." Evidently your eastern fairs are more accommodating about such matters than are our fairs here. If you sell anything at *our* fairs, you must buy your space at so much a front foot, if any space is available.

MERIDIAN, Idaho, Aug. 7, 1907.

Editorial

A Weak Colony in the fall is usually a dead colony in the spring.

After December, the price of the Review will be \$1.10 to Canadian subscribers.

The Far-Western Bee-Keeper did not receive the support necessary to its existence. Without it, Bro. Horn found the climbing too steep, and the Far-Western was turned over to the California Cultivator.

A New Contributor, who is to write a series of articles for the Review, will make his initial bow next month.

Saginaw is the city where the Michigan State Convention of bee-keepers will be held sometime in December—exact date not yet fixed.

Canadian Bee Journal has been sold to the Hurley Printing Co., of Brantford, Ontario, and Mr. C. J. Craig has severed his connection with the paper.

Gravel ought to be fully as good in which to build a bee cellar as in the case with sand. Gravel is really very coarse sand. This is in reply to an inquiry.

Concentrate Your Energies.

How often in my travels about the country do I meet men who have failed, or met with very moderate success, because they have diffused their energies over too many subjects. So often do I hear them say that they *might* have succeeded in a certain undertaking, but they had to neglect it at a certain time to look after some other matter. Better not have the "other matter;" better have no more business than can be looked after thoroughly and attended to properly. There is more profit and comfort.

Take Good Care of Yourself.

Some men take better care of their team than of themselves. The horses are fed and watered with regularity and care, thoroughly groomed and "bedded down;" but their owner will overwork himself, overeat, or eat irregularly, neglect to bathe, and perhaps abuse himself in other ways. Nothing pays better than to take good care of these bodies of ours— to feed, clothe, water, rest and "groom" them as carefully as some men do their team. Nothing adds more to the pleasure of living than does the buoyancy, animation, and vim that permeates the healthy, well-cared-for body.

"Behind Time," is the cause of many failures. On this point I recently saw quite a forcible "cartoon," if such it might be called. It was in "Ambition," a monthly journal published by the International Correspondence School of Scranton, Pennsylvania. A young man, grip in hand, and perspiration dripping from his face, was rushing along the platform of a railroad station, while, in the distance, a train could be seen pulling out, the steam from the smoke stack curling around in

such fantastic shapes as to spell the word "Opportunity." The title under the picture read: "Better be able to say 'Here she comes,' than, 'There she goes.'"

Bee-keeping is an occupation in which a crop of honey may be lost by being a little behind hand.

Magnify Your Calling.

Some good man has admonished us to "magnify our calling." I certainly love to meet a man who is proud of his profession—who believes, and feels, and acts, as though there were no other calling superior to his own. Others are always "quarreling with their bread and butter," belittling their business, and wishing they had something better to do. As for myself, I have always been proud of my profession. Even if dressed in my working clothes, and mounted on a load of hives or honey, I happen to meet some lawyer or doctor, or other well-dressed acquaintance, I hold my head just as high, and feel just as much pride in my position as my friend feels, or ought to feel, in his.

The National Convention will be held October 30 and 31, in the Audience room of the Department of Public Instruction, Capitol Building, Harrisburg, Pennsylvania. There will also be a room nearby, in the same building, where supplies may be placed on exhibition. Headquarters will be at the United States Hotel, where there is a writing room, committee room and parlor. The rates will be \$1.50 and \$1.25 per day, American plan. All persons will be well-cared for, and the board good and substantial. There are hotels of higher price, but there are so many excursions to Harrisburg, that it is impossible to secure special rates from the highest class hotels. Pennsylvania, New York and Ohio are all great honey producing States, and the bee-keepers living within their borders can reach Harrisburg at little expense. Many who attend can take advantage of the excursion rates to

the Jamestown Exposition. Let me say, confidentially, that I expect there will be one very enjoyable little incident not down on the programme.

Articles Wanted.

The Review would be glad to examine, with a view to their purchase, articles that would be helpful to practical bee-keepers. It is not that the Review has run short of material, that this request is made, but because it wishes the best correspondents that it is possible to secure, and takes this method of letting it be known. It would especially like articles on the production of comb honey. If the information can't be crowded into one article, then write two, or three, or even half a dozen; in fact, a series on this subject would be particularly desirable. Don't hesitate to write because of inexperience in that line—a new writer sometimes proves a treasure, while an old writer's articles may be "twicetold tales." If you have had experience, or possess knowledge, the telling of which may help your brother bee-keeper, send in an article. If used, it will be paid for, generously.

Superseding Queens.

None of the arguments yet advanced have convinced me of the profitableness of superseding queens of a certain age, regardless of their condition or performances. If a queen does not come up to the desired standard, and the bees show no disposition to supersede her, I would take a hand at it myself, but I greatly doubt the advisability of superseding a queen simply on account of her age. It is quite probably that an apiary with all young queens might furnish more surplus than one where the queens are of all ages, but I am inclined to agree with my friends Taylor and Townsend that the time required in rearing and introducing extra queens each year might better be employed in caring for more bees. If the locality is overstocked, then start another apiary. A few colonies may turn up

queenless in the spring, or fail to come up to the proper standard, but the hives and combs are left, and, if we will simply keep a few more bees, we will reap an equally great harvest, without all of this extra labor.

Beware How You Abandon Comb Honey Production.

The tendency of the times is towards the establishing of out-apiaries and the production of extracted honey. To a certain extent this is going to lessen the production of comb honey, and raise the price. This commodity seems destined to become more than ever a fancy article of trade, with a correspondingly fancy price; and men already living in a locality well adapted to its production, and equipped for the business, better think twice before they abandon it. It ought not to be forgotten, however, that while the question of price is important, it is not the only consideration. There are *natural* conditions, such as the character of the honey and the flow, the kind of weather that usually prevails, the distance and kinds of markets, that all have a bearing. As a rule, out-yards are more easily managed for extracted honey, but they *can* be run successfully for comb honey, and the man who is an expert in its production, better stick to it.

Producing Both Comb and Extracted Honey on the Same Hive.

One drawback to the production of comb honey is the disinclination of the bees to begin work in the supers at the opening of the harvest, and another is the number of unfinished sections at the close of the season. Both of these can be overcome if the bee-keeper produces both comb and extracted honey. Begin the season with an extracting super on each hive; when more room is needed, put a super of sections filled with foundation underneath the extracting super. Keep adding comb honey supers next the brood nest, and removing the finished honey at

the top, until the height of the season has passed, when an extracting super may be given on top.

By this management there is no difficulty in getting the bees at work in the supers, and the number of unfinished sections at the end of the season will be exceedingly small. There will be extracting supers at the beginning and the end, but the middle of the flow, with bees and harvest at their best, will be solid, uniform, finished sections of honey. With the prospective prices for comb honey, this plan appeals to me very strongly; in fact, I am tempted to give it a trial, on a small scale, the coming year.

Beware of the Force of Habit.

There is an old and truthful saying that man is a bundle of habits. Habit binds us with chains of steel. I have seen old couples who began life poor, but now possessed of thousands of dollars, deny themselves even the comforts of life, to say nothing of the luxuries, because the saving-habit, acquired through years of toil and economy, had them firmly in its clutches.

You might not think it, but I had quite a struggle to break up that very habit. I do not mean to intimate that I am now rich, far from it, but there is no longer any necessity to practice some of the petty economies of my early married life; in fact, some things that were then economies would now be the opposite. In those days I most emphatically had more time than money, and seldom spent money for anything that I could make or do myself; now it is often more profitable to buy an article than to make it—to hire work done than to do it myself. But it was hard work to break up those old habits; in fact, I caught myself just in time, before they had become too firmly fixed. I try to hold myself open to conviction; to be ready to adopt new methods; to avoid getting into a rut; and not allow habit to get such a firm hold upon me that I can't break away if I think best.

As I close this item, my mind goes back

in reminiscent mood to those economical days of long ago, and I hope I may be pardoned for drawing one little picture that hangs in the halls of my memory. My wife and I greatly enjoyed my reading stories aloud to her, and, the first winter after we were married, I wanted to subscribe for the New York Ledger, but felt that we could not afford to spare the \$3.00. Finally, I started in to save the money. When I went to town I carried my dinner in my pocket and went down to the railroad station and ate it there playing I was a traveler. I remember walking five miles one day instead of riding on the train, and thus saved 15 cents. Some way my brother Elmer found out what I was doing, and, conspiring with my wife, found out how much I had saved, then furnished the necessary balance, and later I was surprised to begin receiving copies of the Ledger.

Now for the picture: A winter's evening; I am seated in the big rocking chair; at my right the wood-box piled high with beech and maple; in front the kitchen stove with the oven door swung back for a foot-rest; at the left the little table with shining lamp; in front of the stove, in a low rocker, sits the bride of a few months, knitting striped mittens for the market, and listening to the stories that I tried to read in my very best manner.

A few more words and I am done. In those days I was looking forward to how much comfort I would take when I had more money. My income now is ten times greater, and yet I have found nothing in life sweeter than those dear old days.

Specialty Not Best For Every One.

While the Review believes in and advocates specialty, it recognizes the fact that not every bee-keeper is in position to take advantage of it. To illustrate: A letter was recently received that read something as follows:

You write so convincingly of specialty that I am sometimes almost tempted to adopt it, but I have a family of five chil-

dren to support, and I dare not take the risk of abandoning my regular occupation for that of bee-keeping as my sole occupation. At present I have only 12 colonies.

This man would be the last one that the Review would advise to engage in bee-keeping as a specialty. It would be almost as sensible to advise him to engage in the practice of medicine. A man whose experience is limited to what he has acquired in a year or two with only 12 colonies of bees is in no position to go into the business as a specialist. Bee-keeping is a profession that must be learned, the same as any other, before it can be followed extensively and exclusively. The men whom I advise to make of bee-keeping an exclusive business are those who have learned it from A to Z, but continue, year after year, to fuss along with a single apiary of 75 or 100 colonies, lacking the confidence, or the "nerve," to drop some other business that is holding them back, and double their profits by enlarging their bee business to the extent of their abilities.

Almost an Accident.

Although I have hauled hundreds of colonies of bees with teams, and had horses around bees time and again, I never had an accident, nor came any where near it, until this summer after the close of the harvest. I have a little apiary, of about 40 colonies, six miles out of Flint. It was worked for increase, but the bees got a little the start of me, and I was compelled to put on a few upper stories. I went out there with a horse and light spring wagon, and some bee escapes. A few of the supers were free from brood, and I put the escapes under them first. In the others, when I found any brood, I exchanged it for frames of honey taken from the outside of the brood nest in the lower story. When my work was completed, the bees had gone down out of the supers under which I had first placed the escapes, so I loaded half a dozen of the supers into the wagon, tying a paper over

the top of each hive to keep out the bees. The horse, in the meantime, having been unhitched and tied some distance away behind some bushes.

After the honey was in the wagon I sat down in the shade to eat a lunch, and when I returned there was quite a swarm of bees around the wagon they had found some cracks in the bottom of the wagon. I saw that I must get the wagon away at once. The horse had been used around bees considerably the past two years without showing any great fear of them, and I anticipated no great trouble in hitching up quickly and driving away. If the bees had remained around the honey there would have been no trouble, but the moment the horse was brought up, they left the wagon and fairly swarmed, in a sort of inquisitive way, all around the horse. They did not sting, nor threaten to sting, but the horse went right "up in the air," literally and figuratively. I clung to his head, but he struck at me and shook me for all the world as a big dog shakes a woodchuck. How I retained my hold, I don't know. (Why *will* a man cling to a horse in such cases?) The horse next tried to lie down, but I finally got him started up the lane on the run, I still clinging to his head. Forty rods away we ran into the barn yard, where I tied him to a post, thanking my lucky stars that I had saved the horse and myself.

The next question was what to do with the honey. Of course, I could have stacked it up, with a cover on the bottom and a bee escape on top, and come for it after dark, but that would make an extra trip. Finally, it occurred to me to try hauling the wagon *myself*. It required my utmost strength, but I *could* move it, and eventually pulled it down the lane and into the barn, where I removed the paper from the hives and allowed the bees to go home. The horse was then brought in and hitched up, and I drove home in thankful, triumphant, but somewhat thoughtful mood.

Where did I make a mistake? In not

noticing the cracks in the bottom of the wagon. How about trying to hitch up with a lot of bees around the wagon? Well, if the horse had been a strange horse, or one known to be afraid of bees, that would have been a mistake, but,

with one accustomed to them, and not afraid of them, I deemed it safe. I think the trouble arose from such a lot of bees swarming around the horse so suddenly. So far as I know the horse did not receive a single sting—it was simply frightened.

EXTRACTED DEPARTMENT.

STAYING AT HOME

— — —

It is Neither Beneficial Nor Commendable
if Carried to Excess.

— — —

I doubt if many of the Review readers remain always at home as a matter of choice: it is more habit than anything else. If one stays at home always it is difficult to avoid falling into a rut. There is a stimulus, a rousing of the faculties, from getting out and seeing things; in fact, well, let me quote a recent editorial appearing in that most excellent journal, *The Youth's Companion*. It reads as follows:—

"I never was a hand to go gawping round!" contemptuously exclaimed an old woman who boasted of never having seen a railway-train or a trolley-car or any town but her own. The generation of stay-at-homes in the country is perhaps passing away—the women,—they were chiefly women,—who prided themselves on their self-imprisonment on farm or in village as a virtue, serving to demonstrate their devotion to home and children and duty.

There is a class of men in the business world who have the same point of view in regard to the object of life. Such a one, dying at the age of eighty-eight, left a record of fifty-five years as the head of a banking-house, during which he had been absent from his desk but two days and those were accounted for by a sprained ankle. No vacation, no travel, no day of summer leisure with wife and children—fifty-five years of steady, unswerving routine!

There is something impressive in the story of a lifetime of persistent toil. But there is another point of view which deserves respect. The gad-about may be a

useless member of society; but the stay-at-home is likely to be a narrow one.

We find ourselves on this little planet, with its oceans and mountains and mighty rivers and wide prairies. We know not whence we came, nor if we shall ever pass this way again. Surely we may do our task better in our own appointed place if we look about the world, feed our minds with the glories of nature, and discover how men and women before us have lived their lives, and embodied their aspirations in the great arts of building and painting and sculpture.

The wheat-field and the ledger and the cooking-stove are facts of human life; but so are the Cologne Cathedral, the Sistine Madonna, the Canadian Rockies, and the Valley of the Yellowstone.

— — —

TREATMENT OF FOUL BROOD

— — —

The Only Effectual Method That Can Be
Employed in the Fall.

— — —

As a rule the only time that foul broody colonies can be successfully treated is during a honey flow, but there is one method that may be used very effectually, even late in the fall; in fact, that is the only time it can be used. Mr. McEvoy, of Ontario, has an excellent article in a late *Canadian Bee Journal* on the management and cure of foul brood, and in that article he gives this late, fall treatment. It is as follows:—

Where you find the disease in a few good colonies after all honey gathering is over, do not tinker or fuss with these in any way until an evening in October. Then go to the diseased colonies and take out every comb and put six combs of sealed or capped stores in their place,

taken from sound colonies, and on each side of these all-capped combs place a division board. This will put these colonies in first-class order for winter with little or no bother at all, and the disease crowded clean out at the same time. But some say that the disease cannot be driven out so simply in the fall by taking away the diseased combs and giving the bees six combs that are capped all over right down to the bottom of the frames. It can and does cure every time when properly done, and if you will stop to think you will see quite plainly that the bees must keep the diseased honey they took out of the old combs until they consume it, as they cannot find any place in all capped combs to put it, and that will end the disease at once. Many bee-keepers will no doubt say that this fall method of treatment will not work in their apiaries at all, because they would not have enough of the all capped combs to spare from the sound colonies, even if they could find some all sealed. Very true; but you can very easily secure abundance of all capped combs by putting Miller feeders on your sound colonies in the evenings in September, and feeding these colonies all the sugar syrup you can get them to take. Then in October each of these fed colonies can spare the two outside combs, which will be nicely capped all over right down to the bottom of the frames, and with these combs you will be provided with plenty of good stores to carry out my fall method of treatment. I finished the curing of my own apiary in the fall of 1875 by this sealed comb treatment. All of my methods of treatment are of my own working out, and none of them ever failed when properly carried out.

Empty hives that have had foul brood in do not need disinfecting in any way.

In treating diseased colonies never starve the bees, because it unfits them for business and makes them thin, lean and poor, and is also hard on the queens. I never starved any bees, but always tried to see how fat I could make them while treating them by feeding plenty of sugar syrup when the bees were not gathering honey.

If you have nice white combs that are clean and dry, and that *never had any brood in them*, do not destroy one of these, as they are perfectly safe to use on any colony of bees just as they are, and are very valuable to any bee-keeper. I have always saved this class of combs for every bee-keeper. I have always advised bee-keepers to convert into wax all old combs that ever had *one cell* of foul

brood in them, and the only article that will take all the wax out of the old combs is a good wax press. As these will pay for themselves many times over their cost, I urge the bee-keepers everywhere to buy one.

PLURALITY OF QUEENS.

Can the Keeping of Two or More Queens in One Colony be Made a Practical Success?

For several months there have been hints in the journals that Mr. E. W. Alexander was making a success of having two or more laying queens in the same colony. We all know that when an old queen is being superseded, it is not an unusual thing to find the old queen and her daughter laying side by side. Eventually, the old queen disappears. Aside from this it is not usual to find two laying queens presiding over the same brood nest.

An after-swarm is often accompanied by a plurality of queens, but only one remains as mother of the colony. Two or more swarms, each accompanied by a laying queen, sometimes unite in one cluster, and are hived together, but all except one of the queens soon disappear. I have often thought that it might be possible to introduce another queen to a colony already possessed of a queen, but I have felt certain that one of the queens would soon disappear. It seems that Mr. Alexander has been successful in introducing *several* queens to one colony. He describes the plan in *Gleanings*, and here is how he does it:—

First, prepare a small box, about five or six inches square, by boring a one-half-inch hole in one end. This you will for the present close, then remove a part of its two sides and cover with wire cloth so as to ventilate it well. This we call our introducing-box. Take this box and a common queen-cage to the colony to which you wish to introduce your choice queen, or several of them, in fact, remove its combs and put its queen, without any bees, into the queen-cage you have. While doing this shake about a pint of

bees of the colony into the introducing-box. Close it and take all their combs from the colony. These can be placed on top of almost any hive until next day. The hive now made broodless, fill about half full of combs containing some honey *but no brood*. Leave the colony alone until about sundown, after which it will show distress over the loss of its queen and brood. Now take the box of bees to the honey-house, and at the same time the queens but don't set them near each other. The bees in the little box will soon miss their queen and have lots of trouble.

After they have been confined about five hours prepare some warm thin honey, placing it in a dish so that, by laying the box on one side, the bees can easily reach the honey through the wire cloth, but can not disturb themselves with it. Leave them the way until you are sure that every bee in the box is as full of honey as it can be, then give them a little shake and remove the cover from the hole in the end of the box (remember it is about five hours since they were confined in the box), and let run in any number of queens you wish, including their own mother. Now return them to their dish of honey so they can help themselves to all they can eat until about sundown; then take this introducing-box with its bees and queens to the hive from which you took the bees and their queen in the morning; set them to one side and feed the colony all you can induce it to eat. Remove some of its combs and pour in some of the honey you have been feeding to the bees in the box. Shake some of this honey out of its combs on these bees, so every one will soon be full. Now remove the cover of the introducing-box and set the box in the hive alongside the combs. Close up the top of the hive, and in the morning all the bees and queens will be clustered on the combs, and some of the queens will have commenced to lay. You can now give them the brood you took away from them the day before, or let them fill their combs with eggs, which five queens will do in three or four days. That is all there is to it.

You now have the colony all together with their brood and their mother-queen, and as many other queens as you care to have in one colony. There has not been a queen balled or injured in any way.

We all know that many things along the line of introducing queens can be done with weak colonies during a good flow of nectar that can not be done with a strong colony in a honey-bearing; and for that reason we tried nearly all our experiments on the strongest colonies we had during a

scant flow of nectar, and usually with colonies that had stung several queens during our experiments. There seems to have been almost no end to the number of queens we sacrificed in perfecting this undertaking—more so because we picked out the crossset and worst-dispositioned bees we had, to experiment on. But as these queens died to save the rest, their lives were not lost in vain.

Now why is this method a success? First, because the bees have been a few hours without their queen and brood; next, a small part of their colony was confined in a box and filled with honey for several hours before the strange queens were given them; then those bees and these queens were shut up long enough together to become all of the same odor before they were given to the colony.

There are some things in this method that must not be overlooked. You first confine enough bees in the introducing-box to give to the queens you introduce the same scent as the colony is, to which you intend to put them; then the whole colony has been queenless and broodless for a few hours, and you have fed them in the box all they could hold before giving them these queens, and you have also fed the colony all they could eat before they received the queens and their bees. I find bees, like men, are better natured when their stomachs are full.

If these instructions are carried out carefully you will never lose a queen in introducing, and the colony will be queenless less than twelve hours. Certainly this is a quicker and safer way than the candy method, which takes three or four days, and is often followed with a loss of ten per cent or more.

When we take queens from our nuclei or full colonies to introduce in this way we put several into a large cage, and have never had one stung by another. We are careful not to put any worker bees in with them. You may think that, to remove the plug from the hole in the box and let the bees leave it during the night would be better than to remove the top of the box; but don't do it. Some of the bees and queens will stay in the box until the next day; then when they come out and join the colony the bees are all empty of the honey you fed them, and they have some queens that joined them at first, and these additional queens might make trouble.

Be careful in following these instructions, and you will not lose one queen in a hundred; but it will not do to omit any part.

Now as to the advantages derived from this plurality of queens in a hive. First,

we soon have a hive packed with brood; next, we have never had a colony with two or more laying queens prepare to swarm. Then it is the nicest way imaginable to supersede inferior queens. You can have the choice queen you wish to keep in the colony some time before removing the old queen, and both will be laying in harmony together. Sometimes we find a colony that has lost its queen, and its combs are so full of pollen that they appear almost worthless. When this is the case, just run in at the top of the hive, after a few puffs of smoke, two or three laying queens and you will be surprised to see how soon these combs will be filled with larvae and capped brood; and shortly after its brood begins to hatch, these colonies will be the strongest in the apiary, and I can not see any reason why you could not winter a large number of queens that were reared late in the fall, and have them ready for your early increase; or for sale much earlier than they could possibly be reared in the spring. If surplus queens can be kept in full colonies during the winter season as safely as during the summer, then certainly another great forward step will have been taken in modern bee-keeping.

I expect to try wintering some surplus queens in full colonies this coming winter. In fact, I can already see many advantages that this new departure from the old methods will give us. We should naturally think that, with several queens in a colony, they would separate to different parts of the hive, and start a brood-nest alone by themselves; but, not so. They all seem to act together, commencing in the central part of the hive, and spread their eggs naturally toward the outside. A short time ago I opened a hive containing five queens. Four were on one comb, three on one side, and two in the act of laying. Again, I opened another hive containing four queens, the fourth day after they were introduced, and 7 of the 9 combs in the hive were filled with eggs as full as I ever saw combs filled.

After reading the foregoing, I sat down to the type writer, and was about to write out what I thought about the scheme, when my eye was caught by another article in the same issue of *Gleanings*. It was written by Mr. J. E. Chambers, of Texas, and expresses my views so exactly that I am saved from the trouble of writing many criticisms. Mr. Chambers says:

I have read with much interest, the ar-

ticle of Mr. Alexander, on the practicability of keeping a plurality of queens in one hive, page 473 in the April 1st issue, also the letter from Mr. Pressler, page 617, in the May 1st issue, and J. A. Green's note on the following page. While I do not wish to say that Mr. Alexander is entirely wrong about this matter, I will go to the extent of saying that, with most bee-keepers, it would be impractical if not impossible; for, just as Mr. Green says, some colonies will unite without the least trouble, while others will fight to the end, notwithstanding the employment of heroic means to subdue them. Like Mr. Green, I am not the least in doubt about laying queens killing each other, though they do not always do so. I know that it is entirely practical to use two queens in each hive in order to get colonies strong enough for a given honey-flow, when otherwise it would not be possible to bring them up to the desired strength; but I have so far found it impossible to do so without the use of means to keep them separate. If there is any thing of which I am certain, it is this: That a plurality of queens in any hive except under certain well-known conditions is not in accord with the known instinct of bees; and as I do not consider that the bee is possessed of any intelligent capacity for improvement, I do not feel very sure that they will ever be brought to act in accord with man's desires when their own instinct goes counter to such desires. I am aware of the fact that, under certain conditions, bees accept a plurality of queens; but even under these very unusual conditions the vast majority of colonies refuse to have more than one queen; and if it were at all natural for them to have all of these queens, I am positive that, during the many years bees have been handled by intelligent men, there would have been many colonies found having a plurality of queens, thus indicating that such was a primary instinct of bee nature. No one need come forward telling me that such has been the case when queens were failing, for I am perfectly aware of the fact; but I am speaking of perfectly normal conditions.

I have been using two queens to build colonies up faster than was possible with one, especially when a flow was near at hand and the time not sufficiently long for the best success under the old practice; but as I said before, I have had no success in the way Mr. Alexander mentions. Some colonies operated in this way last year gave 180 lbs. of honey during fourteen day of sumac bloom, while the ones not handled in this way gave an average of only 50 lbs. I am not trying to take

away any of the credit that belongs to Mr. Alexander; but, while a very great bee-keeper, he is fallible just as common men, and it is no more a mistake for him to be mistaken than for any other man. All but fools make mistakes; and while entirely successful in his own locality and practice, I think Mr. Alexander is away off for most of us, and I am basing my conclusions on several years' experiments on or along this very line. I am no novice in such experiments, I can assure you.

Mr. Alexander is an old man with whitened locks, bright blue eyes, and the enthusiasm of youth. He is a successful bee-keeper, and I like him, and I hope that I may live to some day be just such an old man as he is. It is much to his credit that he has tackled this difficult problem, and made a success of it to the extent that he has. I have no doubt that he has introduced queens exactly as he says, and that they have stayed and layed for some length of time, but I agree with friend Chambers in thinking that this plan will not prove a practical success with the great mass of bee-keepers, or even with specialists. I would be the last one to wish to throw cold water upon any new plan or scheme, but, unless the new plan can stand the criticism, and the actual use of the work-a-day world, it will prove of no value.

There are one or two points not touched upon that come to my mind: It will be a lot of work to rear and introduce queens as friend Alexander has done, and it seems to me that this time might be more profitably employed in keeping more bees in a normal manner. There seems to be a striving among many bee-keepers to see how much honey *per colony* they can secure. One man will tell how much he secured with some special method that he employed, while, with the ordinary method, he secured only a moderate amount—much less than with the special plan. It is not always the largest yield per colony that is the most profitable, but it seems to be very difficult to get the ordinary bee-keeper to comprehend this. The time spent in trying to maintain a plurality of queens in an apiary, might possibly be

more profitably employed in managing another apiary. This is taking it for granted that the plurality plan will prove a success—something that I greatly doubt.

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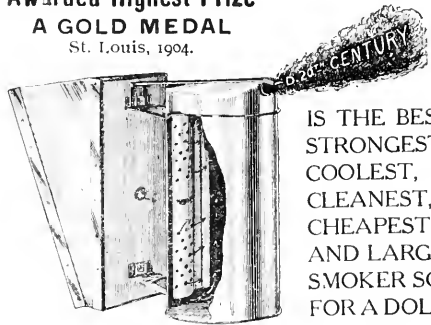
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W. Z. HUTCHINSON,
FLINT, MICH.

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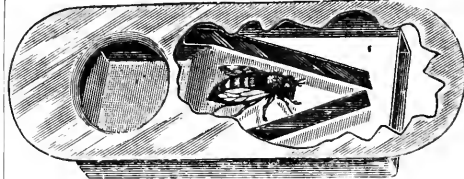
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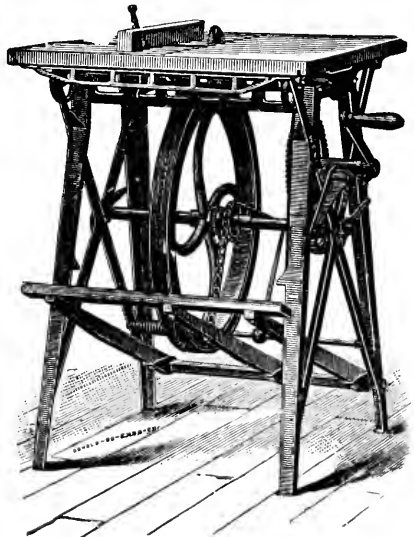
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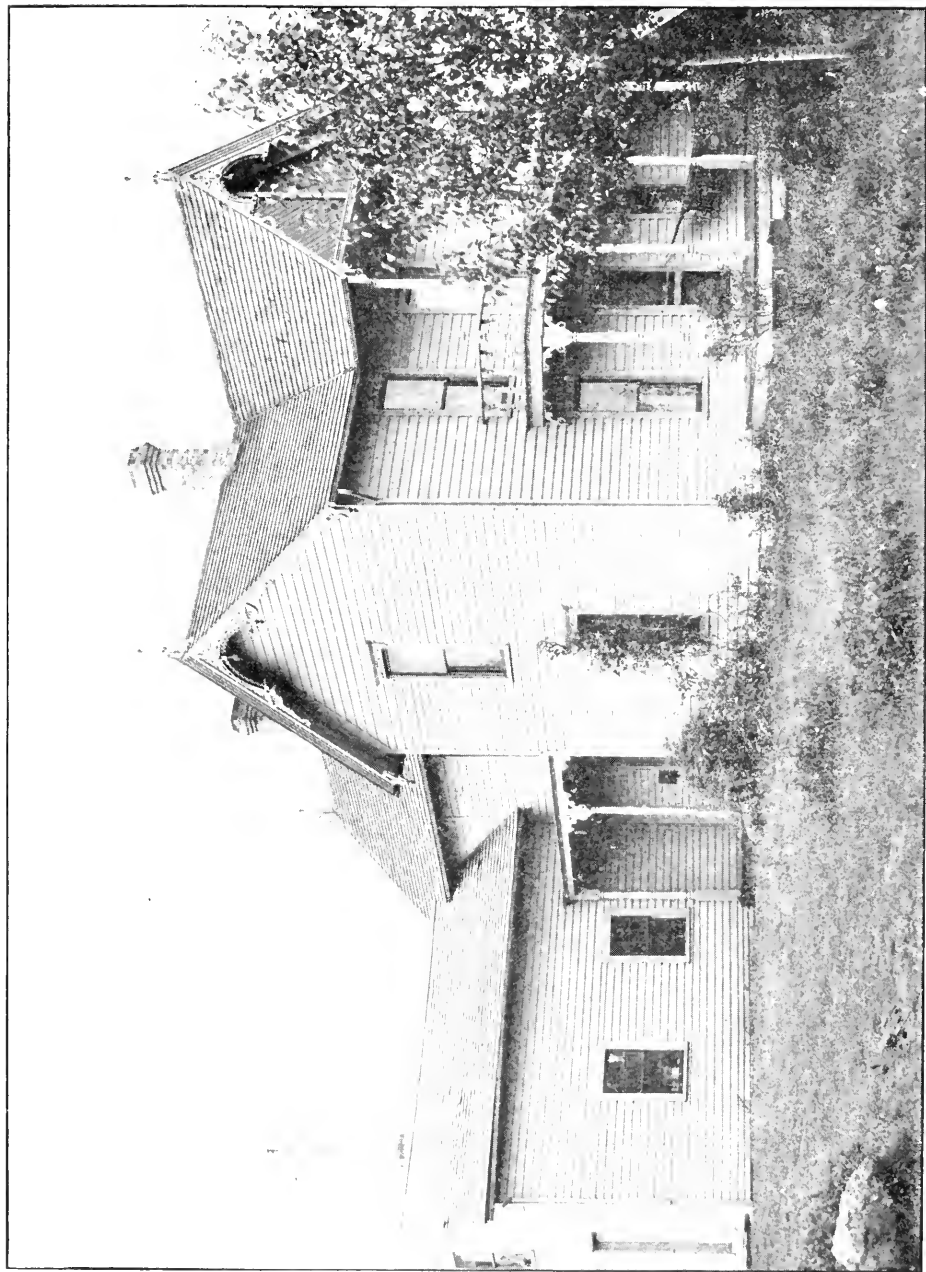
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W. Z. HUTCHINSON, EDITOR AND PUBLISHER.

VOL. XX. FLINT, MICHIGAN, NOV. 15, 1907. NO. 11

The Modest Beginning of a Prosperous Business.

ELIAS E. COVEYOU.

THE modest home shown upon the opposite page is the fruit of a beginning in bee-keeping that was still more modest.

As they say in stories, "once upon a time," one hot day in July, as my schoolmates and myself were sitting on a grassy bank back of the old school house, eating our dinners, one of the

boys took out of his pail a piece of honey that he had for his dinner. How nice, and white, it did look! I was of too independent a nature to ask him for a taste of it, but it did set my mind to wondering how the little bees could make

anything so sweet and delicious looking. Henceforth, there was an added enjoyment in listening to the hum of the bees, and watching them as they flitted from flower to flower in my father's clover or buckwheat fields.

One day in June, in 1893, as father and we boys stood looking at the bees at work on one of our fields of alsike, we decided to visit the nearest bee-keeper, about four miles away, and try and get a colony of bees. Father and my eldest brother arrived at home with them late in the evening, and placed them upon the stand that I had prepared. I was up early the next morning to see them start out and return loaded, and, about nine o'clock, armed with an old Clark smoker that was secured with the bees, I went forth, feeling much like a soldier going into battle, but determined to be master of the situation.

This colony was increased to four, and 12 more were bought in August, all of



which we succeeded in wintering without loss. The following year these were increased to 44 colonies. The next year the number went up to 88 colonies, and it was three years before we had a loss of a single colony or queen in wintering. At the end of five years we had 200 colonies.

I remained at home, and ran the apiary for both comb and extracted honey, until I was 23 years old, when I started out for myself with nothing except my bare hands and my experience. I began operations by going in debt for 44 colonies, moving them to Boyne Falls, and starting what is now my Charlevoix County yard. These bees produced a little over 5,000 pounds of honey that year. I bought 87 more colonies that fall, built my first bee cellar, wintered the bees successfully, and, the following year, secured 11,000 pounds of honey. I have been in business for myself six years, and now have three apiaries, a wife and two boys. My headquarters are at Petoskey; and my nearest apiary is 20 miles away. The honey is all shipped home where it is bottled for the retail trade, along with the thousands of pounds that I buy each year. The wing at the left in the picture is devoted to the bottling of honey. Besides this, there is another wing back of this that does not show in the picture.

So much by way of introduction. Next month I will take up the description of the liquefying of honey, washing and drying of bottles, filling, labeling, packing, selling, etc. These articles will run through the winter, then, early in the spring I will take up the out door work of the apiary. This plan will make the articles more seasonable.

PETOSKEY, Mich., Nov. 4, 1907.

[I think that this much can be said of bee-keeping: That there is no other business in which a man can engage with no capital except a knowledge of the business, and make so great a success in so short a time. I recently received a letter from a well-known Western bee-keeper, which was a heart to heart talk (not for publication) in which he gave me a condensed, financial history of his bee-keeping life. He had made a success of bee-keeping, when an unfortunate venture in another line of business swept away the accumulations of his lifetime, and left him 500 dollars in debt. He then (in 1900) went back to his first love, taking bees on shares to get a start, and he has since then produced and sold \$27,000 worth of honey. I won't tell how many bees he now owns, or you might guess who he is. - EDITOR.]



Let Us Educate the People to Pay a Good Price for Honey.

W. K. MORRISON

FRIEND Hutchinson:—Either you or I hold peculiar views on the subject of honey, for, in a late issue of the Review, you state that honey is a luxury with most people, and then indicate that this is the reason why it will never command a high price. You and I have evidently

been reared in different schools of experience, for the idea that luxuries are somewhat expensive is very firmly fixed in my mind.

Now, honey is very far from being expensive at present prices. It is not nearly so dear as butter, which is not, in any

respect whatever, superior to honey as a food. Moreover, butter is easier to produce: the skill required is no greater, and the capital required is not any larger. Perhaps you will say people must have butter. That may be true in some States, but it is not very true in the South where *hog and hominy* are the staff of life. In many countries butter is practically unknown; whereas, honey is used all over the world. In my opinion, it is a mere matter of prejudice whether a certain food is a necessity or not. For example, most Americans think they must eat meat to have their strength maintained, but just as capable people, physically, exist in other parts of the world, and they eat no meat whatever, and quite a number of others eat very little.

Now, to get around to my point: It seems to me this idea that honey to sell at all must be cheap is quite firmly fixed in the minds of many bee-keepers. In my judgment, the sooner they get rid of that notion the better for the bee-keeper's trade. They should respect themselves. *Low prices cause city folks to suspect the purity of the honey.* It also induces the bee-keeper to lower the quality. It seems to me most people expect to pay a fair price for honey and they usually do.

It is the wholesalers and retailers who profit by this present state of affairs; particularly the latter. Last summer I noted the retailers in New York were asking (and getting) 30 cents for a section weighing less than a pound, while the bee-keeper wasn't getting the *half* of that.

Moreover, I believe many well-to-do city folks would pay 50 cents, or even \$1.00, for real fancy honey if they could get it. But it must be something extra good.

For years the bee-keepers of this country have had it dinned into their ears that they must reduce expenses and produce honey at low prices or go out of business. Now let us change all that, and stand up for a living price, such as other skilled

laborers get. We not only have to exhibit very considerable skill, but require quite a considerable capital as well, if we are to succeed in bee-keeping. Let us drop all talk about low prices, and adopt a very aggressive campaign of education with the avowed object of educating the American people into the belief that there is nothing like honey for lubricating the stomach. We may have to jump in and advertise the honey business by holding honey shows every fall in all our large cities, but what of that? Others do it. We do not have the terror of GLUCOSE over our heads any longer, and honey is a food which will stand any amount of praise, so there is nothing to fear, therefore, the time has come, it seems to me, to adopt a forward and aggressive policy.

If you want to see a small *army* of specialist bee-keepers spring up all over this country, just raise the price of honey a little. There would be a general toning up of the whole industry. I know this hits you, and I intend it so. I want you *to sit up and take notice* that a new era has dawned on the bee-keeping business as a *business* and not as a side-issue.

MEDINA, Ohio, Sept. 14, 1907.

[Friend Morrison, I know that luxuries are usually expensive, and when honey goes up in price, goes up too high, the common people look upon it as a luxury, and quit using it. In fact, they *usually* look upon it as something of a luxury; but, if it is cheap enough, and properly brought to their notice, they will buy it.

Friend Morrison says that the choice of a food is largely a matter of "prejudice." Perhaps *some* prejudice, but largely education and habit. We have used potatoes, butter, meat, etc., until we feel that we *must* have them. Not so with honey. I would have butter if I had to pay 50 cents a pound for it, but I wouldn't give half that for a pound of comb honey, and I presume the average person has very similar views.

But I am heart and soul with Bro. Morrison when it comes to doing all we

can in educating the public to use honey and pay a good price for it. Let us keep the price just as high as we can; let us teach the public regarding the wholesomeness, healthfulness, deliciousness and

economic food value of honey. It is all right to see how cheaply we can produce it, but there is the other end of the problem that needs looking after—selling it at as high a price as possible.—EDITOR.]



Some Advantages of Systematic Requeening.

A. C. MILLER.

IN the September issue of the Review were two articles, one from Mr. Taylor and one from Mr. Townsend, both of which bore on the policy of queen supersedure. The articles are interesting and instructive, but I believe that both gentlemen are losing money by leaving the supersedure to the bees. I base my belief on actual tests and practice extending over many years, and I have in the American Bee-Keeper advocated and urged bee-keepers to regularly requeen their colonies each year.

One little sentence in Mr. Taylor's article particularly amused me, for it shows the distrust the solely practical man has of the experimenter. It is this: "Which pays the better, financially: for the matter must be considered with reference not to those keeping a few bees from sentimental or experimental reasons, but to those keeping them for direct net cash results." Now the man keeping them for "experimental reasons" may be keeping them to experiment on "direct, net, cash results," and, furthermore, some experimenters, the result of whose labors have been of direct cash benefit to me, *have* to keep the "net cash results," in view or else give up their experiments.

Mr. Taylor truly says "The most important item of expense in the production of honey is labor," and then he proceeds to show, to his own satisfaction that yearly requeening is laborious, hence ex-

pensive, also that it costs in cash or its equivalent, labor, for the queens used. He takes the basis of 100 colonies, places the cost of queens at \$50.00, and labor, called under paid, at \$25.00. Run on the plan of leaving the requeening to the bees, he estimates the queenless, or, rather, lost colonies from queenlessness, to be five per cent. How does that figure out on a basis of net cash results? Call a colony to be a cash value of \$5.00. (We must include value of hive and combs, because when not occupied with bees it is idle capital.)^{*}

And the returns from a colony to be only fifty pounds of saleable honey at a net price of ten cents per pound, and we have a cash loss of \$25.00 or 100 per cent. on the idle capital (part idle and part lost.) That is, giving Mr. Taylor every advantage of a low estimated yield and low price, a net saving of \$50.00. But how about the grades of the surviving colonies? If I remember his writings, he has had more or less to say about overhauling and evening up his colonies before the harvest. That all costs heavily in labor, and he has forgotten to count it in. He says: "If the bees have wintered badly the queens will keep perishing in the spring just as the rejected ones would have done in the same circumstances," whereby he admits that he has to do

* All empty hives and combs are almost certain to be used long before the season is over.—EDITOR

some requeening in the expensive time of spring or else eliminate those colonies, all of which calls for labor that could have been more cheaply supplied the preceeding fall.

But Mr. Taylor's outright loss of colonies is less than other men report. Mr. Townsend reports a loss of fifteen per cent., and farther on, without giving specific numbers, tells of a lot of small colonies that called for special treatment, which means labor and lessened average yield.

I contend that much of the labor item of both of these gentlemen could have been saved by requeening their colonies at the proper season, which here is in late July. Mr. Taylor reports a loss and damage to queens in introducing which shows that he is not yet a master of that art. Mr. Hutchinson, you can give him points on it.

The cost of rearing the queens is much more than offset by having all of the colonies of the same strain and all queens of the same age. It means a uniformity of

work by the colonies which saves an immense amount of labor. It means, when combined with a wintering system fitted to the climate, that the spring overhauling is eliminated. Recently I was talking to one of Massachusetts' studious bee-keepers, and in discussing the economics of the art, he spoke of the labor necessary, and I asked him how many times he opened his colonies for inspection from the beginning of spring until he put on the supers, and he said: "It will average six times." It seems incredible that so keen a student of bee life had not found shorter cuts. When I told him that of 100 colonies I never saw the inside of most of them, except at requeening time, and not always then, he wanted to know the trick. It was solely in knowing the stock with its traits, and, as all queens in an apiary are of the same age, all colonies are so near alike that a superficial examination of work at the entrance or a glance under the frames or over them reveals all I need to know.

PROVIDENCE, R. I., Sept. 29, 1907.



Helpful Hints in Extensive Bee-Keeping.

E. D. TOWNSEND.

EDITOR Hutchinson: On page 245. August number of the Review, under the head of "Re-queening an Apiary," after describing my method of letting the bees attend to this supersedure business themselves, you say: "I can see only one weak point in his argument: Is he always sure that each location is fully stocked?" my system being to keep bees enough in each apiary to secure all of the honey in that locality, even if some of the old queens do play out during the heavy breeding season of spring

Now, I have my glasses on, and they are nicely adjusted, still I cannot see why, with the system I follow, that I'm any more lame than those who re-queen each year; as to knowing how many colonies a certain location will support.

EVEN IF LEFT TO THEMSELVES, 50 PER CENT OF THE COLONIES RE-QUEEN THEMSELVES.

Let us look at this matter a little, and by so doing we may come to some understanding on this matter. We will suppose a queen to live three years, and do the necessary work of the hive. Now,

for convenience, we will take 100 colonies of bees; this number being easy to figure on. These bees, one year ago, were in a normal condition; that is, as Nature would have them, as to age of queens. Their queens would be, say, from 30 days to three years old. One year from now there would be 33, old, aged queens dead; supposing them all to winter. But it so happens, here in the north, that we have some winter losses each season; then some queens are killed accidentally; so I think we can calculate on 17 more dying; otherwise than natural deaths. This being the case, we will have, at the end of the first year, 50 young queens, and 50 of unknown age. Now, this will repeat itself each year; so at the opening of spring, each year, 50 of our colonies, on the let-alone plan, ought to have yearling queens; the other 50 will have two and three-year-old queens. Now, with this natural process, of one-half of our colonies providing themselves with young queens each year, it's easy to figure that we will not have very many queens that are three years old; say a dozen, or so: one-half of these will likely play out during the heavy spring breeding, during April and May; and are the ones that are noticed most, as they do not breed up a colony in time for the harvest. The others are superseded later in the season, and many times are not noticed, as these later supersedures do not usually cut much of a figure, in the amount of honey gathered, and breed up into good colonies for winter. These conclusions we have arrived at, after several seasons' observation, along these lines, and I think will be found about correct.

OVERSTOCKING CAN BE AS EASILY DETERMINED WITH ONE SYSTEM AS WITH ANOTHER.

I'm now ready to answer your question, viz.: "is he always sure that each location is fully stocked?" Just as sure as those who requeen each year; for when we decide that a given number of colonies are sufficient for a location, to secure all the honey that is profitable, we stop adding colonies to this yard.

It's quite likely, were we to go to the trouble to requeen each colony each year, 5 to 10 per cent. less colonies might do the work; but, after a long experience along this line, we have come to the conclusion that it *does not pay*.

Another point: It seems to have become an accepted fact, that all one has to do to insure a populous colony for the next season's harvest, is to put a young queen into each colony, the previous fall, and the harvest is insured.

THERE WILL BE SOME "NO ACCOUNT" COLONIES WITH ANY SYSTEM?

Now, isn't it a fact, that a certain per cent. of these young queens prove worthless. Then there are other troubles; so, one must expect to have some colonies, each season, that are not in honey gathering condition, with any system we may adopt; so if a man starts out with the expectation of having *all* his colonies strong, and in good condition for the honey flow, *every year*, he is destined to disappointment; for with the best of care and pains, there will be some colonies that will lag, and be of no account, so far as surplus honey is concerned.

ARE YOUNG BEES ANY BETTER THAN OLD FOR WINTERING?

Then one must bear in mind that colonies with young queens die in winter just about as bad as those with old queens.

This brings to mind another point: You say, friend Hutchinson, that your bees, there at Flint, did not breed up good last fall; or, in other words, you say the bees went into winter quarters weak, and came out weak this spring. If my calculations are correct, that half our bees re-queen themselves each year, your bees should have had one-half young queens; but you do not mention that half of them came through strong, and the other half weak, as they ought to, if the young queens wintered, or bred up better during spring, than old queens; you say the bees went into winter quarters weak, and came out in the same condition; so we conclude by this, that those with young queens, as well as those with old queens, suffered

the same. You might argue that most of these young queens were reared too early in the season to do good work in breeding up for winter. This brings up an important point, viz., is it necessary that we have young bees to winter, for best results? For 25 years I had bees in Clinton and Gratiot Counties; and in these locations we never had any buckwheat, or fall flow of honey; so, after the basswood flow in July, we rarely ever got enough honey to stimulate brood rearing; from the middle of July, until the bees were ready for winter, there would not be to exceed two cards of brood in each hive, at any time: still, these bees wintered just as well as they do here at Remus, where there is a fall flow, so that they breed clear up into September.

LATE BREEDING OF NO ADVANTAGE.

We have in Kalkaska and Charlevoix Counties between 400 and 500 colonies of bees; where there has been no breeding to speak of since July, just a little in two or three combs: similar to the first mentioned yards; now we know these bees will winter just as well as those that are full of young bees, like these here at Remus, where many of the colonies had 10 L. combs, containing brood, most of the time during August. The fact is, a bee's life is not figured by the number of days it lives; but by the *amount of work*, or *energy used*, is its days numbered.

During the working season of summer, a bee does not live over 45 days; but how different in winter, or the quiet season.

Some have claimed that they could keep bees alive a year, in the cellar, if everything was favorable. Be this as it may, we know that bees will live a long time, if kept quiet, so there is no loss of vitality. In the case of the colonies that breed clear up to the approach of winter, so to speak, those old nurse-bees have worked themselves nearly to death, so there are only young bees to winter. But how different with those that have done practically nothing since July; they have retained their vitality, almost as if they were in the cellar: just flying enough to

give them exercise; carrying a little water; feeding a very little brood; nothing to worry about; these are *young*, old bees, and will live many days, everything being favorable.

Let me put it a little stronger; a bee perfectly wintered, has just as many days work in her April first, as she had the previous fall; take your pencil, and do a little figuring, and see if I'm not right; if it will not be in the neighborhood of 45 days, from the time that brood rearing commences in spring, before the old bees die off; or in other words, about the regular bee life in summer.

I have said this to prove it was not necessary to have young queens, or colonies populous with young bees in the fall, to have strong colonies in spring; even if the old queens do not seem to be doing what we would like to have them do, in breeding up for winter.

Why your bees at Flint should have been few in number, when put into the cellar last fall; and why they were still weak this spring, is a conundrum with me; if you had said they were about as usual, as to strength, last fall; and wintered over in good shape; but were in poor shape when the harvest came; I could have understood perfectly why it was that they did not breed up during April and May of last spring; for this was surely the most disagreeable, and backward spring I can remember of, for bees to breed up in.

ADVANTAGES OF A TEN-FRAME HIVE.

Can it be that you were looking for mammoth colonies, on account of your changing from the eight to the 10-frame hive; and, being disappointed in not finding them any stronger than usual, you jumped at the conclusion that it was on account of the queens not laying during the latter part of summer, and early fall. I hardly think you would think thus; I'm sure there are some who think the 10-frame hive does breed up colonies that are more numerous in bees, than the 8-frame; this is the case in about one colony in ten; and this only during the heavy

breeding season of spring; and not during the latter part of summer, or early fall, when the bees to be wintered are produced. The little gained during the spring breeding, would not be enough to cause me to use a 10-frame hive, on this account. The two prime reasons with me for using the 10-frame hives in preference to the 8-frame is, first, they will bear more neglect, so to speak; or, in other words, they have two, extra combs, usually of honey; so we have less feeding to do in the fall, and less watching during spring; the fact is, we rarely ever have to look our bees over in spring, on account of lack of stores.

The second advantage the 10-frame hive has over the eight, is more surface-room on top, so we do not have to tier our upper stories so high, with our system of leaving the whole crop of honey on the hive, to the end of the season, before extracting.

One other point usually overlooked, is that bees handled during the bad weather of spring are liable to ball their queen and kill her; this happens so often, that I almost dread to open a hive during the early spring breeding season; this is more likely to happen during early spring, or very bad weather, when breeding is at the minimum.

I cannot help thinking that a part, at least, of the queens you found missing each time you looked your bees over last spring, was caused by this same handling. Let me print it in red: feed enough in the fall to last until the surplus season opens in June, then let your bees alone as much as possible during spring.

REMUS, Mich., Oct. 18, 1907.

[Only the man who writes much, knows how difficult it is to so write that it is impossible to be misunderstood. I did not mean to intimate that Mr. Townsend with his system of management would be any more handicapped than any one in determining whether or not his location was overstocked. Overstocking is one of those elusive problems so difficult to solve. If we think our location fully stocked, or overstocked, and, for *this reason*, allow

a dozen or so colonies to run down and come to naught for lack of good queens, then we lose what those colonies might have gathered, *provided*, the locality *isn't* overstocked—just we *think* it is.

I must admit, however, that I think Messrs. Taylor and Townsend have made their point, viz., that it is more profitable to keep enough more bees so that there will be what we *think* a sufficient number, even if ten or fifteen per cent. turn up queenless in the spring, than it is to rear and introduce extra queens each season.

Mr. Townsend has also misunderstood me regarding the weak colonies that I had here at Flint last spring. They were not weak in numbers the *previous autumn*. When the honey was extracted late in July, nearly every colony had on at least one upper story, most of them had on two, and a few had on *three*. Perhaps a dozen of the queens were of uncertain age; about 60 had seen two years of service, and the rest were of the previous season's rearing. All were good, populous colonies when put into the cellar, but a large proportion of them were weak in numbers in the spring. No, I was not deceived by changing from eight to ten-frame hives; in fact, one-third of the colonies were in eight-frame hives, and this weakness in numbers was not confined to either class of hives. I agree with Mr. Townsend that with any system of management there will almost always be some weak colonies in the spring, but it was the unusual proportion last spring that led me to the conclusion that lack of fall breeding was the cause. The colonies were not weakened from disease. What bees were left were just as clean, dry and healthy as it is possible for bees to come through the winter—they were simply lacking in numbers.

By the way, I had a good illustration of the difference between colonies weakened by disease, and those that were healthy but simply weak in numbers. In years past I have had colonies weakened by disease, and such colonies might just as well be dead. But these weak colonies

of healthy bees held their own, and built up just as well as the stronger colonies, only they were longer, or later, in reaching the same stage of strength.

I agree with Mr. Townsend that there is such a thing as "young, old bees," that is, bees that are old in days, but with vitality unspent; and I have believed that I would just about as soon have such bees for wintering as those hatched in

September or October, but my experience of last winter and spring staggered that belief; however, I am open to conviction.

Once more I must agree that it is better to feed a plenty in the fall, and thus avoid fussing with colonies in the spring; and, in ordinary springs, we would not have been compelled to add to the stores that we gave in the fall, but last spring was unusual. EDITOR.]



Some Vital Points in Building up a Honey Market.

M. V. FACEY.

WHILE this subject, on its face, may seem an easy one to write upon, it is, in many respects, difficult. As I write, I also realize that the capacity to excel as a bee-keeper is much more common than to excel as a dealer, and yet I may be able to give a few thoughts that will be of general value.

At the present time I have about 1,000 customers; but all my trade originated with, and is based upon, my once, local trade.

DON'T ARGUE, BUT GIVE THE PEOPLE WHAT THEY WANT.

In building up this trade I have at all times placed myself in the place of both buyer and seller. You have, first of all, to learn the tastes of your customers. If you are building up a home trade, you will, as you start out, find that one person likes basswood honey, another clover, another an amber, and a fourth buckwheat. A great many salesmen will try to persuade certain ones that their taste is a mistaken one; that such and such honey is better than the one their taste calls for. This is a great mistake. No man wants the salesman to dictate to his tastes, as he knows perfectly well that the honey he likes the best is *the best for*

him; and this is what the wise salesman should offer him. And right here I would say that the idea of cultivating the public taste for this or that kind of honey is largely a mistake. People have their tastes; they are largely fond of honey; and, instead of cultivating a taste we only have to cater to it. I find this is an art that bee-keepers learn very slowly. We are too apt to set up our own standard, and expect everybody else to adopt it because it is *ours*; and thus, in the supposed perfection of our own knowledge, we are unable to detect our own defects. We should rather, while we have an eye turned upon the public, studying its demands, have the other eye turned back upon ourselves studying *our own defects* of both trade and production.

Therefore, instead of trying to build up a trade by belittling your rival, you should learn wherein his goods excel yours, and bring your goods up to or beyond his standard. See that your honey is the best ripened, the best graded, and the best put up, and then, as you go out and sell this honey, people will appreciate it; and when you have a man's honey trade, and furnish him with such goods, he will stick by you and will even give you a

cent or two a pound more than he will give your neighbor.

Every sale should be made as though your *whole trade* depended upon that one transaction. I once bought honey of a man who kept out his inferior goods for his home trade, with the remark that it was "good enough for them." That was the opposite of what I am trying to impress upon my readers. If that man had valued his home trade, and if he cared in the least to build it up, he should have kept his very choicest honey for *it*, and, instead of a small trade at a low price he might have had a good trade at a good price that would easily have taken all his honey.

I said it was very necessary to furnish each buyer with the kind of honey his taste preferred. To do this we must learn to grade honey. This is a weak point with many bee-keepers and with some dealers. I have been offered "clover honey," by large and experienced bee-keepers, that hardly seemed to have a trace of clover in it; besides it was dark in color and strong in flavor at that. I have bought a lot of white honey and of dark honey of a dealer, wherein much of the dark honey was *whiter* than the *white*.

To hold a person's trade, we must furnish him *what he wants*. If a man is dainty in his tastes, and wants clover honey, and we furnish him honey dew a time or two, we will find he will very promptly avoid our honey quite as persistently as our satisfied customers stick by us; and, as one pleased customer will often bring a half a dozen more buyers, so one unsatisfied customer will often deter half a dozen from buying.

SALES LARGELY DEPEND UPON PUSHING THE GOODS.

We must keep our goods before our customers. A family promptly supplied will use several times as much as one that has to hunt for the goods. I know families which, when promptly supplied, will use from twenty to thirty gallons of honey per year, who otherwise do not use more than four or five gallons. Honey is

an article which is used by many people, or, perhaps, by most people, largely in proportion as it is drawn to their attention, and made easy to obtain. Its sale must be *pushed*; hence the reason store keepers often so signally fail in building up a trade. It is a luxury, but where constantly supplied it is then a necessity.

I have not found the fear of adulteration much of an obstacle in my trade. I am very particular as to the purity of my honey, and I absolutely guarantee all I sell. If anything puzzles my customers I regard it as a favor to be permitted to clear up the matter. We often sell our honey to people who know nothing about bees, and, therefore, when so many bee-keepers know so little about honey, we cannot expect them to know much, except that it is pleasant to the taste and a desirable article of food. I acquaint them with the workings of the pure food commission, and am always pleased to have any test made. Our very willingness to submit our goods to the test greatly increases confidence in their quality and purity. We should always avoid trying to tear down another's reputation in order to build up our own; and when I see this done my suspicions of the critic are always aroused and I make purchases of such people with extreme care. It certainly is no recommendation of *our* honey to say that our neighbor's is *poor*. If it *is* poor, the people soon find it out without our officious declaration, and the *suspicion we attempt to place upon him will almost invariably react upon ourselves*.

People often order honey by *kind*, ignorantly, and, as a result, get quite a different kind of honey from what they expect. In cases of this kind the dealer is under no obligation to exchange, but, in supplying family trade, it is always *wise* to do so. You should not exchange in answer to the charge of adulteration or fraud, as, to do so under these circumstances, would be to give color to the charge. You should then repel the charge and demand a test of the goods by the Pure Food Department. Have them un-

derstand that you are honest, that your goods are honest, and that you will not tolerate any false accusations. They may not have the test made, they may or may not continue your customer, but the chances all are that they will thereafter believe in your honesty and will not pub-

lish you amongst their friends as a vendor of fraudulent goods. Taking it altogether, if we treat people fairly, considerately, and honestly, they are quite ready to extend to us the same consideration we extend to them.

PRESTON, Minn., Aug. 7, 1907.

Editorial

Caucasians ripen their honey more perfectly than do the Italians, according to a report of J. J. Wilder, Georgia, in American Bee Journal.

The Review's Creed is to discuss intelligently and impartially timely subjects which belong in its sphere; to be constructive rather than destructive; decrying evil if necessary, but offering remedies; and striving at all times for the upbuilding of apiculture.

A Gold Medal was awarded Mr. S. D. Matthews, of Hamilton, North Carolina, at the Jamestown Exposition, for comb honey in 4 x 5, plain sections; and a silver medal was awarded to Mr. N. W. Saunders, of Brockville, Maryland, on the same. The Twentieth Century smoker was given the highest prize for a bee smoker.

The Michigan State bee-keepers' association will hold its annual convention December 18, 19, and 20 at Saginaw. First session on the evening of the 18th. Headquarters will be at the Sherman House, an excellent hotel that gives us a rate of \$1.50 per day. R. F. Holtermann, of Canada, a first-class bee-keeper and convention man will be present.

Small Nuclei for queen rearing are still a success with W. H. Laus, but he now reports that, taking the whole season

through, there is really less labor by employing three-frame nuclei of the regular size. Such nuclei take care of themselves right along, month after month.

Paste made by mixing common wheat flour with *cold* water, then brought to a boiling point, will stick labels to tin. If mixed up with warm or hot water it will not stick, says Mr. W. H. Laus.

Lack of Brood in the spring is not always the fault of the queen, but rather of the bees, or of existing circumstances. Instead of trying to help matters by putting two queens in a hive, we will make more progress by so changing conditions that one queen will lay to the full extent of her powers. So said Mr. Holtermann at the Harrisburg convention.

Several Queens cannot be introduced to a colony at the same time when the colony is in a normal condition, but it may be done if we throw the colony into an abnormal condition; so said Mr. E. E. Pressler at the National convention. He also said that, with him, a colony with more than one queen, made no attempt to swarm. He had tried it with as many as 20 colonies at one time.

Chunk Honey is mostly a product of Texas, and Mr. J. B. Colton, of that State, asks if it would not be wise to take time

by the forelock in the way of producing section honey against the day when the market (Texas) is overstocked with chunk honey. Mr. Louis H. Scholl reminds him that when chunk honey is produced in shallow frames, it is an easy matter to extract the honey in case there is no sale for honey in the "chunk" form.

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The Entrances to my hives have faced in different directions; that is, part of the entrances have faced in one direction, part in another, and so forth. Not only has this been the case in one apiary, but in many apiaries, and I have yet to see that anything has been gained or lost by having entrances faced in any particular direction. If anybody has seen anything in favor of a certain direction, I would like to hear of it.

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Bro. York, of the American Bee Journal, has recently been called upon to bear the heaviest loss that falls to the lot of man, that of his dear wife, who passed away October 14th. It has not been generally known, but immediate friends have been aware for some time that the end was near. Valvular heart disease was the trouble. Bro. York will receive the most sincere and heartfelt sympathy of his friends and of the whole bee-keeping fraternity.

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Sugar Syrup for feeding bees does not need the addition of tartaric acid, vinegar, or honey, as recommended by some, to prevent granulation; at least, that has been my experience, and I have fed barrels and barrels of sugar, beginning as early as October 1st, and continuing the work until nearly the middle of November, when it is necessary to use a feeder *under* the hive, and use the feed hot to warm and rouse up the bees and get them to come down after the syrup. Theoretically, early feeding is preferable, but I have yet to see that the time of

feeding has any great bearing; and the crystallization of pure sugar syrup has never proven any obstacle.

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Effect of Close Extracting.

Locality will greatly modify this effect. In this locality, during a heavy flow, hives we extract in the morning are often filled with newly gathered nectar by evening. The hive I spoke of in the July article, which yielded \$28.00 worth in 28 days, was tiered to five bodies high. The honey was extracted four times during that period, and was practically all capped at each time. Had I extracted only twice I would have had only one-half the amount of honey, and of the same degree of ripeness.

Generally speaking, in this locality, when honey is coming in rapidly, close extracting, as soon as properly ripened, will increase the yield at least one-half, sometimes even double, but the advantage decreases with the lack of honey, while, in poor seasons, the advantage is very slight if any. Therefore, it is largely a matter of judgment, always remembering, however, that it is of the *utmost importance* to keep the bees *fully occupied all the time* during a heavy flow.—M. V. FACEY.

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The Heating of honey prevents granulation, and I believe that the higher the temperature to which the honey is brought, the more effective the treatment; and, it is very important to add, the greater the danger of injury to the honey. The length of time that the heat is continued also has a bearing upon the danger of injury. Keeping these ideas in view, Mr. Wm. A. Selser, of Philadelphia, heats his honey to a higher temperature than is usually done (168 degrees) bottles the honey, and then immediately cools it by immersing the bottles in ice water. The honey is brought to this high temperature by the use of steam heat, and great care must be exercised that the honey be not injured,

Two persons are kept constantly busy stirring the honey in the tank: otherwise that next the outside would be ruined before the honey in the center was hot enough. It might be thought that the immersing of bottles of hot honey in ice water would crack the bottles: so it will unless a certain ratio is preserved between the temperature of the bottles and the ice water.

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Have the Honey Ripe, Let the Time of Ripening Be What it May.

Mr. Facey wrote me, sometime ago, as follows: Regarding your foot note to my article in the July Review, I would say that I most emphatically agree with you in your cautions regarding the extracting of green honey. The bee-keeper who extracts his honey in an unripe condition, whether at the end of the season, or in 12, or any number of days, is not only damaging the market at large, but is surely ruining his own trade. The best dealers do not care to handle such honey at any price. I am glad that you laid stress upon this point, as I believe the article called for it. Whatever the *time* of ripening may be, honey is not ready for extracting until it is ripe, and there are always some hives or frames, unfit for extracting, which must be left. It is much better to have a dark colored, ripe honey, than white honey that is unripe. I desire to emphasize this most emphatically.

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The National convention at Harrisburg was quite well attended, considering that it was held away to one side of the country. Something over 100 were present. Everything passed off very pleasantly, but there was nothing of a startlingly new nature brought out. This is not to be wondered at in these days of bee journalism every new thing is exploited in the journals about as soon as it comes out.

If there was any one thing that stood out more prominently than another in the discussions, it was the continued and

vehement denunciation of extracting unripe honey. Let the honey be thoroughly ripened in the hives was the watch word.

There was some adverse criticism over the absence of a program. In the past there has sometimes been criticism because there was "too much program," and not sufficient time for the question box. There is a golden mean in this matter. One or two good papers at each session furnish a foundation upon which to build; and if these topics and the writers are well chosen, the publication of the program, in advance of the meeting, is quite likely to add largely to the attendance.

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Something About Renewals.

I wish I could sit down by the side of each subscriber and have a long talk with him on this subject answer all of his questions, and perhaps ask him a few.

Personally, I am in favor of stopping a journal promptly upon the expiration of the time paid for. This seems business-like, and when I began publishing the Review I supposed this plan would please everybody, hence I adopted it. Two or three years went by, and many subscribers did not renew. I often wondered why they had dropped out. Finally, I decided to ask them; and, at an expense of about \$50.00, a circular was mailed to some of the delinquents, asking that the enclosed stamped and self-addressed envelope be used in letting me know *why* the Review had been dropped. A large proportion replied, many renewed, and all who wrote "gave reasons," for their dropping out. There was quite a variety of excuses given, but the reply that opened my eyes the widest was that the Review had been stopped simply because *I had stopped sending it*. Many had taken offense because I had cut it off short. To my surprise, I learned that the majority of my readers actually preferred to have me keep on sending the journal, and allow them to pay for it at their convenience. I expect that the publishers of this country

are to blame for this feeling upon the part of so many readers. They have favored and encouraged it until it has become a habit. I don't like it. But that makes no difference; the man who wishes for the greatest success must not waste his time bemoaning conditions, but adapt himself to them.

I was willing to keep on sending the Review a reasonable length of time after a subscription had expired, but I could never bring myself to the point of *forcing* the Review upon any one; not even the few who might not wish it continued.

Finally I decided to continue sending it, giving notice to that effect, and asking those who did not care for it to drop me a postal, or ask their postmaster to notify me. A notice to this effect is published in each issue of the Review, and any subscriber who prefers to have his journal stopped at the expiration of the time paid for can say so when renewing, and his request will be heeded. At the end of each quarter, a notice is sent to each delinquent subscriber; and upon each notice this request is repeated, to let me know, when renewing, if he prefers to have his journal stopped when the time is out. I wish to please all of my subscribers, and they have only to let me know in regard to their wishes, and I'll follow instructions.

With all of the pains that I have taken in this direction, I still sometimes get a sharp letter because I have kept on sending the Review yes, and in the same mail may come a letter containing \$1.00, and a few courteous words thanking me for my kindness in thus continuing the Review. Once more, dear reader; tell me your wishes when renewing, and they shall be respected.

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A New Contributor for Next Year.

It sometimes seems as though the Review was favored by fortune in the way of capable correspondents; and the last stroke in that direction was in securing the services of Mr. Elias E. Coveyou, of

Petoskey, Michigan, whose first article of a long series appears in this issue. Mr. Coveyou's first experience with bees began some 15 years ago, when he was a boy in his teens; and has been continued specially and enthusiastically ever since. He was among the first to see the possibilities of "keeping more bees," and has gradually increased his numbers until he now has three apiaries under his management. His special *forte* seems to be that of short cuts; especially the invention of labor saving devices that can be made to take the place of labor, or, at least, to greatly multiply the results of labor. For instance, when I employed an electric alarm to notify me when a can was full of honey, I took one step; but Mr. Coveyou took still another, and made an arrangement that not only rings a gong when the can is full, but it *automatically closes the gate*; and a bell rings continually until the can is removed.

He is the first man in Michigan to extract a crop of honey (1906) with a gasoline engine as power for running his extractor an eight-frame automatic. One man controls the extractor, putting in the full combs, removing the empty ones, and changing the cans when the Perfection Duplicating Scale says one is full, while three men do the uncapping, standing along the side of an uncapping box, that will hold the cappings from 10,000 pounds of honey. He is planning to bring all of his honey home another year, and extract it there, after warming it up with steam heat.

There is no one in Northern Michigan, and I doubt if there is any one in the State, who has put up as much honey for the retail trade, as has this Petoskey boy; and into this bottling business he has carried that same inventive spirit that characterizes his work in the bee yard and extracting room. For instance, he has a device that enables him to fill a whole tray of four dozen jars without moving one of them, and the flow of honey is checked only the smallest fraction of a second between the filling of one jar and

another. His plans for washing, drying, labeling and packing his jars are original, novel and decidedly expeditious, but I won't forestall him by describing them, as he is to tell the readers of the Review how he raises big crops of honey with the least possible labor, and then, more important than all, how, in the fall and winter months, he sells these crops, and thousands of pounds besides, at the highest possible price.

I have known, in a general way, for some time, that this Northern friend of ours was making a great success along these lines, but it was not until I had the pleasure of several days in his company, visiting his apiaries, and packing house, seeing his plans and processes put into actual operation, and making photographs of most of them, that I fully realized how far he was in advance of most of us.

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Bee-Keeping as a Business

(Read by the editor at the Harrisburg convention.)

I have been asked to talk about out-apiaries. I have not yet had sufficient experience with out-apiaries to give much of a talk on that subject, so I will take a broader subject, that of "Bee-Keeping as a Business."

The first step is that of learning the business. Most of the failures in bee-keeping as a business is in launching out too widely with only a narrow experience. As to how that experience shall be gained is another question, but it must first be obtained, in some way, just as surely as the physician, lawyer, or architect, must learn their professions before starting in business. The quickest and most satisfactory method is that of working with some experienced, successful specialist; but it is a noteworthy fact that most of our specialists have begun in a small way, and slowly and laboriously, but, perhaps pleasantly, climbed up the ladder without any boosts except those gathered from books, journals and visits to the apiaries of other men. A man starts with a few colonies. The bees and his knowledge

gradually increase until he has perhaps 75 or 100 colonies. There he stops. He knows the business of managing an apiary from A to Z, but he lacks the nerve, or confidence in himself, or in the business, to branch out still further; to drop all other entangling alliances, and make a sole business of bee-keeping. The specialist in any line can always out-do the man of many trades. This is a self-evident proposition. The man who succeeds is the one who concentrates his energies, his capital, and his time.

Not every man is situated properly for making a sole business of bee-keeping; and it may not be desirable nor advisable that he change the conditions, even if it were possible. These are some of the points that each man must decide for himself. One thing is certain: No man ought to ever attempt bee-keeping as a sole business in a poor locality. The foundation and corner stone of bee-keeping as a business is a good location. Without it, all else is in vain. With it, many other things may be neglected. The man in a good location will always wear the robes of purple.

Having the location, the next step is to stock it with the best strain of bees. Every bee-keeper of experience knows that there is just as much difference in bees as in other kinds of stock. There are scrub bees just as there are scrub poultry, cattle and sheep. In our Northern Michigan apiaries we had, in one apiary, 50 colonies of a distinct strain that increased to 104 colonies, and stored 2,700 pounds of surplus, while 60 colonies of ordinary bees in the same apiary increased to only 80 colonies and stored about 2,000 pounds of surplus. These bees were all in the same yard the previous season, treated the same, wintered in the same cellar, and treated the same in the spring. The only difference was in the *strain of bees*. Now, it requires no more hives, combs, nor labor to care for thoroughbred, first-class bees than it does to care for scrubs. It costs no more to raise such bees, for the bees to rear the

young bees, than it does to rear scrub stock. A man in the business, as a business, ought to leave no stone unturned in securing the best possible stock. Then let him keep constantly weeding out those colonies that show any undesirable traits, and breed from those queens whose colonies show the most desirable traits. Don't keep introducing new and uncertain blood, but go on selecting, selecting, selecting, year after year.

Having the location, and the most desirable stock, the next vital point is that of keeping bees in sufficient numbers. I never knew a man to become wealthy, or even gain a competency, from the keeping of a few bees. There must be a sufficient number so that, when there comes a good year, honey may be secured ton upon ton. Just how many colonies can be profitably kept in one location may never be decided positively. Locations, seasons, methods and men all differ. I am becoming satisfied, however, that many of us might profitably keep a great many more bees in one location than we have been keeping. It might be necessary to feed in both the spring and the fall, but in the great, rushing, booming harvest time, I doubt if a really good location is very often overstocked. One year ago, in one location, we had 150 colonies, and believed that the number ought not to have been increased. It was increased, however, the next season, to 200 colonies, and then ten colonies, the cream of an apiary moved from Flint to Northern Michigan, stored 1,200 pounds of surplus, when the average of all our apiaries was only about 50 pounds. I am satisfied that it is more in the condition of the colonies at the time of the harvest than it is in the number of colonies working in the field. Before starting an out apiary, let a man consider well, and see what may be done in the way of feeding, and otherwise caring for the home apiary. Let him know beyond a *doubt*, that he has more bees at home than can be profitably kept in that location. Let him be just as sure as he *can* be that it will be

more profitable to move some of them to another field. Let him not forget that just as soon as he starts an out-apiary, he has taken up a new problem in bee culture. Previous knowledge of bee-keeping will help him, but there will be many new elements, many new factors. How often, in reading the bee journals since I began operating out yards, do I come across some method, or plan, or piece of advice that causes me to exclaim: "That is all right for a home-apiary, but of no earthly use in an out-yard." No sort of fussing can be tolerated in an out-apiary. There must be rigid system. There must be simplicity. And the methods must be adapted to the work that is to be accomplished. Details would be out of place here. In fact, a plan or system adapted to one location, or to one man, would be entirely out of place in another State under the management of some other bee-keeper. It is wonderful to me, as I look over the different systems of different men who may not even be widely scattered, to see how different are their methods, and yet how *appropriate* they are to the conditions—to the locations and the men who are accomplishing such results. Know what you wish to accomplish. Study your location, your object, and yourself, and then adopt such hives, appliances and methods as will best allow you to accomplish your end. Extracted honey may be the most profitable for one man to produce, comb honey for another. Comb honey may be the kind of honey to produce at the greatest profit in one State. In another State the conditions may be more favorably for extracted honey production. Then the markets have a bearing.

But, if a man will use the same sort of common sense, or business sense, in engaging in bee-keeping as a specialty, that he would use in some other business, he may look for abundant success. Stop "fussing" with bees. Stop belittling the pursuit. Hold up your head. Put your whole energy, and thought, and capital, and labor into the business, just as though

you were running a 200-acre farm. Magnify your calling. Be proud of it. Make it a success.

The National Association Remembers its
Manager and His Good Wife in a
Most Happy Manner.

On the first day of the Harrisburg convention, near the close of the evening session, the editor of the Review addressed the chair as follows:—

Mr. President When a good man passes over the river to the great beyond, we mourn his loss, we write eulogies, and heap flowers upon his coffin; how much better, how much more sensible, if we would sing his praises and bestow our gifts, while the heart is yet warm and can beat in response. In line with this thought, I would like to say a few words regarding our genial Manager N. E. France.

I have visited him at his home, traveled with him over his State and that of my own, looking after infected apiaries, roomed with him at conventions, bunked with him in a week's trip across the continent when this National convention was held in Los Angeles, and had long and continuous correspondence and personal consultation with him regarding the management of the affairs of this Association. If there is any man in this Society, who, better than another, knows Mr. France, I am that man; and I say it freely, openly and *proudly*, that no man in this country has worked harder, longer, more unceasingly and more unselfishly for the up-building of bee culture, and especially for the good of the members of this Association, than has Mr. N. E. France. Not only this, but he has been very scantily paid. No private concern, or corporation, could obtain, for five times the amount that he is paid, such services as he has given; and yet, no word of complaint has ever passed his lips.

In view of all this, I have long felt that we members ought to show our appreciation in some fitting, substantial manner; and, with this end in view, I recently sent out to the members a postal that read as follows:

Flint, Mich., Sept. 26, 1907.

Bro. Member of the National—

If any man in this country has worked long and unselfishly for the good of bee-keepers, and especially for the members of the National, it is our General Manager, N. E. France; and I have long thought what a kind act it would be for us all to club together and present him with some little token

of our appreciation. Suppose we contribute a little mite apiece, and get a gold watch and chain, as good as money will buy, have a suitable inscription engraved inside the case, and present them at the coming convention at Harrisburg, Pennsylvania; therefore, let me ask you to send me whatever amount you can afford to spare—no matter how small the amount, if it is sent freely, yes, gladly—and with the money thus received I'll buy the watch and chain, have the inscription made, and see that the presentation is properly made at Harrisburg.

As ever yours,

W. Z. HUTCHINSON.

There were hundreds of responses, and the remittances were such as ought to have pleased the man who was to be the recipient of the token of appreciation. The majority of the remittances were ten cent pieces; then a large number sent a quarter apiece; quite a number sent one dollar apiece; two or three sent \$2.00 each, one or two sent \$3.00 apiece, and two sent \$5.00 each. It all amounted to a trifle over \$75.00. But the most pleasant feature was the letters that accompanied the remittances. I think our good friend's ears must have tingled about the time I was reading those letters. So many of them wrote: "This is the very thing that I have been thinking of doing for a long time, and now you have got the start of me." I doubt if there was one cent in that contribution that was given other than freely and gladly. Once in a while some one waxed witty, or facetious in a genial way. I remember that one man wrote "Yes, I think Mr. France needs watching, and I wouldn't wonder if he needed chaining, too, so here is my quarter to help do the job."

And now a few words about the watch. The Philadelphia watch company make as good watch cases as are made in this country, and we have bought the very best case that they make. Into it we have placed a full-jewelled (17 jewels) Elgin movement; and, as fobs are now more fashionable than chains, we have attached to it a gold fob. But there is one more feature about this time piece that I should prize above all else. It is the inscription engraved inside the case. It reads as follows: "A Token of Appreciation from Members of the N. B. K. A. to their Manager, N. E. France." A man ought to be proud to merit such an inscription, and Mr. France certainly is deserving of it. Mr. France may already possess a gold watch, but, if he does, he can give it to one of his boys, as we wish him to wear this watch the rest of his life. Bro. France, please come forward, and allow me to "watch and chain you."

Mr. France came forward with flushed

cheeks, and eyes wet with tears, when the watch was presented in these words:—

Bro. France, take this beautiful token of our appreciation: wear it next your heart; and may that heart long beat as faithfully and steadily as the little balance wheel inside; may your face ever be as bright and shining as this beautiful case; and may your days be as full of "good works."

There was a pause of a few moments that Mr. France might respond, but he had been too deeply touched—was so completely overcome as to be unable to utter a single word—and when the speaker saw the situation he continued:

Bro. France, we have tried to fill your cup of happiness to the brim; now we wish to make it *overflow*. Away in that far Western home of yours is a loved one who, with bright brain and nimble fingers, looks well to the ways of her household. And we have been led to believe, that were it not for those nimble fingers, and the wise guidance of affairs in your ab-

sence, it would be impossible for you to properly fulfill the duties of the office that you now hold. In view of this we esteem it a rare pleasure to also remember that faithful helpmate of yours—your wife. We have, for her, a dozen solid silver teaspoons. On the top of the handle, in old English script, we have had engraved the letter F. On the underside of the handle, in smaller script, are the letters N. B. K. A. Take them to Mrs. France, and present them with the compliments of the National Association. Tell her not to "keep them just for company." Have her use them every day, just as you do your watch, and, when your hand supports one of these, so easily, so lightly, remember that, in a like manner, back of you stands the whole National Association, and that it can and *will* support *you* just as firmly as your hand can support one of these little spoons.

At the close of the presentation, the speaker moved an adjournment, when the members at once crowded around Mr. France and showered upon him their heartiest congratulations.

EXTRACTED DEPARTMENT.

ELEMENTS OF SUCCESS.

What Constitutes Success, and How it May Be Attained.

We hear a great deal about success, but who can give an accurate definition? What would be success for one man, would be failure for another. Is there a definition that will apply to all men? I came across one the other day in the National Home Journal that pleased me greatly, as I think it comes pretty near to filling the bill. Here it is:

"Success is the attainment and preservation of a practicable and legitimate ideal."

It was written by Arthur F. Sheldon, who goes on and enlarges upon this idea, pointing out most clearly the elements of success, and showing how deficient elements may be strengthened; in fact, I

think it worth while to copy some of the paragraphs. Among other things he says:

In the end success includes the attainment of health, long life, money and honor. When we get down to the last analysis we find that these are the four things we are all striving for. Health is the first thought in the minds of the great majority of people. This is proved by the fact that whenever people meet, the first question is "How are you?" This question has been asked so often that it now springs to the lips almost unconsciously; nevertheless it is the result of a deep feeling of anxiety in the human family over this question of health.

Then again, every one wants long life. It is not enough that we should simply enjoy good health for a few years. We should aim to live to a ripe old age.

Money is absolutely necessary to the accomplishment of any "practicable and legitimate ideal." It is no disgrace to be poor, but mighty inconvenient. Money-madness—the mere piling up of wealth—

is abhorrent to me, as it must be to every one who is really pursuing a legitimate ideal; nevertheless, a fair degree of financial prosperity is essential to success.

Above all we must attain honor. We must merit—yea, we must earn, the esteem of our fellow men, by our abilities, by the unselfish paying of our debts to society, and by the uprightness of our conduct.

It is now generally admitted that the supreme end of human existence is the attainment of happiness. When we think closely we find that the attainment of health, long life, money and honor means the realization of this supreme object.

So then, let us inquire from what do health, long life, money and honor spring? My answer is that they spring from *ability*, *reliability*, *endurance* and *action*. These are the four success essentials. Without any one of them no man may hope to attain and retain a "practicable and legitimate ideal." With all of them success is as inevitable as the rising of the tides.

Ability is intellectual capacity, which is born of the *knowing* powers of the mind. *Reliability* is that quality which enables your fellow man to depend upon you. It is born of the good in the *emotive*, the *feeling* side of man. *Endurance* is the capacity for work without tiring. It is that power which enables him who possesses it "to stay in the game." *Action* is doing things. It is the art side of life. *Action* is a product of the will.

Now, could anything be more simple, and at the same time more inclusive than this? Give a man *ability* without *reliability* and you will probably have only a gifted criminal. Give a man both *ability* and *reliability*, and let him be lacking in *endurance* and he will fall short of true success because he will not be able to stand up under hard work. Give him *ability*, *reliability* and *endurance*, and yet if he lacks the *actional* qualities he will be known only as a dreamer; never as a doer. Thinking is great, but doing is greater. There must be action.

While it is true that all these four qualities are necessary to success, do not be discouraged if you feel that you are short on any one of them, for each can be cultivated. You possess the raw material out of which to manufacture *ability*, *reliability*, *endurance* and *action*. Have you ever stopped to think that your mind, my mind, every one's mind has, what we will call, to make it perfectly clear, three departments—the knowing department, the feeling department, the willing department? The greatest mind has no more than these three departments. Bacon,

Napoleon, Washington, could know, feel and will, and that is all they could do. You know, feel and will—you have these three departments in your mind. Just as these great men developed the three departments to a wonderful scope, so you can develop yours.

You have not only been blessed with a body and with a mind, but you have also been blessed with the power to improve both your body and your mind. The chief glory of man lies, not in his perfection, but in his perfectibility. Within you lies the power to develop yourself. In other words, within you are the elements of your own success. If you do not wish to build yourself, to bring out these elements of success, then do not blame luck or chance, or anyone but yourself.



UPS AND DOWNS OF BEE CULTURE

Some of the Encouragements and Discouragements That May Be Expected in Our Pursuit.

One of the great lessons that every man must learn before he can succeed, is that he must face both "ups" and "downs" in any business; and that he must not be unduly cast down by the latter, nor unreasonably elated by the former. When the fundamental principles of any matter, be it business, or what not, are correct, the details can always be worked out, and success will follow. Before engaging in bee-keeping or, any other business, let a man first assure himself that the fundamental principles are correct. Let him consider if he is adapted to and loves bee-keeping. Let him know that he is in a good location. If he does not already possess it, let him acquire a thorough knowledge of the business. Get these fundamental principles all right, and then let no temporary obstacle block his road. Don't dodge off to some other business because there is an occasional loss or drawback—you will meet these in any business. Right in line with these thoughts my old friend, C. P. Dadant, of Illinois, has a most excellent article in the American Bee Journal. Mr. Dadant says:

I believe there has never been a better

time to preach perseverance to the novices and beginners in bee-culture than at present. No business in the world is more apt to encourage or discourage to excess, those who enter it, than this occupation of ours. When the honey crop is good, the bees swarm freely, and the number of colonies in an apiary increases rapidly, the bee-keeper who has but a short experience thinks he has struck a mine of the finest gold; but when the summer is too dry, and the bees decrease in numbers, go into winter quarters with a small force, and dwindle down in the spring, he is very apt to conclude that there is nothing in the pursuit worth caring for.

In an experience of some 40 years, we have seen many of these ups and downs. Some 25 years ago we had a wonderful season for swarming. I was then handling an apiary of about 60 colonies on shares, in addition to our own 5 apiaries. These bees, located near the Mississippi river bottoms had a very nice range of fall bloom. They swarmed until the number of colonies was almost trebled, and many hives filled their supers besides. The oldest son of the family, then about 18 years old, concluded that there was nothing to equal bee-culture, and assured me that he would go into the business in good earnest the following spring. But the winter was very severe. A number of the late swarms were not strong enough in bees to withstand the terrible cold, and scores of colonies died with plenty of stores in the brood-chamber. This changed our young man's ideas, and he concluded that if there was a "royal road to wealth," bee-culture was not on that road. I tried to explain to him that winter losses could soon be recouped as long as there were a number of colonies remaining to breed from, and plenty of combs and honey to make increase by division, or what is now called "shook-swarms." But nothing would do, and at his instigation the father sold me most of the bees and kept only a few colonies.

There have been plenty of instances of such discouragements after good seasons. The success and failure of most lines of business, and of many crops, are like the waves of the sea—full of ups and downs. Now you are on the crest of the waves, and now between two billows that threaten to engulf you. But with a good rudder, and a good, determined man at the helm, there is no such thing as "fail." The methods are always being improved, and the management is becoming easier every day.

But we must not expect sunshine every

day, neither should we expect a storm every night. I remember that, a few years ago, a man living in the vicinity of East St. Louis, had sold something like \$2,000 worth of cabbages from 5 acres. The next season everybody around him planted cabbages, with the result that they could hardly be given away, and had to be shipped to a distant market. Then all those who had so willingly rushed into this business rushed out again with the same eagerness. But the man who has experience and perseverance does not give up because of a failure. He knows that after the storm, comes the sunshine, and he makes ready for that sunshine, while the storm is raging.

In this part of Illinois, the summer of 1906 and the spring of 1907 were probably the worst known in 40 years for bee-culture. At any rate, I had never seen such unfavorable conditions for bees, up to the beginning of June, 1907. But so long as we have bees enough to build up again, there is no need to give up. On the contrary, it is then that one must persevere with renewed energy, for there are going to be plenty of weak hearts, and those who give up make the market better for those who stay in the business. See the prices of honey rising. It is because of poor crops and discouragements. But some of the bee-keepers are already reaping a reward for perseverance. Those who have held on and sustained their apiaries are in many places harvesting good crops, for which they secure a good price.

This is not the case only with bees or cabbage. Take the grape-growing business. For years grapes have sold at a loss to the producer, because they were too cheap. This year, many vineyards have been destroyed, and those who took care of their grapes are securing a good price.

So dear friends, if you have had bad seasons, do not give up; care for your bees with renewed courage and firmness. But if you have had good seasons—extraordinary crops do not imagine that there are no more storms ahead. On the contrary, take heed, for by and by, another storm will come. Bad winters and dry summers are not over; but, on the whole, remember that there is money in bee-culture for the man who "stays with it."

In my opinion, the prices of honey are destined to remain firm for many years. There have been short crops, apiaries are less numerous, and, in addition, the new pure food law is putting a stop to much of the adulteration, so that we have a much better chance to inspire confidence

in the consumer, when we tell him that we "guarantee our honey to be absolutely pure." A few years ago he might have taken this as empty talk, but he now knows that there is a penalty for deception in foods, and this is helping us out.

A HOME-MADE WAX-PRESS

How to Extract Wax Most Efficiently With Simple Apparatus.

Wax presses of the screw-variety do their work effectively, but some of them are quite expensive, and I doubt if some of them will extract the wax more completely from old combs than will the simple apparatus described by Mr. G. M. Doolittle in the American Bee Journal. Mr. Doolittle says:—

The steam wax-extractors I know very little about, except the smaller ones of the past, such as the "Swiss," etc. These did their work quite well, but were slow, and required a cost for fuel which is eliminated with the solar. But for a lot of old combs, filled more or less with cocoons, pollen, etc., I know of nothing better than boiling water in a caldron or other kettle fixed something as follows:

Instead of hanging the kettle over the fire as is usually done, take a measure of the kettle on the outside, a little way up from the bottom, and go to your blacksmith and tell him you wish a piece of old, heavy wagon-tire welded so that the inside shall represent your measure. To this you want three or four (the latter being preferable) square or round bars of iron welded, at equal distances apart, for four legs. These should be of suitable size to give strength enough to support the weight of the kettle and contents, and long enough to raise the kettle from four to six inches from the ground at its lowest point.

After getting the kettle-holder home, place four flat stones just under the surface of the ground where you wish the kettle to stand, at proper places, so that each leg will rest on one, having it at such a point or place as will be handy for all of the work done with such a kettle, such as heating water for many purposes, boiling food for stock, etc., for the smallest part for our iron friend will probably be the rendering of wax.

After once having the kettle fixed in this way, you will never go back to any of the old ways of "hanging" a kettle, if

you are at all like the writer. Besides the kettle, you will want a sack made of burlap or some other stout, open cloth, which you are to fill with the old comb, stamping it in so as to get all in as compact a condition as possible.

Next take a piece of four-inch soft-wood plank, or two pieces of two-inch plank spiked together will answer, though not quite so good. Now, round one side of this, so it will fit the bottom of the kettle, leaving the other flat. To the flat side fasten (by cleats or otherwise) a standard of suitable length, which should be flattened at the top and have several holes bored in it. Then get a 3x4-inch scantling, or a suitable pole from the woods, and mortice through it near one end for the top of the standard you have made, boring a hole through it in an opposite direction for a pin or bolt to pass through it and the standard. Besides this you will want a log-chain, which is usually near at hand about all farm houses. Having these things we are ready to fill the kettle two-thirds full of water and start the fire under it. In doing this use only light fuel so as not to have a hot fire after the water boils; for, if otherwise, it would be too warm for agreeably working around it, and after considerable wax was in the water it might boil over.

Having the sack stamped full of the old combs, tie the mouth of it and put it in the boiling water. After allowing it to boil three or four minutes, with an old hoe press and squeeze the sack against the sides and bottom of the kettle, rolling it over each time as you press. The wax will rise with each pressing of the sack; and if the old comb is not all in the sack, you can soon raise the mouth of it out from the water, and after it has cooled a little so you can handle it, untie, fill up and re-tie again, and so on till all is in.

When all the old comb is in the sack, and has been worked with the hoe several times, fasten each end of the log-chain to the ears of the kettle, or, if the kettle has no ears, fasten on either side of the kettle-holder, while the middle of the chain is to be fastened to the short end of the scantling or pole. Now put the rounded plank end of the standard on the sack and sink it to the bottom of the kettle, when the top end is to be inserted in the mortise in the pole, and the pin or bolt put through the desired hole. Next, go to the long end of the pole or lever and see how you can make the wax rise by bearing down. When bearing down, sway the lever back and forth, and from side to side, thus liberating the wax. If you have

your lever long enough, and things fixed as they should be, you will bring hundreds and thousands of pounds to bear on the sack, and thus have a better pressure than with any of the wax-presses made, as none of these, with which I am acquainted, can give a rocking pressure while squeezing.

After a little you will have reduced the bulk in the sack so you can again shake the debris down and re-tie the sack so that the plank end will cover the whole, when with another pressure with the rocking motion every last particle of wax can be brought out to rise on top of the water in the kettle. Being sure that the wax is all out, you can hang a weight on the lever and leave it. Don't dip off the wax unless you have lots of time, and consider it only fun to do so, for I assure you that the next morning you will find it all caked nicely on top of the water, when you can break it up and get it ready for a second melting and moulding, which all wax should have before being put on the market or for using in making foundation.

After taking off the wax, take out the sack, empty out the refuse and rinse and dry the sack, when it and the rest of the implements used in this rendering are to be stored away for future use.

I know the description of this seems quite long, but I believe that in practice it is the shortest known process to get out a large lot of wax from old comb, and has to its advantage that no large sum of money has to be paid out for a wax press or extractor. If you think the iron-kettle holder too expensive, set the kettle on three stones. If stones are used, they should first be subjected to heat, else they may fly to pieces and upset the wax.

There is one feature about the above arrangement that especially recommends it, and that is the continued releasing and reapplying of the pressure while the slum gum is submerged in hot water. It is upon this feature that the Hershiser press depends for its effectiveness. When the pressure is removed, the hot water rushes into the mass; when the pressure is again applied the water is forced out, bringing with it a portion of the wax. This process continued, as it will be with the rocking movement, finally brings out the last possible particle of wax. I am inclined to the belief that, especially for old combs, no plan is superior to this one described by Bro. Doolittle.

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Of those Superior Queens for sale this fall but I will be better fixed next year than ever to send out good queens promptly.

Let us talk the matter over now while we think of it. Write soon.

S. F. TREGO, Swedona, Ills.

CLUBBING OFFERS



Everybody knows about the Bingham smoker. The Conqueror size gives sufficient smoke, and is as good as a larger size, except that it needs filling a little oftener. The price, postpaid, is \$1.00, but I will send the Review one year and a Conqueror for only \$1.75.

Advanced Bee Culture is a beautiful book, delightfully written, neatly printed, lavishly illustrated and handsomely bound, but, of greater importance, the reading and heeding of its contents will put any practical bee-keeper on the high road to success. Price \$1.20, or the Review one year and the book for only \$2.00.

A *good* fountain pen is a great convenience, and the Parker certainly fills the bill. I have carried one for years, and I *know*. It does not leak and daub the fingers, while the "lucky curve" feature makes the point always inked, ready for business. The \$2.00 pen is exactly as good as any pen that is made; the higher priced pens simply having more fancy handles. For \$2.50 I'll send the Review one year and a \$2.00, Parker, gold, fountain pen.

The Advanced Bee Veil is the most satisfactory veil that I have ever worn. It is not tucked inside the collar, but is fastened and held down firmly, by a cord, out on the shoulders, several inches from the neck; thus making it simply impossible for the bees to sting the neck through the veil, as is the case with the ordinary veil. Price of the veil is 60 cents, but I'll send the Review one year, and the veil, for only \$1.50.

The Superior Stock strain of Italians bred by J. P. Moore are the equal of any bees in this country. I have tried them, and sold them year after year, and they always come out ahead. Many a man has blessed the day he bought a queen of this stock. Here is about the way such men write: "The colony of Superior stock that I bought of you last spring filled 140 pound sections that I sold for \$18.60, while my two next best colonies stored only \$11.00 worth, each, of surplus. I am sure that these bees are really superior stock. They kept on storing surplus quite a while after all the other colonies had quit.—A. A. Augenstein, Dakota, Ills." The price of a queen is \$1.00, but I'll send you the Review one year, and have Mr. Moore book your order for a queen to be sent next spring, for only \$1.60.

W. Z. HUTCHINSON,

Flint, Mich.

Renewal Offer

When a subscriber's name and address are once set up correctly in the mailing list, it is an advantage to have them remain there year after year. If a renewal is not received promptly, the name must be removed and the type thrown in; then, when it does come in, the name must be again set up, with the accompanying opportunity for making errors.

Another thing: The majority of renewals come in within a few weeks at the end of the year, and there are times when the matter of caring for them is no light task.

Here's another point: I wish every one of my subscribers were also readers of the Success Magazine, a 70-page monthly at \$1.00 a year. I have read it for years, and I often feel that a share of my enthusiasm, courage and perseverance has been gathered from its pages. A man's habitual frame of mind has much to do with his success, and the reading of Success will cheer, and inspire and encourage, and arouse a man to successful efforts.

It will be seen there are two things that I desire, your renewal before the end of the year, and that you become a reader of Success; and to bring this about, I will renew your subscription to the Review, and send you Success one year for only \$1.65; but your order must reach me before December 10th.

W. Z. HUTCHINSON,
FLINT, MICH.

ADVANCED BEE CULTURE

The foundation of a crop of honey rests in the successful wintering of bees, and this is the result of many things. Strong colonies alone will not insure safe wintering, neither will a warm cellar, nor chaff hives. Perfect stores will come the nearest to it, but they can't be depended upon *alone*. In some localities the natural stores can be depended upon; in others part of the natural stores are all right for wintering purposes, and others are disastrous. There are methods whereby the right natural stores may be secured for winter, or, if not, the colonies may be brought through the season practically free from natural stores, when it is an easy matter to furnish them the best of all winter stores—cane sugar.

When the food is all that it should be, then comes the matter of protection; shall it be packing of some kind, such as sawdust, or chaff, or planer shavings, or shall it be the cellar?

If it is the cellar, then follow the matters of temperature, moisture, ventilation, etc., all of which have a bearing upon successful wintering. There is a way of telling whether a cellar is damp, *how* damp it is, and whether it is *too* damp (depending upon the temperature) and there are methods of rendering it dry if it is too damp.

Besides the matter of ventilation to the cellar itself, which also has a bearing upon temperature, there is the ventilation of

individual hives, so that the dampness may pass off, yet leaving the cluster always dry and warm.

Then there is the giving of protection in such a manner, when wintering bees in the open air, that the cluster may remain warm and dry.

Successful wintering is really a many sided subject, but it can be mastered so as to be able to bring colonies of bees through the winter as safely as may be done with a cow or horse.

All of the leading factors of successful wintering, as well as the minor details, are given in the book *ADVANCED BEE CULTURE*, and I am satisfied that any man who reads this book, and follows its instructions, will winter his bees with practically no loss. Last fall I put 104 colonies of bees into my cellar, and took them all out in the spring alive, dry, clean, healthy and strong, and I *know* I can do this *every time*, and so can others if they will follow the instructions that I give in *ADVANCED BEE CULTURE*.

If you have failed in wintering your bees, or, if you have succeeded only in a measure, and would like to secure *perfect* wintering, get the book *now*, and read it, and put into practice its teachings, and next spring will find you with strong, healthy colonies—the foundation of all honey crops.

Price of the book \$1.20, or the Review one year and the book for only \$2.00.

W. Z. HUTCHINSON
FLINT, MICH.

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CLUBBING OFFERS



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Twentieth Century Smokers have a diameter of $3\frac{1}{2}$ inches, are 7 inches deep, have a double draft, double walls lined with asbestos, a hinged, one-piece cover, and the bellows is fastened on with ribbed, steel brackets. The price, postage paid, is \$1.25, but I will send one with the Review one year, for an even \$2.00.

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W. Z. HUTCHINSON,
Flint, Mich.

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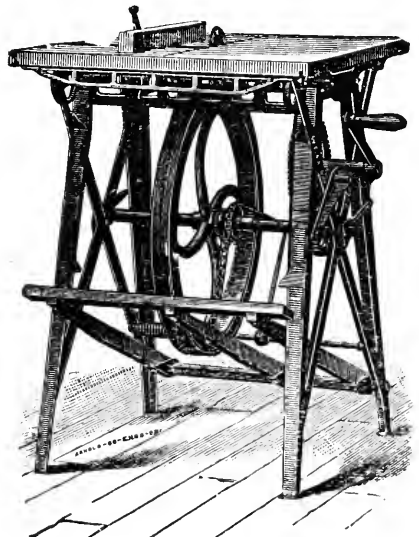
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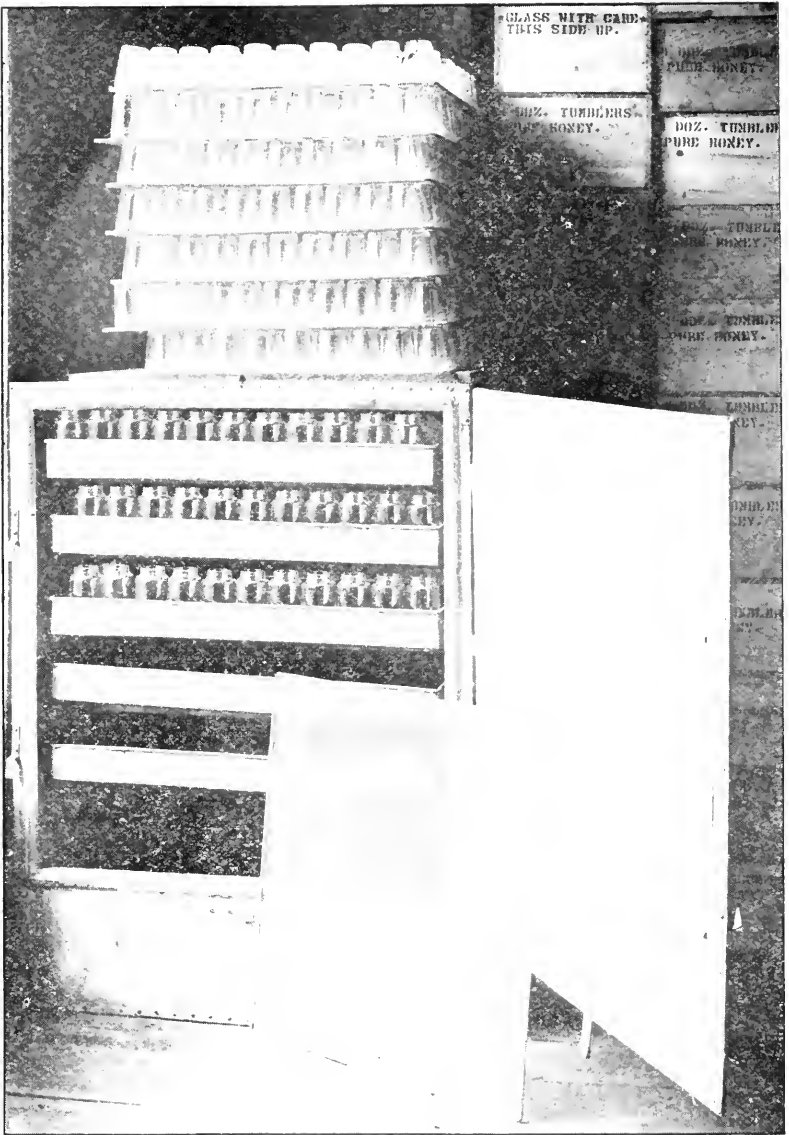
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Devoted to the Interests of Honey Producers.

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W. Z. HUTCHINSON, EDITOR AND PUBLISHER.

VOL. XX.

FLINT, MICHIGAN, DECEMBER 15, 1907.

NO. 12

Liquefying Honey and Washing and Drying Bottles.

ELIAS E. COVEYOU

THE man who bottles honey for the trade soon learns that the first step towards success is the proper liquefying and heating of the honey before bottling it. In no manner can the heat be applied more satisfactorily than by the means of steam-heated water, and this necessitates the building of a tank in which to place the cans and the hot water.

HOW TO BUILD A TANK FOR LIQUEFYING HONEY.

The tank that we have is seven feet long and four feet, two inches wide, by 16 inches deep, with a partition, lengthwise, through the center, all made of 1 $\frac{3}{4}$ clear pine plank; except the bottom, which is of galvanized iron. The corners are halved down to $\frac{3}{4}$ of an inch, and nailed both ways with 12 and 16 penny, cement-coated nails. Although we did not use white lead in the joints, I think it would be well to do so. The center-piece, or division board, is held in place by

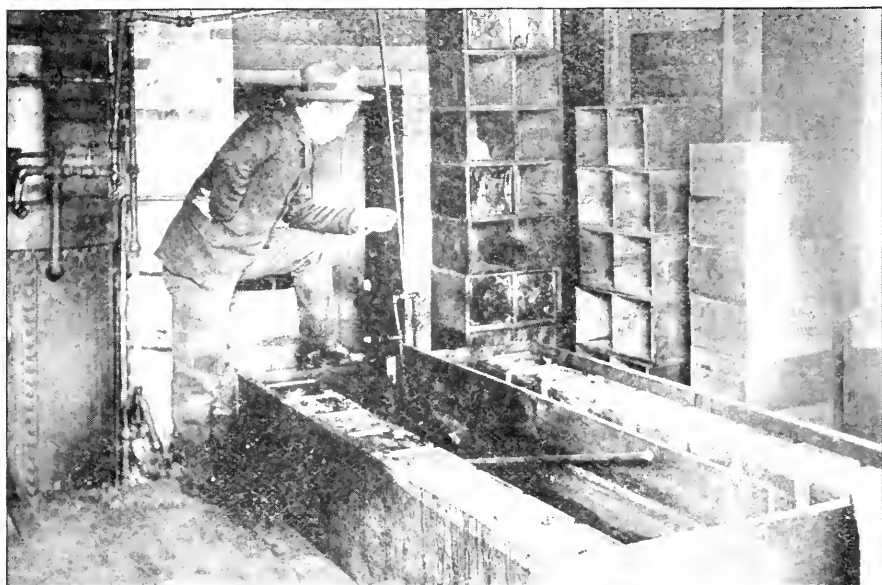
nauling a six-inch piece of galvanized iron to each end, the end of the board being placed in the center of the strip of iron, the projecting wings of the T thus formed are then nailed to the ends of the tank, after the board has been put in place.

The sheet of galvanized iron for the bottom is $\frac{1}{2}$ inch larger, each way, than the size of the tank, and thus projects $\frac{1}{4}$ of an inch on all sides. After laying the sheet of iron flat and smooth on the bottom of the tank, begin nailing near the middle of each side, using 5 penny nails, putting them in zig zag fashion, about an inch and a half apart, and half an inch from the edges of the plank. The bottom is nailed in a like manner to the center-board. The one-fourth inch of iron that projects is gradually pounded down until it is embedded in the wood, thus forming a nice, round, water-proof edge.

It is a great convenience to have the cans tilted slightly, so that the screw cap will be the highest. To accomplish this,

strips of wood of varying height are fastened in the bottom of the tank: two strips, two inches wide, along the center of each division, and a strip one inch in height along the outside edge of each division. The ends of these pieces of wood are nailed to end-pieces that are the length of the width of each division, and the whole arrangement is held in position by nailing fast, or by the use of wedges. Two rows of square, 60-pound cans can be placed in each division, and the pieces of

panying illustration, one of these pipes is raised up in a slanting position, simply to show it. Each pipe has a cap on its end, and fine holes, about six inches apart, are bored the entire length of each pipe. This distributes the steam and prevents the crackling noise. The steam is turned on one side about two hours before it is turned on the other side, as this brings the honey along in two lots, and is a saving of fuel. When the first side has reached the proper temperature, of 145



Liquefying Tank Partly Full of Cans—Taking the Temperature.

wood in the bottom of the tank will give them the desired tilt to bring the screw-caps above the water.

THE APPLICATION OF STEAM.

The steam for heating this tank, also the washing-tank, and for drying the bottles, is furnished by a six-horse power, upright boiler, placed three feet below the working-floor, in a space that is bricked up, and large enough to do the necessary work and hold the fuel. This keeps all clean and safe. The steam is introduced into the liquefying tank by means of pipes that lie along the bottom. In the accom-

panying illustration, one of these pipes is raised up in a slanting position, simply to show it. Each pipe has a cap on its end, and fine holes, about six inches apart, are bored the entire length of each pipe. This distributes the steam and prevents the crackling noise. The steam is turned on one side about two hours before it is turned on the other side, as this brings the honey along in two lots, and is a saving of fuel. When the first side has reached the proper temperature, of 145 to 155 degrees, only a little steam is required to hold this temperature the required length of time, and accumulating steam can be turned in upon the other side. It might be mentioned that there is a half-inch hole in the division board, at the water-line, which is one inch from the top of the cans. As the steam enters the water and is condensed, the water gradually rises, and flows over into the other side, and from that side the surplus can run off through another opening. It requires about 12 hours to liquefy and properly heat, for bottling, honey that is candied. Liquid honey can be prepared

in half that time. This is one of the reasons why we are planning to bring home our honey before extracting it. The extra steam needed in liquefying it after it has candied, will go a long ways towards heating the honey for extracting, and furnishing power for running the extractor.

WASHING AND DRYING HONEY RECEPTACLES.

All our tumblers come in barrels. One man opens the barrels and carries full trays of the glasses to the washing room, where the girls take out the tumblers, and remove the covers, placing them in a box by themselves, and setting the tumblers in large trays holding four dozen each. When using jars having glass caps, we remove the caps and pile them up, the top side up, and keep them covered to exclude dust. These caps are not washed, but are brushed, or wiped. The jars are not removed from the cases until we are ready to wash them, when they are taken out as fast as needed and washed.

The washing-tank is made of galvanized iron: is six feet long, two feet wide and one foot deep, and is placed at such a height as to bring the top level with the elbows. There is also a rinsing-tank which is the same as this, only smaller. By means of steam the water in these tanks is kept as hot as can be borne by the one doing the washing. The one who washes the vessels puts them into the rinsing tank, and the one who removes them from the rinsing tank places them on screens to dry. To dry these jars quickly is really quite a knack. If set in an upright position, the water runs down

and gathers in the bottom, where it is a long time drying out. If the vessel is inverted on a board, or other flat surface, it is practically closed to the air, and there is no opportunity for evaporation. This difficulty is overcome by inverting the jars upon screens of heavy, galvanized iron, wire netting. Each sheet, or screen, is about 26 x 28 inches, bound all around the edges with a heavy wire, the edge of the cloth being rolled over the wire, thus forming a smooth, strong edge. One of these screens may be seen in the frontispiece, leaning against the open door of the liquefying or drying oven. Eight dozen jars may be placed on one sheet, and the sheets filled with jars may be stacked up. We first place a screen on each end of a truck, then a tier of glass, then another screen, etc., until we have a pile as high as we can conveniently reach. A pile similar to this may be seen on top of the oven shown in the frontispiece.

By the way, this oven is made of galvanized iron, is four feet square, and five feet high, and may be heated with steam from pipes coiled around in the bottom. There are ventilators in the top that may be opened to allow the escape of moisture, or surplus heat. This oven may be used for drying jars very quickly, or for re-liquefying any jars of honey that may be returned because the contents have candied. When re-melted in this way, the labels are left on the jars, and unsoiled. This oven is also used for heating the glass screw-caps before putting them on the jars, a step found necessary to make a perfect job of the sealing.

PETOSKEY, Mich., Nov. 23, 1907.



Some Arguments in Favor of Shallow Extracting Supers.

H. H. SMITH

WHILE the different advocates of hives of various depths are airing their opinions, it may not be out of place to say

something more about the shallow super.

Generally, these supers have been recommended for coaxing bees to enter supers

in producing comb honey. It is certainly a most excellent thing to use for this purpose, but I do not produce much comb honey, and I use the shallow super in producing nearly all my crop of extracted honey.

When I first thought of using the shallow super, I balked at the idea of having two sizes of frames in my apiary, and my desire to have hives and supers interchangeable was also an argument against their use. These objections are still present, but are not so inconvenient as I thought they would be.

I made a few supers and placed them with foundation starters upon some of my weakest colonies. I tell you it was a surprise to me when I examined those supers in a few days. The frames were solid full of honey, and capped in a way that would closely rival a fancy pound section. I remember that one of those weak colonies gave me nearly as much honey that season as one of my strong colonies supplied with deep combs. That, and later experience, has converted me to the use of shallow supers.

It is a fact that a comparatively weak colony will enter a shallow super as quickly, and often more so, than a strong colony will enter a deep super; and will come out with about an equal amount of surplus.

If a deep super is given a weak colony, the bees will very often refuse to enter it at all. I have repeatedly found a weak colony occupying only a few frames on one side of a deep super, and when taken off at the close of the season the combs were badly bulged and almost never fully capped. As I said before, such colonies invariably do good work in shallow supers.

The addition of a shallow super is a *gradual* enlargement, and does not materially effect the heat of the colony. It is, therefore, occupied by the bees much more quickly than a deep super, and valuable time is saved. If a colony is strong at fruit bloom, I add a shallow super of combs, or foundation, allowing the queen

of fruit bloom honey, and the additional brood room checks swarming. When the main harvest is at hand, three different things may be done with this super.

1st.—It may remain where it is, and a super placed over it with an excluder below.

2nd. The queen may be put below and a super of combs or foundation placed between the super and the hive.

3rd.—Two supers may be taken from two hives, and put together upon a new stand. Either a laying queen or a queen cell be given, and in a short time this will be a strong colony. If such a colony in two supers be wintered over, and it is desirable to get the colony into a deep hive, I proceed as follows: At the opening of the flow the colony is set to one side, and a deep hive with one comb of brood, and filled out with foundation, put in its place. The bees and queen are brushed in front of the new hive on the old stand, and the old brood nest of two shallow supers put on top of the new hive, over an excluder. This stops swarming, and the supers will catch the honey.

In the above I have tried to point out some of the advantages in using these supers over weak colonies. I find I can also secure more honey in shallow supers from a *strong* colony than I can by the use of deep supers. In using shallow supers over weak colonies the addition of one super is not great enough to lower the temperature of the brood nest appreciably, and the temperature of the super is soon warm enough for the bees to work in. The addition of a deep super is not only too large to warm quickly, but it must lower the temperature of the brood nest. Therefore, a lot of time is lost raising the temperature of both hive and super. Now, this condition also exists when a deep super is given to a strong colony, and, although in a much smaller degree, the time taken in bringing the temperature to a workable height would have been spent in drawing out comb in a shallow super, if it had been supplied instead of a deep one.

By adding one shallow super at a time I often have colonies working in three supers while other colonies seem to be doing their best in one deep super. My shallow supers are just half the depth of my deep ones.

I will admit there are twice as many frames to handle in extracting, but I would as soon uncup two shallow combs

as one deep one. One sweep of the knife on each side does it, and my four-frame extractor holds eight shallow frames.

There is another argument in favor of these supers, one which will grow stronger as the years go by. *Narrow lumber is much more plentiful and cheaper than wide lumber.*

PALERMO, Ont., Feb. 6, 1907.



Bee-keeping Across the Waters is Seldom a Specialty.

J. N. TINSLEY.

BEE-KEEPING in the British Isles, which includes England, Scotland, Ireland and Wales is carried on under far different conditions than it is in America, owing to the climatic conditions. I believe there is not a single bee-keeper who depends entirely upon his bees for a livelihood, but many combine market gardening, poultry keeping, etc., with it. As an illustration showing the fickleness of the climate, take this year's season. I am the recognized lecturer and expert in the County of Stafford for the Staffordshire Bee-keepers' Association, and in my trips to inspect hives and give advice I have seen many apiaries totally devastated on account of insufficient honey to keep them going in the months of June and July, which are generally considered our best months for the gathering of the nectar.

I should first of all explain that England is divided into 52 Counties, or divisions, and in almost each of these divisions there is an Association which is composed of a number of bee-keepers. The average membership of the various Societies I should roughly estimate at 500, but this will not adequately represent the bee-keepers, as many will not join, although it is to their interest to do so. The ad-

vantages are many, but the chief one is to employ an expert to visit and inspect their hives free of cost, and, in the winter months, to take a lantern and lecture in the outlying districts, and thus cause the spread of bee-keeping all through the County. The fee for membership is very little. Now, where we are very much in front of America, is in the way of holding exhibitions of honey, bees and beeswax. Almost every County town has its Annual Flower Show, and we endeavor to persuade the various committees to also hold a competition for honey, etc. Needless to say, this is soon attended to, and the small show continues to grow each year. Our Association then offers for competition silver and bronze medals, and thus greater interest is displayed. Then I attend the show and with the bee tent, which is composed of mosquito netting to keep all the bees inside. I give a demonstration on handling live bees, explaining their habits, how to commence the business, the value of honey as a food, etc. This is generally watched by a very large crowd, and many people take up the business. The Exhibition also induces many to try honey for the first time, and people are also able to see the genuine quality,

thus they are educated against any adulteration. The County of Stafford, by the way, is comprised of 744,984 acres and the population is 1,236,919. Of course, some of the other Counties are much smaller, and the others larger. It should be mentioned that each Association is affiliated to the parent body, viz., the British Bee-keeper's Association which has its seat in London. Here examinations are conducted for the purpose of bee-keepers qualifying for experts. Honey exhibitions are arranged, which are open to the whole of the British Isles. These are held in the Agricultural Hall, London, for a week at a time, and are visited by many thousands of people. All these methods tend to bring hon.e to the British

public the value of honey, and thus it is that the consumption of this article far exceeds its supply, with the result that a large quantity is imported each month from your country and others.

CHEBSEY, England, Nov. 1, 1907.

[The principal reason for publishing the foregoing is as an illustration showing how our British cousins are ahead of us in the matter of organization and association. Honey is so thoroughly and continually brought to the notice of the consumer, that notwithstanding there are 300 bee-keepers in one county, honey must still be imported to supply the demand. Here is an object lesson that we Americans ought to heed.—EDITOR.]



Helpful Hints on Extensive Bee-keeping

E. D. TOWNSEND.

A BEE-ESCAPE is used in freeing our supers of bees, when taking off our comb honey. It will not do to smoke the bees out of comb honey, as I told you to do with extracted, as the honey would taste and smell of smoke, were we to use it to extremes. As we pry our super loose, just enough smoke is used so as to avoid stings; then, with the left hand, lift up the back end of the super, with the right hand place the bee-escape board in position, push it forward towards the front of the hive until it comes in contact with the super; now lower the super square down upon the escape-board, then push them both towards the front until they are even with the hive; first blowing in a little smoke, in front, so as not catch and kill bees.

We take off only one super at a time with an escape-board; in this way we are

quite sure to have our supers free of bees the next morning.

BEE ESCAPES SAVE DRIP.

Then there is another reason for using an escape-board, instead of using smoke; that is, the drip from the broken combs, when prying the super loose, is all cleaned up, so that when we pile our supers up in the honey house, the honey will not drip all over the next super below, thus soiling our nice white sections.

Some go to the expense of providing a paper to be placed between each super in the pile, to catch the drip. Better use the escape-board.

HAVING SECTIONS AND SHIPPING CASES NEAT
AND CLEAN.

We buy shipping-cases with three inch glass; then do not nail them up until we know how many we will need, and do not

na; a single one more than we think we will need, as they soil so easily; and carried over from one season to another are fit only for No. 2 honey.

When opening a crate of shipping-cases, the first thing to do is to sort out the different pieces, and put in piles by themselves. The covers and the bottoms are the same. These are sorted over, and the smoothest and whitest, or best half, put in piles by themselves, and used for covers.

Then there are usually a few that are not suitable to case up our best honey in; these stained-shipping cases can be used for our shipping-culls, or they may be good enough to use in shipping our No. 2 honey.

We always buy the best No. 1 white sections; then we like to case them up in the best possible shape, and to do this we have to assort our shipping-cases, as the majority of shipping-cases on the market correspond more nearly with the No. 2 section, rather than the No. 1 section, as to quality.

After going to all this pains to have our shipping-cases clean and nice, it would be folly to crate them up without wrapping them in paper, then turn them over to the railroad, to be loaded into a coal car, just as likely as not!

At any rate, our honey gets to market in nearly as good shape, as to cleanliness, as when it left the honey house.

SELLING COMB HONEY BY THE CASE INSTEAD OF BY THE POUND.

This brings me to an other point. A few years ago the retailer used to buy his comb honey by the pound, and sell his sections by the piece. Now the *jobber* wants to buy by the *pound*, and sell to the retailer by the *case*.

Now there is just one more step, and that is for the producer to grade his honey so *he*, also, can sell by the *case*.

The only draw-back to this way of casing, is the necessity of so casing that all the cases in a certain grade weigh somewhere near the same.

Our 4x5 x 1 3/4 sections are cased in

20-section shipping-cases; the cases weighing from 17 to 19 pounds net, during the main part of our honey flow; then, towards the close of the honey season, when the honey is not coming so fast, they are finished more lean, and weigh from 15 to 16 pounds net, per case.

The No. 1 and fancy honey, was all cased together in one grade. This might not be good policy, unless one knows what he is going to do with it; in our case it was sold, and graded according to instructions.

If there had been a No. 1, and a fancy grade, there would have been more variation in weight; the fancy would have weighed 18 to 19 pounds net, and the No. 1 would have weighed, say, 15 to 18 pounds net.

Fancy comb honey that would weigh, say, 18 pounds, on the average, to the 20-section case, with a minimum of 17 pounds, would work all right to sell by the case, as far as I can see; then the No. 1 could weigh, say, 17 pounds, average, and a minimum of 16 pounds.

This would put some of the light weights, otherwise No. 1 stock, into the No. 2 stock.

Now, right here, comes in about all the advantage that I can see, in selling by the case, over selling by the pound, and that is, any one, no matter what the idea might be about grading, would be *compelled* to keep the short weights out of the No. 1 grade.

While I have always sold our comb honey by the pound, I am quite in favor of selling by the case; and this year (1907) we will make three grades, with the idea of selling by the case; then, if I should make a failure of selling by the case, I could fall back on the old way of selling by the pound.

Last year, (1906) out of a crop of 2300 pounds of comb honey, we had only three cases of No. 2 honey. Were we to have graded on the above basis last year, there would have been several light weights, No. 1's to go in with the No. 2's. I do not know how many cases we had

last year that would have weighed less than 16 pounds, but there were quite a number however, that, if they had been sorted out of the heavier grades, would have had to have been sold at a less price than we got for our crop straight; and this difference would have had to have been made up by an additional price being charged for the better grades. Now, the question is, which is the better way?

GRADING AND PREPARING COMB HONEY FOR MARKET.

From the time the honey is taken off the hive, until it is cased up and ready for market, we keep our comb honey covered up, away from the light and the flies. The light tarnishes the basswood sections, and shipping-cases.

As our comb honey is taken off with bee-escapes, there will be no trouble about the sections being sticky with honey, as the bees have already cleaned them, when freeing them of bees.

We have found nothing better, for cleaning off propolis and the small particles of comb, from sections, than a large bladed jack-knife. To work to the best advantage, it should be ground to a smooth edge, free from "nicks," but not too sharp, as, if it is too sharp, it will cut into the wood too readily.

Every section is cleaned perfectly. Not only is the propolis and particles of comb cleaned off, but the travel-stain is also mostly scraped off.

Usually we make three grades of our comb honey: a fancy, a No. 1, and a No. 2.

Generally speaking, our fancy grade needs the least cleaning. Then comes the No. 1, which is in a little worse condition; then the No. 2. This last grade, usually the last to come off the hive, will have more propolis than either of the other two grades.

We open a super of honey, and take out the first section. A glance tells us which grade it belongs in. If it should grade fancy, we take particular pains to see that it is cleaned, not only of propolis,

but the wood is also scraped until it is white.

The No. 1 is cleaned with nearly the same care as the fancy.

The No. 2 is cleaned of propolis, and particles of comb, but we do not take the time to scrape the wood.

Five no-drip shipping-cases are placed in the best positions, for convenience. Two are for the No. 1 and fancy grades; one for the No. 2, one for the "shipping-culls;" then there are some culls, caused by accident, or by being attached to the separators, etc. This last mentioned grade can be given to the neighbors, or chopped up with the cappings.

The grade we call "shipping-culls," are those not attached to the section sufficient to stand shipment. They are mostly the product of the slow flow, during the last end of the season; and when grading this part of the honey especial care is taken not to get any of these in with the honey that is to be shipped. Sell shipping-culls at home.

In weighing cases, pile 10 on the scales and weigh; then divide the product by 10, which will give the weight of one. This is near enough, and saves weighing each case separate.

Now we want everything neat and clean about our comb honey. You know we are going to wrap every case in paper before shipping; and we do not even want to soil them with writing, or figures. There is not a particle of use of having anything written on a case, except the net weight.

This net weight is marked on a piece of card-board; just the simple figures, nothing else.

Then, just as likely as not, the jobber who sells to the grocer, would just as leave the grocer did not know how much the cases weighed. In this case, with a jack-knife, he pries out the one small tack that holds the mark, and there you are, a perfectly clean case, no marks, nor other indications that the case has ever been weighed. This is the way the jobbers want it, when they sell by the case.

DON'T PUT MARKS ON SHIPPING CASES.

As soon as the crop is cased up, before there has been time for the cases to become soiled, crate it up in carriers, ready for the market. Then mark the net weight of all the cases it contains, on the outside.

More than 25 years ago, we learned better than to put the gross, tare, and net weight on our cases. We once took a case of comb honey, so marked, to a grocer, and he set the case on the scales, and the weight was a few ounces short.

This was embarrassing; and the only

thing I could do was to allow the shortage and lay it to the variation in the scales.

I was not satisfied however; I was *sure* my scales were correct; and I had no reason to think the groceryman's scales were unaccurate.

On my way home I thought of how *damp* those cases were when nailed up and weighed; this was the secret, *the case*, not the *honey* had shrunk. Mark the net weight *only* on your comb honey cases.

REMUS, Mich., Feb. 4, 1907.



Some Experiments and Prospects With Plurality of Queens.

H. S. PHILBROOK.

I HAVE worked at bee-keeping about 27 years, and now have something over 350 colonies, but am something of a greenhorn at writing for publication, however, I see so much being said about plurality of queens, and the results, that I am led to give my experience in that line.

MANY QUEENS LOST IN EXPERIMENTING.

I expect I have lost fully 1,000 queens in my various experiments, and let me say right here, to begin with, that if Mr. Alexander succeeds in keeping a plurality of queens in his hives over *winter* and *spring*, he has a gentler and more tractable lot of bees than most of us have.

A SUGGESTIVE OCCURRENCE.

In the spring of 1905 I found a plurality of queens in one hive; and it occurred in such a strange manner as to set me to studying on the possibility of keeping a plurality of queens in all colonies. The plurality occurred as follows: Having lost the old queen in this colony, from paralysis, I placed two ripe queen cells in

the colony when the honey flow was at its height; and, later, found two young, *laying* queens on the *same comb*.

I next put two laying queens in a large cage, when there was immediately a fight, to the death of one of them. I then removed the live one, and with my cuticle scissors, clipped the tip off her sting; and having treated another queen in the same manner, I put them together in the cage, and watched the result. There were numerous vain endeavors to sting each other, but, in the course of 15 minutes they seemed to realize their inability to sting each other, and I then put them into an introducing cage, and introduced them to a queenless colony in the ordinary way. Both were accepted, and got on together nicely, as long as the *honey flow lasted*, but as soon as the bees began preparing for winter, one came up missing.

CLIPPING STINGS AND MANDIBLES.

The following spring I tried mating several virgins from one colony, by clipping their stings. They would fight until they

had nibbled both wings off close to the body; so, that would not do.

Next, I also clipped just the horny tip from one mandible of each of four virgins, also cutting off their stings, and I succeeded in mating three out of the four, all from one hive. The other one was lost in mating.

The bees did not molest the queens, but I never saw bees so non-plussed. They would rush out at the front, and then whirl round as though in search of an enemy, and crosser bees I never saw until the queens were laying; after that, peace reigned.

MATING SEVERAL QUEENS FROM ONE HIVE.

Since then I have frequently mated two or more queens from one hive, with varying success, by simply clipping mandibles and stings.

I have no trouble during a honey flow, in introducing several queens to the same colony, using the ordinary cage, and clipping their stings, but I never yet had them *winter over* together—it is not the queens' fault but that of the bees.

I have never had queens that would not fight, although I have tried daughters from queens secured from many of our leading bee masters, including G. M. Doolittle, whose queens come as near being docile as any I have been fortunate enough to try.

In my experience, two or more queens

in one hive will not *always* prevent swarming. I had one colony last year, with two queens, that produced nearly 800 pounds of extracted honey; then, just at the close of the season, it swarmed. Only *one* queen came out with the bees; and, she being clipped, I accidentally stepped upon her. Then the bees returned; killed the other queen; dragged her out; then waited for the virgins, and swarmed with them.

WHAT MAY BE HOPED FOR FROM PLURALITY OF QUEENS.

There is a promise of value in the dual system, as it greatly increases the product in a locality having a long honey flow, where there is warm weather so that the brood can be taken care of. Give such colonies plenty of room and, my, what armies of workers they will produce! Consequently, there is a wonderful yield of honey as the result.

TWO QUEENS WON'T WINTER OVER IN THE SAME COLONY.

But you must not expect both queens to winter over; therefore, it means the raising of a lot of queens *each spring*, only to see them killed off in the fall, like so many drones.

You are "all right" in advising a person to make of his business a specialty, but I don't know about keeping "more bees." Help is so "independent," and difficult to get.

OXNARD, Calif., Nov. 16, 1907.



Why the Clipping of Queens Is Undesirable.

R. L. TAYLOR.

THE editor requests me to write an apology for the statement recently made by me that clipped queens are an unmitigated nuisance in swarming time.

SUPERSEDURE AND ACCIDENTS MAKE CLIPPING A BROKEN REED.

The chief argument for the clipping is that it prevents the escape of swarms, but

it is pertinent to remark that if relied upon too implicitly it might prove a broken reed. If the swarm has a well clipped queen only, and there are no flying queens outside to unite with it, clipping is certainly effective; but there can be no guaranty of such conditions. Queens are superseded; accidents happen to them, sometimes, and young queens are reared, and a swarm issuing in such circumstances would, of course, be lost if the fact that a former queen had been clipped were alone relied on.

SWARMS WITHOUT QUEENS LIKELY TO MIX
WITH OTHER COLONIES.

In the first place, swarms issuing with a clipped queen conduct themselves in quite a different manner from that of those having a perfect one—the latter clustering quickly and completely, as a rule, and if another swarm is out and clustered, are not liable to discover and cluster with it; consequently, they may be secured and promptly hived, while the former, in their search for their queen, hunt the premises over, and if there be a swarm out are sure to find and unite with it, and by their dilatoriness give abundance of time for other swarms to issue and unite with them. Often they will not cluster at all, and if there has already been any swarming that day, they generally make persistent efforts to adopt the hive of the former swarm; and if there have been several previous swarms the same day, only the most skillful and rapid management can prevent a general mix up. The bees are not only persistent in their attempts to enter strange hives, but, in spite of all, are more or less successful; so that often when one, by the use of sheets and smoke, imagines he has done a good job in his efforts to defeat their attempts, he finds later that one-half or two-thirds of the swarm have circumvented him.

With these facts in view, the stories of those apiarists who practice clipping, of the big yields of single colonies, and of their method of selecting breeders by the quantity of the product of their hives, are

calculated to excite mirth rather than admiration.

CONSIDERING THE FACTOR OF TALL TREES
NEAR THE APIARY.

It may be objected that sometimes the trees about an apiary are very tall, so that it would be almost impossible to recover swarms if they were to have queens, and that it would be better to let two or three per cent. go, and get the rest without effort, than to expend the effort necessary to capture each swarm. But in an apiary where there are several swarms in a day, there are other things to be considered. If one swarm should cluster in a tall tree out of reach, subsequent swarms could join it, and, at last, if a flying queen should happen to join the cluster, all would desert together; or, if destitute of a queen, would return in a body to some hive where they were not wanted, and make no end of trouble. However, swarms are not by any means partial to high trees, and it is very seldom that they will cluster out of reach. To so place the apiary that a number of small trees, but no tall ones, are in and about the apiary would be an advisable and sufficient remedy.

There are some apiarists who seem to think that an apiary can be managed during swarming without the presence of the apiarist, by simply clipping the queens. In my view, such a course would be simply disastrous. In addition to the disorganization already mentioned, there would be the inevitable loss on account of the sulking of the bees; and then in a few days the young queens would begin to emerge, and, as a matter of course, would lead the swarms to pastures new. Even a semi-weekly visit would not be an adequate remedy, for it would not be practical to determine with certainty which colonies had cast swarms.

A QUEEN-TRAP HAS ADVANTAGES OVER
CLIPPING.

What, then, it will be asked, can be done to secure the advantages supposed to be derived from the clipping of queens? The best answer I can give is, a good

queen-trap. This will by no means supply the place of an attendant, except, perhaps, for limited periods: say, three or four days, but it has several important advantages over clipping. It will not prevent altogether the mixing of bees, but will greatly mitigate it, because the queen, being caught in the trap, with a considerable retinue, will generally furnish an attraction that will recall the bees to their own hive; then the trap will be crowded with bees and will remain so until the visit of the apiarist, in the course of two or three days, when this condition will direct him with ease and certainty to the colonies that have cast swarms, so that any remedy he chooses can be promptly applied.

Another advantage not to be overlooked

is that the trap is as effective with virgin queens as with the others -- in other words, the trap prevents the escape of swarms while clipping does so only partially.

It only remains for me to say that I think I have made out a good case against clipping queens, but I have drawn my facts mainly from the conduct of my own bees and from conversations with a few other bee-keepers, and it may be that there are other bees in other localities that conduct themselves so differently that other rules may be applied than can be successfully used with bees having the traits mine possess, and the fortunate owners of such will, of course, adopt measures appropriate to their case.

LAPER, Mich., Nov. 19, 1907.

Editorial

Youth hopes; old age remembers.

.....

Canadian subscribers will please send \$1.10 for the Review for 1908.

.....

Foreign subscribers, except those of Cuba, Mexico, Porto Rico and Hawaii, will please send \$1.24 in renewing their subscriptions.

.....

Election of National officers resulted as follows: President, Geo. E. Hilton; Vice President, Geo. W. York; Secretary, W. Z. Hutchinson; General Manager, N. E. France; Directors, Wm. McEvoy, E. W. Alexander and R. G. Aikin.

.....

The Canadian Bee Journal, since passing into the hands of the Hurley Printing Co. has taken on a new life in a wonderful way. If the present excellence is maintained, it will become one of the best bee journals ever published in Canada.

Avoid the Cheap.

Some people, when travelling, look for a cheap hotel or restaurant; when buying clothing, they select something cheap; in buying a watch, or any tool, or even in building a home, this same "cheap" policy is kept in view. The result is a cheap man, with cheap ideas and ideals. I am no advocate of reckless *extravagance*; but, as a rule, the *best* is the most profitable and satisfactory in the end, and by surrounding yourself with the best, you are unconsciously influenced in becoming a first-class instead of a "cheap" man.

.....

By Express is a very poor way to ship comb honey. A bee-keeper complains in the American Bee Journal of his honey being smashed when sent by express. The rapid handling of express packages is what causes the trouble. Freight shipments are handled more leisurely, and if properly packed in large crates, adorned

with cautionary labels, comb honey is much more likely to reach its destination safely than when sent by express. Why honey is ever sent by express I can't imagine. The rates are very much higher, and damage is always sure to follow.

Plurality of queens is the subject of a very interesting article in this issue of the Review. The clipping of the queens' stings and mandibles is certainly novel, if not entirely new. This whole thing is turning out about as I predicted, viz., that it is possible to introduce two or more queens to a colony during a honey flow, but all except one will disappear with the end of the season. Whether it will prove profitable to rear and introduce an extra lot of queens each spring is yet an open question, with none too hopeful an aspect, but I would not like to say that nothing practical will come of it.

Superseding Queens, whether it shall be left to the bees, or attended to systematically, by the bee-keeper, has been for a long time, an open question with me. I did think that Messrs. Taylor and Townsend had settled it for me, in favor of leaving it to the bees, and I believe I said as much in the Review, but, since then, I have received articles on the other side containing arguments that I believe are at least worthy of consideration. They will appear in early issues of the Review; and judging from present indications, this topic is going to bring on one of the hottest discussions that has appeared in the Review in years. Let it come. Either one class or the other is losing money — let's find out which one.

Receipts are not sent when renewals of subscriptions are received. To do so would entail a large and needless expense of money and labor, as the change of date on the wrapper label answers every purpose. If the date on your wrapper is "Dec. 07," it shows that your subscription

expires with that date. When you send in your renewal, notice if the date on the next issue isn't changed to "Dec. 08." If it is so changed, it shows that your renewal was received.

Canadian subscribers will please remember that the Review for 1908, and thereafter, to Canada, will be \$1.10. To other foreign countries, except Mexico, Cuba, Porto Rico and Hawaii, the price of the Review is \$1.24.

Avoid Excuses.

The older I grow the less inclined am I to take refuge in excuses. It is better to avoid the occasion for excuses. To illustrate: Mrs. Hutchinson ordered some groceries by telephone. Some of them were needed in getting dinner. We were just sitting down to the noon day meal when the grocer's wagon drove up. A prolonged search revealed the fact that only a part of the order had been put up. As a result, we ate our bread without butter. The groceryman was very profuse with excuses: he was short of help, etc. He may not lose our trade as a result of the mix up, but such mishaps have a tendency in that direction.

Sometime during the last year, one of the photographic magazines had a little editorial on this subject. It said that some artists were inclined to make excuses why their pictures were no better. If the light had been better, or the exposure longer, or the point of view a little different, or the plate developed a little further, or of a different brand, and so on, why, then, the picture would have been all right. This was probably true, and might be interesting to know, but it *didn't make the picture any better*. That a picture is poor is a fact, and no amount of excuses will save it.

If bees die in winter for lack of stores no amount of excuses will bring them to life.

The point is, learn your business so completely, do your work so thoroughly, and guard every point so closely, that there will be no occasion to use excuses.

Don't Lose Your Enthusiasm.

When a man starts in a new business, it is usually with more or less enthusiasm. If it is a store, he paints the front, has a brass band at the "opening," gives away souvenirs, etc. If he buys out a newspaper, there must be new type, cases and presses, additional correspondents, etc. If it is a farm he has bought, fences are repaired, stumps pulled, buildings painted, and so on to the end of the list. Now, all these things are commendable, and the pity is they are not continued. As the weeks and months slip by, the new business becomes an old story, interest flags, and everything drops back to the common place level—enthusiasm dies out.

If a man could and would hold his enthusiasm, and keep pushing his business right along, year after year, just as he does at first, how it would grow and boom. Some men *do*, and then come the big successes. Instead of selling your business, and starting in anew, stay by it, and work up, arouse, and start afresh, some sort of an enthusiasm for the business in which you are already engaged. Use the energy and capital required to make a change, and put them into the present business. Just imagine that you have only now acquired the business, then look about you and see what changes and improvements you would have inaugurated in that case. Cherish an enthusiasm for your business as you would your choicest treasure.

The Price of the Review has been referred to several times in these columns; but the Review has many new subscribers, and, if I refer to it again for their benefit, I trust old subscribers will pardon me.

The Review enjoys the distinction of being sold at the highest proportionate price of any bee journal published in this country, and there is a "reason." It has no connection whatever with any supply trade, or any other business, and must depend, for its existence, solely upon the

profits that accrue from its publication. Of course, its editor might take up the supply trade, but his tastes are not in that direction, and he prefers to keep his mind wholly unbiased by the influence of trade.

Then, again, the Review has become what might be called the specialist's journal; that is, it appeals most strongly to the man who is keeping bees to make money; hence, it can never hope for more than a moderate subscription list.

For these reasons it can't be published at less than its present price; but, the man who really needs it, the one who is keeping bees as a business, as a specialty, or even as a money making side-issue, is only too glad to get the paper even at \$1.00; as the knowledge thereby gained brings to him many dollars in the course of a year.

In closing, I can say, with pleasure, that, although the Review has long been published on this platform, it never was more prosperous, had more subscribers or brighter prospects; and, let me add, never was brighter nor better.

Change of Date in the time of issuing the Review will be brought about as soon as possible. The middle of the month was originally chosen because the other bee journals came out the first of the month, and I wished to place the Review in the hands of subscribers at a time when they were not over-burdened with other reading. Gleanings now comes out the middle of the month, as well as the first, and the American Bee Journal also comes out the middle of the month, hence there is no reason for not getting out the Review the first of the month, and there are some reasons why the latter date would be preferable.

No matter how many times I explain the matter, a large number of subscribers continue to complain that the Review is "behind;" that it does not reach them until past the middle of the month. Most magazines of a general character reach

their readers the first of the month, and the consequence is a feeling that *all* magazines ought to come out the "first."

An advertiser sends in an announcement making some special offer for July, for instance, ordering his advertisement to appear in the July issue. The result is that the month is more than half gone before his announcement is before the readers. This is only one instance of how this "lateness" of issue plays hob with advertisers.

Again, considerable effort is made to have each issue seasonable to tell things in October that can be put in practice during that month—and if the paper does not reach its readers until the month is more than half gone, the seasonableness becomes a little out of season.

It may not be possible to get the January issue to readers as early the first of the month, but we will come as near to it as we can—the February issue certainly ought to be out on the first of the month.



Michigan State Bee-Keepers' Convention

The first session will be on Wednesday evening, December 18th. There will be three sessions on Thursday, and two sessions on Friday, the meeting closing on Friday afternoon, December 20th.

Headquarters will be the Sherman House; the rate \$1.50 per day. The meetings of the convention will be held in the convention room in the City Hall of Saginaw through the courtesy of the city and the Board of Trade.

There are to be some excellent speakers, all of whom we cannot announce here. Mr. R. F. Holtermann, of Brantford, Ont., will have the subject, "Cooperate Experiments in Apiculture;" Mr. L. A. Aspinwall will talk on the subject, "A Year's Experiments;" Mr. W. J. Manley will take the topic, "Winter Losses," dealing particularly on how to turn them to best advantage when they come. F. J. Miller, of London, Canada, Mr. E. D. Townsend, Remus, Mich., and also Mr. W. Z. Hutchinson will be on the

program. There are also several very interesting questions for general discussion.

We stand an excellent show of getting the next National Bee-Keepers' Convention to come to Detroit. We want to make plans for this at Saginaw, especially to make the attendance of Michigan Bee-Keepers so large that it will be the best National Meeting ever held. Let us make them glad they came.

The fare is two cents a mile straight; no trouble with certificates, no difference as to how many go. Take note that this is the same as our old one and one-third fare.

Will you also help out the exhibit? We want to make a special feature of it this year, and we want every member to make an entry for at least one premium. Best single section of Comb Honey—

One Advance Bee Veil by The A. G. Woodman Co.

Best six sections of Comb Honey—

500 Lewis sections by The A. G. Woodman Co.

Best 5 lbs. Beeswax—

One Hilton Hive by Geo. E. Hilton.

Best 5 lbs. Extracted Honey—

Choice of one year to Review or copy of *Advanced Bee Culture*, W. Z. Hutchinson.

Best suggestion or plan for increasing membership in the Association; same to be in writing, and not more than 150 words—

One copy de luxe edition of new *A B C of Bee Culture*, M. H. Hunt & Son.

Best new apicultural invention—

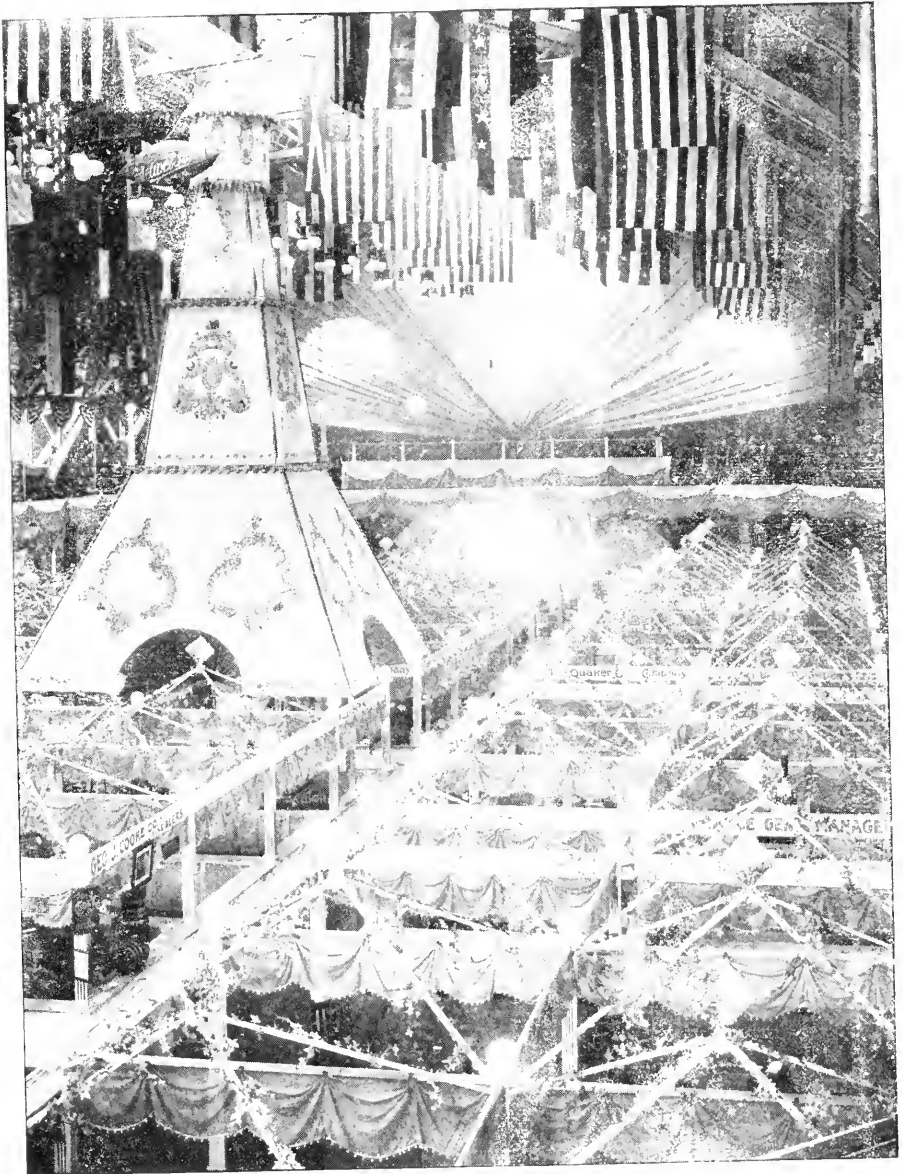
500 Sections by Langst & Koenig, Saginaw, Mich.



The Chicago Pure Food Show.

It is said that the Coliseum at Chicago has the largest floor-space, of any one room, in the world; and from November 23rd to November 26th it was occupied with the first annual Pure Food Show.

The booths were uniform in size (14



General View of the Pure Food Show from the Balcony of the Coliseum.

feet square.) arranged in three double rows, with alleys between the rows, and three cross-alleys. The decorations were yellow and green, with imitation autumn leaves twined over the rafters that ex-

tended from the corner posts of each booth to the center. The building was lighted with both incandescent and arc lights, and there was one incandescent light, enclosed in a ground glass globe, at

each upper corner of every booth. In the center of the building, reaching to the dome, was a miniature Eifel tower of dark grey, having red and green transparencies in its sides, the interior being strongly lighted with electric lights.

The view from the gallery of the building was delightfully novel and beautiful, reminding one of a glimpse into fairy land.

What was there on exhibition? Almost everything eatable and drinkable; and most of the booths were presided over by fair "demonstrators," with fluffy curls.

All around the sides of the building were booths rented to persons having some novelty to sell. By waiting ten minutes you could get three souvenir postal cards adorned with your portrait; for 25 cts. you could get a phrenological reading of your cranium, made by an ingenious, automatic machine, and, with scarcely any effort, a man could load himself down with vegetable slicers and parers, knife sharpeners and can openers, Japanese vases, pop corn fritters, or "Kotton Kandy."



Display of Honey at the Chicago Pure Food Show.

bright eyes, smiles, ribbons and laces, and enthused with a boldness, natural or acquired, or both, that was sometimes more or less of a shock to the sensibilities. Sandwiches were given away to show the superiority of Mr. Somebody's flour; samples of sausage followed the same fate; the various breakfast foods were served with sugar and cream; and a visitor could easily drink his fill of the various coffees and other beverages.

Yes, thanks to the money raised by the bee-keepers' League, and later turned over to the National Association, the bee-keeping industry was creditably represented by a display of honey one that compared favorably with the other exhibits. The use of the honey was contributed by different members of the Association; it coming from 15 different States and five foreign countries. After the show was over, the honey was returned

to the owners, the Association paying transportation both ways.

The accompanying illustration shows everything so clearly, that little remains to be said; unless it might be to say that the pyramid is eight feet square at the base, 12 feet in height, and is surmounted by a tall bottle of honey like those shown at the corners, near the base.

It is probable that the advertising value of the exhibit might have been enhanced by following the course of the other exhibitors, viz., by giving away tastes of honey on dainty crackers, or in some such manner, also by selling dime packages; but the manner in which the honey was secured precluded this feature.

The A. I. Root Co., has been rejoicing for a few months in a new office building and printing office. When at Cleveland, while on my way to the Harrisburg convention, I took a run down to Medina, and made a visit of a few hours; one object being that I might enjoy the seeing of this new building and its contents.

From the foundations to the roof—floors, wall and partitions—the material is cement. The roof, where it is not of glass, is covered with asbestos. The sprinkler system of fire protection has been inaugurated—when the temperature of a room reaches a high pitch a waxen plug melts and water rushes into the sprinklers overhead, coming down in a great shower, extinguishing any fire that is started. The one great danger of any factory, is fire; and any firm who neglects to take every precaution, and to provide all possible means of putting out a fire, takes great risks.

A printer's heart would be delighted by a visit to this office. First, the sky-lights make it seem like working out of doors, so far as light is concerned. Then the floor is just as solid as mother earth—not a particle of jar or vibration even from the running of heavy presses. Then there is plenty of type, leads, etc., all arranged in cases of a labor saving nature. Most

of the workmen are experienced men, some of whom have been here for years. Considering all this it is not to be wondered at that Gleanings comes out so regularly, and so neatly printed.

Just one more word in closing: As Ernest Root was showing me through the printing office he mentioned that the printing of their catalog and price list was something like a woman's "knitting work;" it was picked up at any time when the presses were not busy with other work. Continuing, he said: "Some wonder why we are so successful, why we secure so much business, it is because we are everlastingly sending out this catalog. Some manufacturers think they do well if they send out a price list once a year; we are sending them out all of the time. That's the secret, and any advertiser is welcome to all there is in it."

Helpful, Inspirational Items.

It has probably been noticed that the Review occasionally contains an item having no direct bearing upon bee-keeping, and some may wonder why such matter is used. Knowledge of bee-keeping, alone, is not all that is needed to succeed. The better the man, the broader his views, the greater his initiative enthusiasm and perseverance, the greater his success in *any* business. He must *first* be a man of the highest type, then a bee-keeper. Instructions as to the wintering of bees, the prevention of swarming, the putting on of supers, the extracting of honey, and all that, are proper subjects for discussion in a bee journal, but above all this is the ability to think, and plan and execute. Before a man can succeed he must first *think* success, and believe in it. The attitude of the mind has a great bearing upon success.

To succeed, a man must have the right kind of "spirit"—that mysterious compound of self-possession, and confidence, and grit, and dash, that comes and goes mysteriously, and brings or takes away the mettle and fire of life.

It sometimes seems as though I had been a boy nearly all of my life, that it is only of late that I had become a man, awakened, and gained broader views, and fully grasped the opportunities and possibilities of life. I know that I am accomplishing much more than I ever have in the past, and it comes largely from the state of mind that has been encouraged and fostered.

Now then, I wish to instil into the minds

of my readers these happy, hopeful, enthusiastic, progressive germs of thought; I wish them to rise up and do greater things, and it is to this end that I occasionally write, or cull, an item intended to arouse, or inspire, or cheer; but, if there is any subscriber who doesn't care for this kind of reading, I would esteem it a favor if he would write and tell me; as, to help and please my readers is my only aim.

EXTRACTED DEPARTMENT.

SUBTLE DIFFERENCES IN COLONIES

Some Conditions Under Which Bees Store the Most Honey.

What bee-keeper has not noticed that when everything *seemed* to be apparently equal, some colonies stored a much larger surplus than others? It often happens that a colony weak in numbers stores more surplus than the most populous colony in the yard. Even in some poor seasons, some colonies store a fair surplus. I remember that, one year, one of my colonies stored 75 pounds of surplus comb honey, while the average was less than 40 pounds. Some colonies did not go much over 20 pounds, each. Who hasn't noticed these things, and wondered why? If we could discover the why and the wherefore, and apply the remedy, so that all colonies would come up to the high water mark, what a stride it would be.

Nearly a score of years ago, Mr. C. J. H. Gravenhorst, of Germany, worked out this problem to his satisfaction, and published the results in his paper, and the Rev. C. Spaeth, of Brene, Michigan, translated the article and sent me a copy of the translation, and I published it in the Review at that time; but the Review now has thousands of readers that it did not then have, besides, the points brought out are sufficiently valuable to bear repetition,

especially as correspondents are now bringing forward some of the same points. The extract from Mr. Gravenhorst's article reads as follows:

There are not many attentive bee-keepers of long experience who have not noticed that in so-called poor seasons one or more of their colonies not only stored enough honey for its own use but perhaps even a surplus; while the majority of colonies may not have secured even sufficient for their winter stores. Likewise, in a good season it must have been noticed that some colonies give an astonishing surplus in comparison with others.

These results are the more striking if all the colonies had access to the same pasture, and if the work was carried on under seemingly exactly the same domestic conditions as regards combs, hives, strength of colonies, etc.

Even in the beginning of my business as a practical bee-keeper, it often happened in a poor season that three or four of my colonies in the round straw hives with no frames had more than enough for winter, while the majority, often stronger in bees, had not sufficient for winter. Then in a good honey flow I often observed that some of the small colonies went far ahead of the stronger ones. I have had four-frame nuclei give me from ten to twenty pounds of extracted honey in a season, while others of the same strength, and stronger ones, gave me scarcely as much. Still more remarkable seemed the fact that small queen-rearing colonies that had in the aggregate not more comb than one full sized frame, little by little at a time, would finally yield five or six pounds, or more, of honey, while others in

apparently the same condition gathered only their daily supply. In the face of all this, the assertion is frequently heard that only strong colonies yield a surplus!

When such results come about with the colonies, combs, hives and pasturage apparently the same, there must be other factors not so easily discovered. By repeated examination and observation I have learned that there exists a certain *condition* under which a colony will gather the most honey whether it be strong or weak. If this condition has not yet been reached, or if it has been passed, the storing of surplus will be neglected or at least carried on only moderately.

That being the case, the question naturally arises, what is this condition? By an exact examination there will be found five central points. Three of these are well-known to first-class bee-keepers, and they are mentioned only that I may be able to give a complete statement, and in my second part be able to refer to them if desirable.

1- The ideal colony must have a faultless queen; hardy, sound of body, and above all things, fertile, and her progeny distinguished by diligence.

2- Nevertheless, such a queen alone does not make an ideal colony. At the right time, that is, when honey is coming in freely there must be plenty of empty comb that no time nor honey be lost in building comb.

3 Our ideal colony must swarm at the right time or not at all. It swarms at the right time when it swarms so early that the queens of the after-swarm, if such are allowed, become fertile, and the first or prime swarm has its combs completed, before the opening of the main harvest.

4 -The ideal colony must not be over-populous. A hive is over-populous when its working force is too great in comparison to the dimension of the hive and to the number of wax-building bees.

Such a condition is intolerable to the bees and they try to help themselves by loafing. Their instinct teaches them to begin this loafing even before the hive is over-populous. The bees seem to see that the combs are filled and capped, that bees are daily hatching and that they will soon be crowded. A colony in such a condition will never perform the wonders in gathering honey that we may expect from one less populous. Such a colony feels instinctively that its abode will soon be too small, and the swarming fever sets in, and we know that when that is awakened the bees will continue to loaf. At the most, only as much honey will be

gathered as is needed for making the swarming preparations. A colony with the swarming fever is of little value as a honey gatherer.

5--The best honey gathering colonies are not kept at home during the best honey flow by the nursing of too much brood. If there is too much brood in proportion to the working force, most of the honey gathered will be consumed by the brood. The bee-keeper whose bees rear a large amount of brood during the main honey harvest, or near its close, will find, as he stands before his colonies at the close of the harvest, that although they are strong in bees and the combs faultless, the latter will be *empty* and will stay so.

A queen may be faultless in the fall, and fail in the spring. To discover this failure early in the spring and give the colony another queen is all-important. To introduce a queen with no danger of loss, remove the poor queen and all of the combs, giving the latter to some colony that can care for them temporarily. Allow the bees three or four frames with starters only. Give them the new queen in a cage. Watch closely and see what kind of comb they build. If it is drone comb they will not accept the queen. Cut it out and let them start again. If no honey is coming in they must be fed. When they begin building worker comb it is a sign that they have accepted the queen and it is safe to release her. The second day after her release three or four of the brood combs are returned. The remainder are given the next day. As a rule, queens are not kept after the second year. If the colony with the newly given queen does not prove diligent, exchange three or four of its combs for the same number of combs of sealed brood taken from the most industrious colony in the yard.

The second point is that of supplying colonies with abundance of empty combs. When the bees build their own combs there is not only the loss of the honey that is consumed to furnish the wax for comb building, but the bees that are secreting the wax and building the combs could be gathering honey were they not thus employed. I have always worked with all my power to have on hand a sufficient supply of comb, but I must admit that I have sometimes wished that I had more. At such times I would have given much if I could have gotten Warnstorf's combs, but his discovery is of recent date and I was obliged to use foundation which is a great help, but not the equal of completed combs. (The Warnstorf combs

with full depth cells, cannot be used for raising comb honey as they are twice as heavy as natural comb, but they are excellent, strong combs for use in extracting.)

The third point is that the bees swarm at the right time—that the mother colony has a fertile queen and the young colony has its brood combs completed before the main harvest comes. Colonies that make preparations for swarming at the height of the harvest, or towards its close, miss the best opportunity for honey gathering. A swarm that comes late can but build its combs and secure a store of honey for winter, while the parent colony will not become sufficiently populous until the harvest is past and gone. At the end of the season the bee-keeper will stand before his colonies and complain of the average season, or, perhaps, the poor season. The only strange thing about it is that colonies "X" and "Z" have done all that could be wished. At least, they have gathered twice as much as the others. By close searching after the causes of these things the bee-keeper will find that in nine cases out of ten, the colonies that are starving in the spring swarmed at the wrong time, while "X" and "Z" swarmed at the right time. If swarming at the wrong time is the cause of a small crop, then the bee-keeper will not doubt a moment as to what he ought to do. The only point is *how* it shall be done. Of course, we want early swarms, not simply individual swarms, but we want the *whole apiary* to swarm early. To accomplish this, that is, have the whole apiary swarm early and within a period of a week or ten days, those colonies that are in the rear must be helped at the expense of those that are too far advanced. This is done by the exchange of combs. From the time the bees are wintered until the opening of the main harvest, I work with this end in view, that of having them all enter the field equally strong.

During this preparatory period, many of them build combs. Of course, if colonies are too far in the rear it may be best to leave them to themselves or unite them. There are other means than exchanging combs for equalizing colonies but they must be practiced with great caution. If some of the colonies do not swarm when it seems they ought to, they can be divided. An artificial swarm that is made like a natural swarm and at the right time, will work with the same energy as a natural swarm, and in some conditions is to be preferred. To get early swarms, the bees must have protection and an abundance of stores. In the province of Hanover, where bee-keeping has been made a specialty for a few hundred years, stimulative feeding is practiced, and it is only by this plan that an early and short swarming season can be secured. I use a swarm catcher and would not think of doing without one.

To remove the trouble from over-populousness we have only to have a hive that is large enough, or that can be made large enough, and see that it is enlarged before it really becomes too populous. If we have a hive that cannot be enlarged, then we must remove some of the sealed brood and give it to some colony that is not so populous. Managed in this way, the whole apiary will be in the best condition to take advantage of the honey flow when it comes, instead of having in it a few giants surrounded by dwarfs.

Lastly, is the point of having too much unsealed brood in proportion to the number of workers. To remedy this some of the unsealed brood is taken away and given to some colony having more bees in proportion to its unsealed brood. Empty combs are given in place of the brood removed. The empty combs are placed at the side of the brood nest. If there is danger of weakening the colony too much, capped brood may be given in place of the unsealed that is removed.

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in any quantities. Will pay highest market price. Will exchange bee supplies for honey or wax.

The Griggs Bros. & Nichols Co.

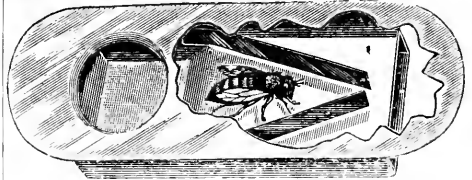
528 Monroe St., Toledo, Ohio.

9-07-tf

BEEES, QUEENS AND SUPPLIES

We manufacture standard dovetailed bee-hives and supplies, cheaper than you ever bought before. Our Queens and Bees stand at the head in quality. Untested 75c. each; \$4.25 for 6; or \$8.00 per dozen. Tested, \$1.25 each; \$12.00 per dozen. Select tested, \$1.50. Special prices to dealers and in large lots on application. Dittmer's foundation Catalog free.

THE BEE & HONEY COMPANY,
Will Atchley, Prop.
Beville, (Bee Co.) Texas,



ADVANTAGES OF BEE ESCAPES.

No sweat steals down the cheeks and aching back of the tired bee-keeper, as the result of standing in the hot sun, puffing, blowing, smoking and brushing bees; no time is wasted in these disagreeable operations, and no stings received in resentment of such treatment; the honey is secured free from black or even the taint of smoke; the cappings are not injured by the gnawing of the bees; and robbers stand no show whatever. If there are any burr-combs, they are cleaned up by the bees inside the hive, before the honey is removed. Leading bee-keepers use the PORTER escape, and say that without a trial it is impossible to realize the amount of vexatious, annoying, disagreeable work that it saves. The cost is only 20 cts. each, or \$2.25 per dozen.

R. & E. C. PORTER, MFRS.
SEND ORDERS TO YOUR DEALER.

ADVANCED BEE CULTURE

The foundation of a crop of honey rests in the successful wintering of bees, and this is the result of many things. Strong colonies alone will not insure safe wintering, neither will a warm cellar, nor chaff hives. Perfect stores will come the nearest to it, but they can't be depended upon *alone*. In some localities the natural stores can be depended upon; in others part of the natural stores are all right for wintering purposes, and others are disastrous. There are methods whereby the right natural stores may be secured for winter, or, if not, the colonies may be brought through the season practically free from natural stores, when it is an easy matter to furnish them the best of all winter stores—cane sugar.

When the food is all that it should be, then comes the matter of protection; shall it be packing of some kind, such as saw-dust, or chaff, or planer shavings, or shall it be the cellar?

If it is the cellar, then follow the matters of temperature, moisture, ventilation, etc., all of which have a bearing upon successful wintering. There is a way of telling whether a cellar is damp, *how* damp it is, and whether it is *too* damp (depending upon the temperature) and there are methods of rendering it dry if it is too damp.

Besides the matter of ventilation to the cellar itself, which also has a bearing upon temperature, there is the ventilation of

individual hives, so that the dampness may pass off, yet leaving the cluster always dry and warm.

Then there is the giving of protection in such a manner, when wintering bees in the open air, that the cluster may remain warm and dry.

Successful wintering is really a many sided subject, but it can be mastered so as to be able to bring colonies of bees through the winter as safely as may be done with a cow or horse.

All of the leading factors of successful wintering, as well as the minor details, are given in the book *ADVANCED BEE CULTURE*, and I am satisfied that any man who reads this book, and follows its instructions, will winter his bees with practically no loss. Last fall I put 104 colonies of bees into my cellar, and took them all out in the spring alive, dry, clean, healthy and strong, and I *know* I can do this *every time*, and so can others if they will follow the instructions that I give in *ADVANCED BEE CULTURE*.

If you have failed in wintering your bees, or, if you have succeeded only in a measure, and would like to secure *perfect* wintering, get the book *now*, and read it, and put into practice its teachings, and next spring will find you with strong, healthy colonies—the foundation of all honey crops.

Price of the book \$1.20, or the Review one year and the book for only \$2.00.

W. Z. HUTCHINSON
FLINT, MICH.

JANUARY, 1907.



Flint, Michigan, \$1.00 a Year

Bee-Keepers' Review

PUBLISHED MONTHLY

W. Z. HUTCHINSON, Editor and Publisher

Entered as second-class matter at the Flint Postoffice Feb. 2, 1888. Serial number 228.

Terms—\$1.00 a year to subscribers in the United States, Canada, Cuba and Mexico. To all other countries, postage is 24 cts. a year, extra.

Discontinuances—The Review is sent until orders are received for its discontinuance. Notice is sent at the expiration of a subscription, further notices being sent if the first is not heeded. Any subscriber wishing the Review discontinued, will please send a postal at once upon receipt of the first notice; otherwise it will be assumed that he wishes the Review continued, and will pay for it soon. Any one who prefers to have the Review stopped at the expiration of the time paid for, will please say so when subscribing, and the request will be complied with.

Flint, Michigan, Jan. 15, 1907.

Advertising Rates.

All advertisements will be inserted at a rate of 15 cents per line, Nonpareil space, each insertion; 12 lines of Nonpareil space make 1 inch. Discounts will be given as follows:

On 10 lines and upwards, 3 times, 5 per cent; 6 times, 15 per cent, 9 times, 25 per cent, 12 times, 35 per cent.

On 20 lines and upwards, 3 times, 10 per cent; 6 times, 20 per cent, 9 times, 30 per cent; 15 times, 40 per cent.

On 30 lines and upwards, 3 times, 20 per cent; 6 times, 30 per cent, 9 times, 40 per cent, 12 times 50 per cent.

Clubbing List.

I will send the REVIEW with

Gleanings, (new)	(\$1.00)	\$1.75
American Bee Journal, (new)	(1.00)	1.75
Canadian Bee Journal,	(1.00)	1.75
American Bee Keeper	(.50)	1.49
Ohio Farmer	(1.00)	1.75
Farm Journal (Phila)	(.50)	1.29
Rural New Yorker	(1.00)	1.85
The Century	(4.00)	4.50
Michigan Farmer	(1.00)	1.65
Prairie Farmer	(1.00)	1.75
American Agriculturist	(1.00)	1.75
Country Gentleman	(2.50)	3.15
Harper's Magazine	(4.00)	4.19
Harper's Weekly	(4.00)	4.29
Yonths' Companion (new)	(1.75)	2.35
Cosmopolitan	(1.00)	1.90
Success	(1.00)	1.75

White Clover CANDIED HONEY.

I have 4,000 lbs. of choice, dead ripe, white clover honey, put up in 2 lb. paper bags, and 1,000 lbs. in 5 lb. bags, all nicely candied, hard and white, that I am offering at 9 cts. per lb. f. o. b., Flint, Mich. Cash to accompany order.

LEONARD S. GRIGGS,

Route 5,

Flint, Mich.

CANADA DISTRIBUTORS

FOR

Marshfield Mfg. Co. Wis., Beeware, Hives, Sections, Shipping Cases and all kinds of Bee Supplies no better made. We have been selling Marshfield Beeware for three years, and using them ourselves, and can say that there is no better made. We have the best shipping center in Canada—C. P. Ry., M. C. Ry. and G. T. Ry., three express companies—Dominion, American and Canadian. Sample of sections sent free. Send for a sample before you buy. We can save you money on Beeware. We buy in carload lots and can give you the lowest prices on No. 1 Beeware. Wax wanted. N. H. SMITH, Lock Box A, Filbury, Ont.

Kent Co., Canada.

P. S. Eggs from imported trio of Black Minors costing \$75.00, \$2.00 for 15 Eggs, also two B. P. Rock costing \$50.00, Eggs at same price. Warranted to hatch well and safe in your place.

Second Hand Hives FOR SALE CHEAP.

I have gone out of the bee business, but I still have some second hand hives, stored at Marion, Michigan, that I would sell very cheaply. Here is the list:

25 8-frame Dovetailed hives, one-story; complete with loose, hanging, thick-top frames, well painted, and in good condition, worth \$12.25 each.

74 8-frame rabbeted corner, one-story hives, complete as above, almost new, and well painted like the Root exterior cover, worth \$12.25 each.

99 8-frame supers, complete with cleated fence separators for 4 1/2 x 1 1/2 plain sections, well painted and in good condition, worth 40c each.

4 New section holder supers, Root's Dovetailed for 8-frame hives, in flat, complete for 4 1/2 x 1 1/2 slotted sections, worth 40c each.

10 Porter bee escapes, complete with board, in good condition, worth 25c each.

50 Wood bound zinc honey boards for 8-frame hives, almost new, in good condition, worth 15c each.

1 New Root smoker, worth \$7.

Everything is in fine condition and not infested with any bee disease. Quite a good many of the brood frames are new, never having any comb built in them, and when closing up the business, I cut the comb out of all these extra hives, but left a narrow strip along the top bar for a starter. If desired this could be cut off and foundation put in.

The Dovetailed hives are all Root's make and the others are accurately made, after the same pattern, except that the corners are halved instead of Dovetailed. All the hives are painted white.

If anybody will take the entire lot I will let them go for or for one half of the advertised price.

Address,

R. S. CHAPIN,

352 Moran St.,

DETROIT, MICH

Honey Quotations

The following rules for grading honey were adopted by the North American Beekeepers' Association, at the Washington meeting, and, so far as possible, quotations are made according to these rules.

FANCY. All sections to be well filled, combs straight, of even thickness, and firmly attached to all four sides, both wood and comb unsoiled by travel stain or otherwise, all the cells sealed except the row of cells next the wood.

NO. 1. All sections well filled, but combs uneven or crooked, detached at the bottom or with but a few cells unsealed, both wood and comb unsoiled by travel stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," "No. 1 dark," etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted freight, cartage and commission, the balance being sent to the shipper. Commission is ten per cent, except that a few dealers charge only five per cent, when a shipment sells for as much as one hundred dollars.

BUFFALO.—Some really fancy honey wanted now to sell. Lower grades not wanted, except at very low prices. We quote as follows: Fancy white, 12c to 15c; No. 1 white, 12 to 13c; fancy amber, 12c to 14c. Beeswax 2 1/2 to 3c.

Aug. 7, 1906. **BATTERSON & CO.,**
Buffalo, N. Y.

CHICAGO.—There is the usual dullness in the honey trade at this date owing to most of the retailers having stocked up sufficiently to carry them over the holidays, but the stocks in the hands of the trade generally are below the normal, hence prices are firm at 15c to 16c for No. 1 to fancy white comb, with all grades at 10c to 2c less, amber grades dull at 10c to 12c. Extracted white firm at 20c for clover and bass-wood, ambers 15c to 20c, per lb. Beeswax 90 per lb.

Jan. 7, 1907. **R. A. BURNETT & CO.,**
100 So. Water St.

NEW YORK.—Fancy white comb, honey scarce and in good demand. Extracted, firm with sufficient supply. We quote as follows: Fancy white 12c; No. 1 white 10c; fancy amber 12c to 15c; fancy dark 10c; No. 1 dark 10c; white extracted 12c to 15c; amber extracted 7c to 7 1/2c; dark extracted 7c to 7 1/2c. Beeswax 90c.

Jan. 7, 1907. **HILDRETH & SEGELKEN,**
52-56 Murray St.,
New York.

CINCINNATI.—The honey market at present is very quiet. Holders of this article are not trying to realize a profit simply disposing of what they have at cost. Fancy comb honey is selling at 14 1/2c to 15c.

We quote amber extracted, honey in barrels at 7c to 8c; fancy light amber in cans, at 7c to 8c; fancy white 7c.

For strictly choice, beeswax, we are paying 3c per pound, delivered here.

Jan. 9, 1907. **THE FRED W. MITH CO.,**
51 Walnut St., Cincinnati, Ohio.

KANSAS CITY.—The honey market shows improvement in the honey situation with much better inquiry. The market is considered firm at quotations. We quote as follows: Fancy white, 12c to 14c; No. 1 white, 10c to 12c; white extracted, 15c; amber 10c; beeswax 90c to 1c.

WALKER BRETHERTON GROCERY CO.,
No. 10, 1906. 147 Walnut St., Kansas City, Mo.

CHICAGO.—Our best lot of Colorado comb honey on track today, double deck cases. We quote as follows: Fancy white, 12c to 16c; No. 1 white 10c to 14c; fancy amber 12c to 15c; No. 1 amber, 10c to 12c; fancy dark 10c; No. 1 dark, 10c to 11c; white extracted, 15c to 16c; amber 6 to 6 1/2; dark, 5 to 6 1/2.

S. F. FISH & CO.,
180 South Water St.,
Sept. 1, 1906. Chicago, Ill.

DENVER.—There is practically no honey left in the hands of producers in this State, and barely enough in the Denver market to supply the home trade until spring.

We quote as follows: Strictly No. 1 white per case of 24 sections, 12c; No. 1 light amber, 3c; 20c and good No. 1 2c; white extracted, 12c to 12 1/2c; light amber 7c to 8c.

We are in the market for beeswax and pay 20 cents for clean yellow wax delivered here.

COLORADO HONEY PRODUCERS' ASS'N.,
Jan. 5, 1907. Denver, Colo.

WRITE US

If you have any honey to sell, we do not handle on commission, but pay cash on receipt of honey.

E. R. PAHL & CO.,
Broadway and Detroit Sts., Milwaukee.



THE PREMIO FILM PACK ADAPTER
Makes your Plate Camera a
Daylight Loading Film Camera.

With the Adapter you carry 12 exposures in the space required for one Plate Holder. You can focus on the ground glass, between any or all exposures. You can load and unload in daylight. You can remove one or more films for development before the others are exposed.

Write for Catalog, explaining the Premo Daylight System.

ROCHESTER OPTICAL CO.
Rochester, N. Y.

Gleanings in Bee Culture Clubbing Offers

ALL OF THE FOLLOWING OFFERS INCLUDE GLEANINGS ONE YEAR

		Our Price with GLEANINGS			Our Price with GLEANINGS		
Delicater	1 yr.	\$1.00		Outing Magazine	1 yr.	\$3.00	
McClure's Magazine	"	1.00	\$3	World To-Day	"	1.00	
World's Work	"	1.00		Amble's Magazine	"	1.50	
							\$4 15
Review of Reviews	1 yr.	\$3.00		Home Needlework Magazine	1 yr.	\$ 75	
Success Magazine	"	1.00	3	Pictorial Review	"	1.00	
Woman's Home Companion	"	1.00			Modern Priscilla	"	50
							2 65
Cosmopolitan Success	1 yr.	\$1.00		Good Housekeeping	1 yr.	\$1.00	
Yachting and Yacht Club	"	1.00	4	Cassell's or Recreation	"	1.50	
Field and Stream	"	4.00			Ladies' World	"	1.50
							3 00
American Boy	1 yr.	\$1.00		Independent	1 yr.	\$2.00	
Cassell's Little Polls	"	1.50	3	Musician	"	1.50	
Metropolitan Magazine	"	1.00			Outing Magazine	"	3.00
							4 70
Recreation of Appleton's	1 yr.	\$1.50		Out of News illustrated	1 yr.	\$2.00	
Metropolitan Magazine	"	1.50	4	Buff Mcintosh	"	3.00	
Review of Reviews	"	1.00			Woman's Home Companion	"	1.00
Woman's Home Companion	"	1.00					5 00
Suburban Life	1 yr.	\$2.00		Little Folks, new subscriber		1.00	
Suburban Life	"	1.50	6	Woman's Home Companion	"	1.00	
House and Garden	"	3.00			Modern Priscilla	"	50
							2 05
Independent	1 yr.	\$2.00		World To-Day	1 yr.	1.50	
Recreation of Appleton's	"	1.50	4	Recreation of Pearson's	"	1.50	
Outing or Reader Magazine	"	3.00			Woman's Home Companion	"	1.00
							3 30
Homestead	1 yr.	\$2.50		Musician's Guide	1 yr.	1.50	
Cassell's or Recreation	"	1.50	4	Home Magazine	"	1.00	
Cosmopolitan	"	1.00			McCall's Magazine	"	50
							3 00
Amble's Magazine	1 yr.	\$1.50		The Reader of any class B	1 yr.	3.00	
Metropolitan Magazine	"	1.50	4	Keith's of any class A	"	1.50	
Outing Magazine	"	3.00			Success Magazine	"	1.00
							4 00
Outing Magazine	1 yr.	\$3.00		What to Eat	1 yr.	1.00	
Metropolitan Magazine	"	1.50	6	Harper's Bazar	"	1.00	
Harper's or Ladies' Weekly	"	5.00			Pictorial Review	"	1.00
Of Scribner's							2 95
American Boy	1 yr.	\$1.00		American Boy	1 yr.	1.00	
Pearson's Magazine	"	1.50	3	National Magazine	"	1.00	
Pictorial Review	"	1.00			Cassell's Little Polls	"	1.50
							3 40
American Inventor	1 yr.	\$1.00		Cassell's or Outing	1 yr.	1.50	
Scientific American	"	1.00	4	American Magazine	"	1.00	
Automobile Magazine	"	2.00			Broadway Magazine	"	1.50
							3 05
World To-Day	1 yr.	\$1.50		Children's Magazine	1 yr.	1.00	
Etude for music-lovers	"	1.50	3	Home Needlework Magazine	"	75	
Recreation of Pearson's	"	1.50			Buff Mcintosh	1 yr.	3.00
					Scribner's Magazine	"	3.00
Country Magazine	1 yr.	\$4.00		Metropolitan Magazine	"	1.50	
Current Literature	"	3.00	7	Suburban Life	1 yr.	1.50	
Cassell's or Appleton's	"	1.50			McJure's	"	1.00
					Delmarator	"	1.00
Putnam's Magazine	1 yr.	\$3.00		World's Work	"	3.00	
Country Life in America	"	4.00	7			4 30	
Good Housekeeping	"	1.00			Suburban Life	1 yr.	1.50
					Woman's Home Companion	"	1.00
Children's Magazine	1 yr.	\$1.00		Review of Reviews	"	3.00	
Etude for music-lovers	"	1.50	3			3 05	
Appleton's or Pearson's	"	1.50			Suburban Life	1 yr.	1.50
					World To-Day	"	1.50
Harper's Magazine	1 yr.	\$1.00		Cosmopolitan	"	1.00	
Reader or Outing	"	3.00	7			2 95	
Lippincott's Magazine	"	2.50			Suburban Life	1 yr.	1.00
					Woman's Home Companion	"	1.00

All of the above offers include GLEANINGS one year.

SEND ALL ORDERS TO THE A. I. ROOT CO., MEDINA, OHIO.

FEBRUARY, 1907.



THE BEE-KEEPERS'
REVIEW
Published Monthly.

Flint, Michigan, \$1.00 a Year

Bee-Keepers' Review

PUBLISHED MONTHLY

W. Z. HUTCHINSON, Editor and Publisher

Entered as second-class matter at the Flint Postoffice Feb. 2, 1888. Serial number, 226.

Terms—\$1.00 a year to subscribers in the United States, Canada, Cuba and Mexico. To all other countries postage is 24 cts. a year, extra.

Discontinuances—The Review is sent until orders are received for its discontinuance. Notice is sent at the expiration of a subscription, further notices being sent if the first is not heeded. Any subscriber wishing the Review discontinued, will please send a postal at once upon receipt of the first notice; otherwise it will be assumed that he wishes the Review continued, and will pay for it soon. Any one who prefers to have the Review stopped at the expiration of the time paid for, will please say so when subscribing, and the request will be complied with.

Flint, Michigan, Feb. 15, 1907.

Advertising Rates.

All advertisements will be inserted at a rate of 15 cents per line. Nonpareil space, each insertion 12 lines of Nonpareil space make 1 inch. Discounts will be given as follows:

On 10 lines and upwards, 3 times, 5 per cent; 6 times, 15 per cent; 9 times, 25 per cent; 12 times, 35 per cent.

On 20 lines and upwards, 3 times, 10 per cent; 6 times, 20 per cent; 9 times, 30 per cent; 15 times, 40 per cent.

On 30 lines and upwards, 3 times, 20 per cent; 6 times, 30 per cent; 9 times, 40 per cent; 12 times, 50 per cent.

Clubbing List.

I will send the REVIEW with—

Gleanings, (new).....	(\$1.00).....	\$1.75
American Bee Journal, (new).....	(1.00).....	1.75
Canadian Bee Journal.....	(1.00).....	1.75
American Bee Keeper.....	(.50).....	1.40
Ohio Farmer.....	(1.00).....	1.75
Farm Journal (Phila.).....	(.50).....	1.20
Rural New Yorker.....	(1.00).....	1.85
The Century.....	(4.00).....	4.50
Michigan Farmer.....	(1.00).....	1.65
Prairie Farmer.....	(1.00).....	1.75
American Agriculturist.....	(1.00).....	1.75
Country Gentleman.....	(2.50).....	3.45
Harper's Magazine.....	(4.00).....	4.10
Harper's Weekly.....	(4.00).....	4.20
Youths' Companion, (new).....	(1.75).....	2.35
Cosmopolitan.....	(1.00).....	1.90
Success.....	(1.00).....	1.75

National Bee-Keepers' Association.

Objects of the Association.

To promote and protect the interests of its members.

To prevent the adulteration of honey.

Annual Membership \$1.00.

Send dues to Treasurer

L. A. ASPENWALL, Jackson, Mich.
President

GEO. E. HILDON, Fremont, Mich.

Vice President

JAS. A. GREEN, Grand Junction, Colo.

Secretary.

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R. A. HOLIKAMP, St. Louis, Mo.

M. H. MENDELSON, Ventura, Cal.

C. A. HATCH, Richland Cen., Wis.

F. WHITECOMB, Mauston, Wis.

Names of Bee-Keepers

TYPE WRITTEN

The names of my customers, and of those asking for sample copies, have been saved and written in a book. There are several thousand all arranged in alphabetically (in the largest States), and, though this list has been secured at an expense of hundreds of dollars, I would furnish it to advertisers or others at \$2.00 per thousand names. The former price was \$2.50 per 1000, but I now have a type writer, and by using the manifold process, I can furnish them at \$2.00. A manufacturer who wishes for a list of the names of bee-keepers in his own State only, or possibly in the adjoining States, can be accommodated. Here is a list of the States and the number of names in each State.

Arizona 46	Ky 182	N. C. 60
Ark 82	Kans 350	New Mex. 54
Ala. 80	La. 38	Oregon 109
Calif 378	Mo. 500	Ohio 1300
Colo 228	Minn 334	Penn 912
Canada 1200	Mich. 1770	R. I. 46
Cova 102	Mass. 275	S. C. 40
Day 28	Md. 64	Tenn 176
Del 15	Maine 270	Tex. 270
Fla 100	Miss 70	Utah 68
Ga. 90	N. Y. 1700	Vt. 205
Ind. 744	Neb. 345	Va. 182
Ills. 1375	N. J. 130	W. Va. 178
Iowa. 800	N. H. 158	Wash. 122
		Wis. 620

W. Z. HUTCHINSON, Flint, Mich.

MAR. II, 1907.



Flint, Michigan, \$1.00 a Year

Bee-Keepers' Review

Published Monthly

W. Z. HUTCHINSON, Editor and Publisher

Entered as second class matter at the Post Office at Flint, Mich., Feb. 17, 1878. Post office number 210.

Terms. Six dollars a year, in advance. Single Copies 15 cents. Canada and Foreign, 1.00. The country postage is 24 cts. a year extra.

Discontinuances. The Review is not a liability, and will be discontinued at the expiration of a subscription, unless ordered at the expiration of the first issue, or before. A subscriber wishing the Review discontinued will please send a postal note, upon receipt of the first issue, if the Review will be discontinued. If wished the Review continued, and will pay for it, or send a postal note, or have the Review stopped at the expiration of the first time card, or will please say so. When discontinuing, and the request will be complied with.

Flint, Michigan, Mar. 15, 1907.

Advertising Rates.

All advertisements will be charged at the rate of 15 cts. per line. Non-paying notices, such as notices of sales, non-paying notices, make 1 cent. per line, and will be given as follows:

On 10 lines and upwards 7 times 5 percent, 6 times 15 percent, 4 times 25 percent, 2 times 35 percent.

On 20 lines and upwards 5 times 20 percent, 6 times 20 percent, 4 times 30 percent, 2 times 40 percent.

On 30 lines and upwards 3 times 20 percent, 4 times 30 percent, 2 times 40 percent, 1 time 50 percent.

Clubbing List.

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Gleanings, (new)	(\$1.00)	\$1.75
American Bee Journal, (new)	(1.00)	1.75
Canadian Bee Journal	(1.00)	1.75
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Farm Journal (Phila)	(.50)	1.20
Rural New Yorker	(1.00)	1.85
The Century	(4.00)	4.50
Michigan Farmer	(4.00)	4.65
Prairie Farmer	(1.00)	1.75
American Agriculturist	(1.00)	1.75
Country Gentleman	(2.50)	3.15
Harper's Magazine	(4.00)	4.10
Harper's Weekly	(4.00)	4.20
Youth's Companion (new)	(1.75)	2.35
Cosmopolitan	(1.00)	1.90
Success	(1.00)	1.75

National Bee-Keepers' Association.

Objects of the Association.

To promote the interests of the bee-keepers of the United States.

To encourage the cultivation of bees.

Annual Membership \$1.00.

1907-1908, Terminus

J. A. A. EDWARDS, Jackson, Mich., President
G. L. H. HENRY, Fremont, Mich., Vice-President

J. A. GORDON, Grand Junction, Ind., Secretary
N. E. FRASER, Plattville, Wis., Gen. Manager and Treasurer

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C. A. HATCH, Richland, W. Va.
E. WILCOX, Mauston, Wis.

WESTWOOD Red - Clover Q U E E N S.

No better material flying with red clover where there is no fall. They breed and lay consistently. Nucleus specialty. All family orders of 10 frames each, with arrival guaranteed. Price just upon application.

HENRY SHAFFER, CINCINNATI, OHIO
2807 Harrison Ave., 347-10-1

Bee-keepers—We can furnish you with the best

Sections

at their own prices, and all other our standard bees, send for catalog and prices. \$5.07 1/2

AUGUST LOTZ & SON, Cadott, Wis.

WE BUY AND SELL

HONEY

OF DIFFERENT KINDS

If you have any to dispose of, or if you need to buy, correspond with us.

We are always in the market for WAX at the highest market price.

HILDRETH & SEGELKEN
267-267 Greenwich St., New York

Honey Quotations



More Gentle Than Flies.

Will Neither Sting nor Bite.

It is the most perfect and most reliable of all the honey-producing insects. It is the only one that does not sting or bite. It is the only one that does not require a large amount of space. It is the only one that does not require a large amount of food. It is the only one that does not require a large amount of care. It is the only one that does not require a large amount of money. It is the only one that does not require a large amount of time. It is the only one that does not require a large amount of effort. It is the only one that does not require a large amount of skill. It is the only one that does not require a large amount of knowledge. It is the only one that does not require a large amount of experience. It is the only one that does not require a large amount of patience. It is the only one that does not require a large amount of perseverance. It is the only one that does not require a large amount of determination. It is the only one that does not require a large amount of courage. It is the only one that does not require a large amount of strength. It is the only one that does not require a large amount of endurance. It is the only one that does not require a large amount of stamina. It is the only one that does not require a large amount of energy. It is the only one that does not require a large amount of power. It is the only one that does not require a large amount of speed. It is the only one that does not require a large amount of agility. It is the only one that does not require a large amount of flexibility. It is the only one that does not require a large amount of coordination. It is the only one that does not require a large amount of balance. It is the only one that does not require a large amount of focus. It is the only one that does not require a large amount of concentration. It is the only one that does not require a large amount of attention. It is the only one that does not require a large amount of awareness. It is the only one that does not require a large amount of alertness. It is the only one that does not require a large amount of vigilance. It is the only one that does not require a large amount of watchfulness. It is the only one that does not require a large amount of caution. It is the only one that does not require a large amount of carelessness. It is the only one that does not require a large amount of negligence. It is the only one that does not require a large amount of indifference. It is the only one that does not require a large amount of apathy. It is the only one that does not require a large amount of hostility. It is the only one that does not require a large amount of animosity. It is the only one that does not require a large amount of enmity. It is the only one that does not require a large amount of hatred. It is the only one that does not require a large amount of love. It is the only one that does not require a large amount of affection. It is the only one that does not require a large amount of fondness. It is the only one that does not require a large amount of liking. It is the only one that does not require a large amount of disliking. It is the only one that does not require a large amount of preference. It is the only one that does not require a large amount of aversion. It is the only one that does not require a large amount of attraction. It is the only one that does not require a large amount of repulsion. It is the only one that does not require a large amount of allure. It is the only one that does not require a large amount of repel. It is the only one that does not require a large amount of entice. It is the only one that does not require a large amount of deter. It is the only one that does not require a large amount of entice. It is the only one that does not require a large amount of deter.

Box 61 A. D. D. WOOD, Lansing, Mich.

Danzenbaker PRIZES.

It is well known that many of our beekeepers are producing a large amount of honey. Many of these are of a very high quality. Already a little more care and "hiving" more suitable factors in the taking of the honey from the hive at just the right time and in the right way, will produce an extra fancy honey which will be a good deal which would sell at a much higher price. The experience of many beekeepers generally is that there is a difficulty in this line of extra fancy honey. It is the inferior classes that suffer most at these times. We believe that beekeepers would be very much satisfied with their seasons work if their best efforts were made to produce a really fine product. To increase further the interest in extra fancy honey, the Danzenbaker prizes are offered for honey produced in Danzenbaker hives from the year 1907 under the following conditions:

FIRST. As stated above the honey must be produced from a Danzenbaker hive either the present season or any Danzenbaker hive that has been put out within the last few years. These hives may be had from any dealer in bee supplies in any part of the country.

SECOND. For classes 1 and 2 we require a shipment of approximately the amount stated to be made by the beekeeper direct to us at Medina. After the prizes have been awarded the honey entered for competition in Class 1 or 2 will be held subject to the instructions of the producer. We will select a competent commissioner. We will ship direct to our port direct, freight & express. There being no honey markets in our immediate vicinity such as Columbus, Cincinnati, Cleveland, Buffalo and Pittsburg, it can be disposed of without difficulty at good market prices, and the shipper will not have to lose a good market by shipping it here. Neither the honey awarded nor honey that which obtained a prize for its own property but will be sold subject to the instructions of the producer who sends it to us. We are interested only in inspecting it to award the prize.

THIRD. For all honey submitted for prizes we must have a definite statement from the producer regarding the rights, in, under which it was produced. We need a high or heavy flow of honey, how far away, was handled, how many colonies in the yard from what source, produce, etc.

FOURTH. For Classes 3, 4 and 5, we must in addition to the above report, have the signature of two witnesses certifying to the correctness of the

report. If the party who sends us the report for the number of colonies which were used we shall not be able to do without it. But witnesses may be given instead of the signature of witnesses if desired. All parties intending to compete for these prizes should send by express which we shall furnish, in which the report may be included.

FIFTH. It will be noticed in the last three classes, three to five colonies, that it is not at all necessary to send us the report, all we require is a report.

SIXTH. We reserve the right to limit the number of awards in each class, or to make no awards in a class if the number of entries entered for the same.

SEVENTH. No contestant will be awarded more than one prize in each class, but may make two entries if desired, one in Class 1 or 2 and another in Class 3, 4 or 5.

The classifications for the prizes are as follows:

CLASS 1. For best shipment of 200 lbs. of comb honey in Danzenbaker sections.

CLASS 2. For best case of comb honey in Danzenbaker sections.

CLASS 3. For best report of yield from single colony in Danzenbaker hive.

CLASS 4. For best report of yield from five colonies in Danzenbaker hives.

CLASS 5. For best report of general results from use of Danzenbaker hive.

For each class there will be ten prizes as follows:

FIRST	\$10.00	
SECOND	\$7.00	Five Classes.
THIRD	\$5.00	Ten Prizes for each Class.
FOURTH	\$2.00	
FIFTH (FIRST)	\$1.00 each	Fifty Prizes in all.

This is the time to decide to enter this competition. No matter where you live, whether in the United States or elsewhere, you can certainly find one class in which you can make an entry, and as there are ten prizes in each class we believe that no one will be greatly disappointed in the results unless it is unusual, and we hope that we shall not be, but see a large number of entries. Even if you fail to get a prize you will doubtless have increased the value of your own product by your efforts to produce more high yields in an extra quality of honey.

The A. I. ROOT CO., Medina, Ohio.

April 1902



THE BEE-KEEPERS'
REVIEW

Published Monthly.

East, Michigan, \$1.00 a Year

BEES AND QUEENS

GOLDEN ITALIANS

Buy a Buzz Saw

Get a Buzz Saw for your bees

TEXAS QUEENS

The Famous Honey-Producers



Texas
Queens

Carniolans, Italians, Goldens

Write for information to
GRANT ANDERSON, Sabinal, Texas

GRANT ANDERSON, Sabinal, Texas

H. M. PARKER, Jr.

JAMES ISLAND - SOUTH CAROLINA
Money Order Office Charleston, S. C.

Well-bred Queens!

Cook's Square Honey-jar

J. H. M. COOK, 70 Cortlandt St., New York

The Oldest Supply-house in the East,
and only Reliable Goods sold. 10
Cents brings sample jar by mail.



DO IT NOW!

Save your money and get the best
HONEY for your bees. Buy
HONEY from the best source.
HONEY from the best source.
HONEY from the best source.

HONEY

THE BEST HONEY

HILDRETH & SEGELKEN

More Gentle Than Flies.

Will Neather Sting Nor Bite

Our Gentlest and most useful form of the honey
the Italian, Carniolan, and the Queen of the
honey. Our honey is GUARANTEED
to be pure and fresh. It is the BESTEST
Queen returned. Get it now, and then
try it.

Box 61

A. D. D. WOOD, Lansing, Mich.

MAY, 1902



THE BEE-KEEPERS'

REVIEW

Published Monthly.

Flint, Michigan, \$1.00 a Year

Bee-Keepers' Review

F. H. HUTCHINSON

W. Z. HUTCHINSON, Editor and Publisher

Entered as second-class matter, July 15, 1891, at Flint, Michigan, under Post Office No. 112, under Act of October 3, 1917.

Terms—\$3.00 a year in advance. Single copies 10 cents. The Review is published on the 15th of each month.

Discontinuances—The Review is sent only to those who send us the necessary subscription money. If a subscriber fails to send us the necessary money, the Review will be discontinued. If a subscriber wishes to have the Review stopped for a certain number of months, he should so inform us when sending in the money. We will not be held responsible for the Review if it is not paid for.

Flint, Michigan, May 15, 1907.

Advertising Rates.

Advertisements will be inserted at a rate of 25 cents per line. The Normal rate is 10 cents per line. Non-legal advertisements are 10 cents per line. The rates are as follows:

On 10 lines and upwards, 3 times, 20 percent; 5 times, 25 percent; 10 times, 25 percent; 12 times, 35 percent.

On 20 lines and upwards, 3 times, 20 percent; 5 times, 20 percent; 10 times, 30 percent; 15 times, 40 percent.

On 30 lines and upwards, 3 times, 20 percent; 5 times, 30 percent; 10 times, 40 percent; 15 times, 50 percent.

Clubbing List.

I will send the REVIEW with

Gleanings (new)	\$1.00	\$1.75
American Bee Journal, (new)	1.00	1.75
Canadian Bee Journal	1.00	1.75
American Bee Keeper	.50	1.40
Ohio Farmer	1.00	1.75
Farm Journal-Philad.	.50	1.30
Rural New Yorker	1.00	1.85
The Century	1.00	1.80
Michigan Farmer	1.00	1.65
Prarie Farmer	1.00	1.75
American Agriculturist	1.00	1.75
Country Gentleman	1.50	3.45
Harper's Magazine	1.00	4.10
Harper's Weekly	1.00	1.20
Youth's Companion (new)	1.75	2.35
Cosmopolitan	1.00	1.90
Success	1.00	1.75

National Bee-Keepers' Association.

Objects of the Association.

To promote the interests of the bee-keepers of the United States, to disseminate knowledge, to improve the methods of apiculture, and to protect the rights of the bee-keeper.

Annual Membership \$1.00.

For the year ending December 31, 1907, the dues are \$1.00 in advance.

For the year ending December 31, 1908, the dues are \$1.00 in advance.

For the year ending December 31, 1909, the dues are \$1.00 in advance.

For the year ending December 31, 1910, the dues are \$1.00 in advance.

Board of Directors.

- Amos E. Wells, Treasurer
- W. Z. Hutchinson, Secretary
- W. Z. Hutchinson, President
- W. Z. Hutchinson, Vice-President
- W. Z. Hutchinson, Corresponding Secretary
- W. Z. Hutchinson, Recording Secretary
- W. Z. Hutchinson, Finance Committee
- W. Z. Hutchinson, Executive Committee
- W. Z. Hutchinson, Honorary Treasurer
- W. Z. Hutchinson, Honorary Secretary

Names of Bee-Keepers TYPE WRITTEN

The following is a list of the names of the bee-keepers of the United States, as given by the National Bee-Keepers' Association, and as published in the Review. The names are given in alphabetical order, and are given in the form in which they appear in the Review. The names are given in the form in which they appear in the Review, and are given in the form in which they appear in the Review.

Arizona	46	Ky	182	Ill	182
Ark	82	Kans	350	Ind	182
Ala	80	La	38	Iowa	182
Calif	378	Mo	500	Mich	182
Colo	98	Minn	33	Miss	182
Canada	1500	Mich	17	N	182
Conn	92	Mass	17	N	182
Day	98	Id	17	N	182
Del	48	Maine	17	N	182
Fla	100	Miss	17	N	182
Ga	90	N	17	N	182
Ind	74	N	17	N	182
Ills	1378	N	17	N	182
Iowa	800	N	17	N	182

HUTCHINSON, Flint, Mich

June, 1897

A decorative border surrounds the central text box. It features several large, detailed leaves with prominent vein patterns. On the left side, there is a cluster of small, round, textured flowers or seed heads on a stem with small leaves. The entire design is rendered in a fine-line, engraved style.

THE BEE-KEEPERS'
REVIEW
Published Monthly.

Flint, Michigan, \$1.00 a Year

1897



THE BEE-KEEPERS'
REVIEW

Published Monthly.

Flint, Michigan, \$1.00 a Year

Bee-Keepers' Review

PUBLISHED MONTHLY

W. Z. HUTCHINSON, Editor and Publisher

Entered as second class matter at the Post office Feb. 21, 1888. Serial number 239.

Terms \$1.00 a year for subscribers in the United States, Canada, Cuba and Mexico. To all other countries postage is added a year extra.

Discontinuances The Review is sent until orders are received for its discontinuance. Notice is sent at the expiration of a subscription, further notices being sent if the first is not heeded. Any subscriber wishing the Review discontinued will please send a postal at once upon receipt of the first notice, otherwise it will be assumed that he wishes the Review continued, and will pay for it again. Any one who orders to have the Review stopped at the expiration of the time paid for will please say so when subscribing, and the request will be complied with.

Flint, Michigan, July 15, 1907.

Advertising Rates.

All advertisements will be inserted at a rate of 15 cents per line. Non-paid space each week of 2 lines. Non-paid space make 1 inch. Discounts will be given as follows:

On 10 lines and upwards 3 times, 5 per cent. 6 times, 15 per cent. 9 times, 25 per cent. 12 times, 35 per cent.

On 20 lines and upwards, 3 times, 10 per cent. 6 times, 20 per cent. 9 times, 30 per cent. 15 times, 40 per cent.

On 30 lines and upwards, 3 times, 20 per cent. 6 times, 30 per cent. 15 times, 40 per cent. 12 times, 50 per cent.

Clubbing List.

I will send the REVIEW with—

Gleanings (new)	(\$1.00).....	\$1.75
American Bee Journal, (new)	(1.00).....	1.75
Canadian Bee Journal	(1.00).....	1.75
American Bee Keeper	(1.50).....	1.75
Ohio Farmer	(1.00).....	1.75
Farm Journal (Phila)	(1.50).....	1.75
Rural New Yorker	(1.00).....	1.75
The Century	(1.00).....	1.50
Michigan Farmer	(1.00).....	1.50
Prairie Farmer	(1.00).....	1.75
American Agriculturist	(1.00).....	1.75
Country Gentleman	(2.00).....	3.15
Harper's Magazine	(1.00).....	4.10
Harper's Weekly	(1.00).....	4.20
Youth's Companion (new)	(1.75).....	2.35
Cosmopolitan	(1.00).....	1.90
Success	(1.00).....	1.75

National Bee-Keepers' Association.

Objects of the Association.

To combine and protect the interests of its members.

To promote a higher grade of honey.

Annual Membership \$1.00.

- and Bee-keepers' Association
 L. A. ALTHOFF, Flint, Mich.
 President
 C. E. HITCHCOCK, Fremont, Mich.
 Vice-President
 J. A. GREEN, Grand Rapids, Mich.
 Secretary
 N. E. FRANK, Philadelphia, Wis.
 Gen. Manager and Treasurer.

Board of Directors.

- Wm. M. E. W. Flint, Mich.
 R. L. TAYLOR, Lapeer, Mich.
 C. L. T. JEFFERSON, San Antonio, Tex.
 R. C. Aikin, Loveland, Colorado
 P. H. Edwards, Staten Island, N. Y.
 E. WHITE, the Friend, Neb.
 JAS. A. STONE, St. Louis, Ill.
 G. M. DEWITT, Buffalo, N. Y.
 R. A. HOFFMANN, St. Louis, Mo.
 M. H. MENDEL, St. Anthony, Cal.
 C. A. HART, Richland, Conn., Wis.
 F. WILCOX, Mauston, Wis.

Names of Bee-Keepers TYPE WRITTEN

The names of my customers and of those asking for sample copies have been saved and written in a book. I have arranged the card and arranged alphabetically in the largest States, and though this has been secured at an expense of hundreds of dollars, I would furnish it to any person or others at \$2.00 per thousand names. The former price was \$2.50 per 1000, but now I have a typewriter, and by using the name and address I can furnish them at \$2.00. A manufacturer who wishes for a list of the names of bee-keepers in his own State only or a section in the adjoining States can be accommodated. Here is a list of the States and the number of names in each State.

Arizona 46	Ky 182	N. C. 60
Ark 82	Kans 350	New Mex. 54
Ala 80	La 35	Oregon 109
Calif 378	Mo 500	Ohio 1306
Colo 28	Minn 334	Penn 912
Canada 1200	Mich 1770	R. I. 46
Conn 107	Mass 275	S. C. 40
Del 38	Md 94	Tenn 176
Ill 18	Maine 270	Tex 270
Ia 100	Miss 70	Utah 68
Ga 90	N. V. 1700	Vt 205
Ind 714	Neb 345	Va 182
Ills 1375	N. J. 130	W. Va 178
Iowa 800	N. H. 158	Wash 122
		Wis 620

W. Z. HUTCHINSON Flint, Mich

AUGUST, 1907.



Flint, Michigan, \$1.00 a Year

Bee-Keepers' Review

PUBLISHED MONTHLY

W. Z. HUTCHINSON, Editor and Publisher

Entered as second class matter at the Post Office Feb. 1, 1905. Serial number 250.

Terms \$1.00 a year to subscribers in the United States, Canada, Cuba and Mexico. To all other countries postage is 24 cts a year extra.

Discontinuances The Review is sent until orders are received for its discontinuance. Notice is sent at the expiration of a subscription, further notices being sent if the first is not heeded. Any subscriber wishing the Review discontinued will please send a postal note upon receipt of the first notice, otherwise it will be assumed that he wishes the Review continued, and will pay for it soon. Any one who prefers to have the Review stopped at the expiration of the time paid for, will please say so when subscribing, and the request will be complied with.

Flint, Michigan, August 15, 1907

Advertising Rates.

All advertisements will be inserted at a rate of 15 cents per line. Normal space each insertion, 12 lines. Normal space make 1 inch. Discounts will be given as follows:

On 10 lines and upwards, 3 times, 5 per cent, 6 times, 15 per cent, 9 times, 25 per cent, 12 times, 35 per cent.

On 20 lines and upwards, 3 times, 10 per cent, 6 times, 20 per cent, 9 times, 30 per cent, 15 times, 40 per cent.

On 30 lines and upwards, 3 times, 20 per cent, 6 times, 30 per cent, 15 times, 40 per cent, 12 times, 50 per cent.

Clubbing List.

I will send the REVIEW with—

Gleanings, (new)	(\$1.00)	\$1.75
American Bee Journal, (new)	(1.00)	1.75
Canadian Bee Journal	(1.00)	1.75
American Bee Keeper	(.50)	1.40
Ohio Farmer	(1.00)	1.75
Farm Journal (Phila)	(.50)	1.20
Rural New Yorker	(1.00)	1.85
The Century	(4.00)	4.50
Michigan Farmer	(1.00)	1.65
Prairie Farmer	(1.00)	1.75
American Agriculturist	(1.00)	1.75
Country Gentleman	(2.50)	3.15
Harper's Magazine	(4.00)	4.10
Harper's Weekly	(4.00)	4.20
Youths' Companion (new)	(1.75)	2.35
Cosmopolitan	(1.00)	1.90
Success	(1.00)	1.75

National Bee-Keepers' Association.

Objects of the Association.

To promote and protect the interests of its members.

To prevent the adulteration of honey.

Annual Membership \$1.00.

Send dues to Treasurer.

- L. A. ASPINWALL, Jackson, Mich. President.
 GEORGE E. HILTON, Fremont, Mich. Vice-President.
 JAS. A. GREEN, Grand Junction, Colo. Secretary.
 N. E. FRANCE, Platteville, Wis. Gen. Manager and Treasurer.

Board of Directors.

- WM. McELROY, Woodburn, Ont.
 R. L. TAYLOR, Lapeer, Mich.
 UDO TREPPEWEIN, San Antonio, Tex.
 R. C. AIKIN, Loveland, Colorado.
 P. H. ELWELL, Starkville, N. Y.
 E. WHITCOMB, Fremont, Neb.
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 G. M. DOOLITTLE, Bordino, N. Y.
 R. A. HOLEKAMP, St. Louis, Mo.
 M. H. MENDELSON, Ventura, Cal.
 C. A. HATCH, Richland, Ohio, Wis.
 F. WILCOX, Mauston, Wis.



The names of my customers, and of those asking for sample copies, have been saved and written in a book. There are several thousand all arranged alphabetically in the largest States, and, though this list has been secured at an expense of hundreds of dollars, I would furnish it to advertisers or others at \$2.00 per thousand names. The former price was \$2.50 per 1000, but I now have a typewriter, and by using the manifold process I can furnish them at \$2.00. A manufacturer who wishes for a list of the names of bee-keepers in his own State only, or possibly in the adjoining States, can be accommodated. Here is a list of the States and the number of names in each State:

Arizona 46	Ky 182	N. C. 60
Ark 82	Kans 350	New Mex. 54
Ala. 80	La. 35	Oregon 109
Calif. 375	Mo. 500	Ohio 1300
Colo. 228	Minn. 334	Penn. 912
Canada 1200	Mich. 1770	R. I. 46
Conn. 162	Mass. 275	S. C. 40
Del. 25	Md. 94	Tenn. 176
Del. 18	Maine 270	Tex. 270
Fla. 100	Miss. 70	Utah 68
Ga. 90	N. Y. 1700	Vt. 205
Ind. 744	Neb. 345	Va. 182
Ills. 1375	N. J. 130	W. Va. 178
Iowa 800	N. H. 158	Wash. 122
		Wis. 620

W. Z. HUTCHINSON, Flint, Mich.

Danzenbaker PRIZES.

It is to be expected that so many bee-keepers are anxious to produce year after year a very ordinary grade of honey as regards its average quality, when by a little more care and having more suitable hives, and by taking the honey from the hive at just the right time a much larger percentage of " fancy " or " extra fancy " honey could be produced, which would sell at a much higher price. The experience of honey merchants generally is that there is no difficulty in disposing of large stocks of fancy or extra fancy, even when the market is dull. It is the ordinary grades that gather most at these times. We believe, too, that bee-keepers would be very much satisfied with their seasons work if their last efforts were made to produce a really fine product. To increase further the interest in extra fancy honey, the following prizes are offered for honey produced in Danzenbaker hives during the year 1907 under the following conditions:

FIRST. As above stated the honey must be produced in a Danzenbaker hive other than the present style of any Danzenbaker hive that has been put out within the last two years. These hives may be had of any dealer in bee-keeping supplies in any part of the country.

SECOND. For Classes 1 and 2 we require a shipment of approximately the amount stated to be made by the bee-keeper direct to us at Medina. After the prizes have been awarded the honey, on receipt for competition in Class 1 or 2 will be held subject to the instructions of the producer. We will allow at a rate of one per cent commission or we will ship it to any point direct by freight or express. There being no local honey markets in our immediate vicinity such as Columbus, Cincinnati, Cleveland, Buffalo and Pittsburg it can be disposed of without difficulty at a good market price, and the shipper will not have to lose a good market by shipping it here. Neither the honey award a prize nor that which obtained no prize is to be our property, but will be sold subject to the instructions of the producer who sends it to us. We are interested only in inspecting it to award the prizes.

THIRD. For all honey submitted for prizes we must have a definite statement from the producer regarding the conditions under which it was produced, whether a light or heavy flow of honey, how the colony was handled, how many colonies in the yard from what source produced, etc.

FOURTH. For Classes 3, 4 and 5, we must, in addition to the above report, have the signature of two witnesses certifying to the correctness of the

report. If the party who sends us the report of the competition is well known to us we shall not require these witnesses. References may be given instead of the signature of witnesses if desired. All parties entering to compete for these prizes should send to Danzenbaker which we shall furnish on which the report may be made out.

FIFTH. It will be noticed in the last three classes, three to five inclusive, that it is not at all necessary to send us the honey, all we require is a report.

SIXTH. We reserve the right to limit the number of awards in each class, or to make no awards in a class if there are no satisfactory entries for the same.

SEVENTH. No contestant will be awarded more than one prize in each class, but may make two entries of first, one in Class 1 or 2, and another in Class 3, 4 or 5.

The classification of the prizes are as follows:

CLASS 1. For best shipment of 200 lbs. of comb honey in Danzenbaker sections.

CLASS 2. For best report of comb honey in Danzenbaker sections.

CLASS 3. For best report of yield from single colony in Danzenbaker hive.

CLASS 4. For best report of yield from five colonies in Danzenbaker hives.

CLASS 5. For best report of general results from use of Danzenbaker hives.

For each class there will be ten prizes as follows:

FIRST	\$10.00	
SECOND	\$7.00	Five Prizes
THIRD	\$5.00	Ten Prizes for each Class
FOURTH	\$2.00	
FIFTH TO TENTH	\$1.00 each	Fifty Prizes in all

This is the time to decide to enter this competition. No matter where you live, whether in the United States or elsewhere, you can certainly find one class in which you can make an entry, and as there are ten prizes in each class we believe that no one will be really disappointed in the results unless it is ourselves, and we hope that we shall not be, but see a large number of entries. Even if you fail to get a prize you will still have increased the value of your own product by your efforts to produce a more successful result of an extra quality of honey.

The A. I. ROOT CO., Medina, Ohio.

SEPTEMBER, 1907.



Flint, Michigan, \$1.00 a Year

Bee-Keepers' Review

THREE MONTHLY

W. Z. HUTCHINSON, Editor and Publisher

Entered as second class matter of the First Post Office, Flint, Michigan, on a number 1330.

Terms \$3.00 a year to subscribers in the United States, Canada, Cuba and Mexico. To all other countries postage is 24 cts a year extra.

Discontinuances The Review is sent until a definite order is received for discontinuance. Notice sent at the expiration of a subscription, whether by mail or otherwise, if not first received, is not binding. Any subscriber wishing to discontinue will please send a postal notice upon receipt of the first issue, otherwise it will be assumed that he wishes the Review continued, and will pay for it soon. Any one who orders to have the Review stopped at the expiration of the time paid for, will please say when subscribing, and the request will be complied with.

Flint, Michigan, Sept. 15, 1907

Advertising Rates.

All advertisements will be inserted at a rate of 15 cents per line. Normal space each insertion 2 lines. Normal space make 1 inch. Discounts will be given as follows:

On 10 lines and upwards 3 times 5 percent 6 times 15 percent 9 times 25 percent 12 times 35 percent

On 20 lines and upwards 3 times 10 percent 6 times 20 percent 9 times 30 percent 15 times 40 percent

On 30 lines and upwards 3 times 20 percent 6 times 30 percent 15 times 40 percent 12 times 50 percent

Clubbing List.

I will send the REVIEW with—

Gleanings (new)	(\$1.00).....	\$1.75
American Bee Journal (new) ..	(1.00).....	1.75
Canadian Bee Journal	1.00.....	1.75
American Bee Keeper	1.50.....	1.40
Ohio Farmer	1.00.....	1.75
Farm Journal (Phila)	1.50.....	1.20
Rural New Yorker	1.00.....	1.75
The Century	4.00.....	4.50
Michigan Farmer	1.00.....	1.75
Prairie Farmer	1.00.....	1.75
American Agriculturist	1.00.....	1.75
Country Gentleman	2.50.....	3.15
Harper's Magazine	4.00.....	4.10
Harper's Weekly	4.00.....	4.20
Youth's Companion (new)	1.75.....	2.35
Cosmopolitan	1.00.....	1.00
Success.....	1.00.....	1.75

National Bee-Keepers' Association.

Objects of the Association.

To promote the welfare and interests of all bee-keepers.

To prevent the importation of bees.

Annual Membership \$1.00.

- Secretary: T. E. FRISVOLD, Treasurer: L. A. ARMSTRONG, Editor: W. Z. HUTCHINSON, President: G. E. HAYDEN, From the Middle West: J. A. GREEN, Grandmaster: J. C. FRENCH, Secretary: N. E. FRISVOLD, Platteville, Wis., Grand Marshal and Treasurer.

Board of Directors.

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R. L. TAYLOR, LaPorte, Mich., Vice President
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R. A. HOFFMANN, St. Louis, Mo.
M. H. MENDELSON, Ventura, Cal.
C. A. HATCH, Richland, Colo., Wis.
E. W. WICK, Mauston, Wis.

Names of Bee-Keepers TYPE WRITTEN

To the names of my customers, and I have asked for sample copies have been saved and written in a book. There are several thousand all arranged alphabetically in the largest States, and, though this list has been secured at an expense of hundreds of dollars, I would furnish it to a few sets or others at \$2.00 per thousand names. The former price was \$2.50 per 1000, but I now have a typewriter, and by using the machine I can save a great deal of money at \$2.00. A manufacturer who wishes for a list of the names of Bee-keepers in his own State only, or possibly in the adjoining States, can be accommodated. Here is a list of the States and the number of names in each State:

Arizona 46	Ky 182	N. C. 60
Ark 82	Kans 350	New Mex 54
Ala 80	La 38	Oregon 109
Calif 378	Mo 500	Ohio 130x
Colo 228	Minn 334	Penn 912
Canada 1200	Mich 1770	R. I 46
Conn 162	Mass 275	S. C 40
Del 25	Md 94	Tenn 176
Fla 18	Me 270	Tex 270
Ill 100	Miss 70	Utah 68
Ind 90	N. Y 1700	Vt 205
Iowa 74	Neb 345	Va 182
Ills 1378	N. J 130	W. Va 178
Iowa 800	N. H 158	Wash 122
		Wis 620

W. Z. HUTCHINSON Flint Mich

OCTOBER, 1907



THE BEE-KEEPERS'

REVIEW

Published Monthly.

Flint, Michigan, \$1.00 a Year

Bee-Keepers' Review

PUBLISHED MONTHLY

W. Z. HUTCHINSON, Editor and Publisher

Entered as second class matter at the Flint, Michigan, Post-Office Feb. 21, 1893. Serial number 230.

Terms. \$1.00 a year to subscribers in the United States, Canada, Cuba and Mexico. To all other countries postage is \$4 cts a year extra.

Discontinuances. The Review is sent until orders are received for its discontinuance. Notice is sent at the expiration of a subscription, further notices being sent if the first is not heeded. Any subscriber wishing the Review discontinued, will please send a postal at once upon receipt of the first notice, otherwise it will be assumed that he wishes the Review continued, and will pay for it soon. Any one who prefers to have the Review stopped at the expiration of the time paid for, will please say so when subscribing, and the request will be complied with.

Flint, Michigan, Oct. 15, 1907

Advertising Rates.

All ads. statements will be inserted at a rate of 15 cents per line. Nonparel space, each insertion, 12 lines. Nonparel space make 1 inch. Discounts will be given as follows:

On 10 lines and upwards, 3 times, 5 per cent. on times, 15 per cent. 9 times, 25 per cent. 12 times, 35 per cent.

On 20 lines and upwards, 3 times, 10 per cent. 6 times, 20 per cent. 9 times, 30 per cent. 15 times, 40 per cent.

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Clubbing List.

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Gleanings, (new).....	\$1.00	1.75
American Bee Journal, (new).....	1.00	1.75
Canadian Bee Journal.....	1.00	1.75
American Bee Keeper.....	1.50	1.49
Ohio Farmer.....	1.00	1.75
Farmer Journal (Phila).....	1.50	1.75
Rural New Yorker.....	1.00	1.85
The Century.....	1.40	4.50
Michigan Farmer.....	1.00	1.65
Prairie Farmer.....	1.00	1.75
American Agriculturist.....	1.00	1.75
Country Gentleman.....	1.25	3.15
Harper's Magazine.....	1.00	4.10
Harper's Weekly.....	1.40	4.20
Youth's Companion, (new).....	1.75	2.35
Cosmopolitan.....	1.00	1.90
Success.....	1.00	1.75

National Bee-Keepers' Association.

Objects of the Association.

To promote and protect the interests of its members.

To prevent the adulteration of honey.

Annual Membership \$1.00.

- Secretary—
L. A. A. FRENCH, Jackson, Mich.
President—
GEO. E. HUTTON, Fremont, Mich.
Vice-President—
JAS. A. GREEN, Grand Junction, Col.
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M. H. MENDELSON, Ventura, Cal.
C. A. HATHBURN, Richland, Conn. Wis.
F. WELBY, Mauston, Wis.

Names of Bee-Keepers

TYPE WRITTEN

The names of my customers, and of those asking for sample copies, have been saved and written in a book. There are several thousand all arranged alphabetically in the largest States, and, though this list has been secured at an expense of hundreds of dollars, I would furnish it to advertisers or others at \$2.00 per thousand names. The former price was \$2.50 per 1000, but I now have a typewriter, and by using the manifold process, I can furnish them at \$2.00. A manufacturer who wishes for a list of the names of bee-keepers in his own State, or, possibly, in the adjoining States, can be accommodated. Here is a list of the States and the number of names in each State.

Arizona.....	46	Ky.....	182	N. C.....	60
Ark.....	82	Kans.....	350	New Mex.....	54
Ala.....	80	La.....	38	Oregon.....	100
Calif.....	378	Mo.....	500	Ohio.....	1300
Colo.....	228	Minn.....	334	Penn.....	912
Canada.....	1200	Mich.....	1770	R. I.....	46
Conn.....	162	Mass.....	275	S. C.....	40
Day.....	25	Md.....	94	Tenn.....	176
Del.....	18	Maine.....	270	Tex.....	270
Fla.....	100	Miss.....	70	Utah.....	68
Ga.....	90	N. Y.....	1700	Vt.....	205
Ind.....	744	Neb.....	345	Va.....	182
Ills.....	1375	N. J.....	130	W. Va.....	178
Iowa.....	800	N. H.....	158	Wash.....	122
				Wis.....	620

W. Z. HUTCHINSON, Flint, Mich.

Danzenbaker PRIZES.

It is to be regretted that so many beekeepers are satisfied to produce a year after year a crop of heavy grade of honey as regards its appearance, when by a little more care and having more suitable fixtures and by taking the honey from the hive at just the right time a much larger percentage of fancy (or extra fancy) honey could be produced which would sell at a much higher price. The principal difficulty in the raising of large stocks of fancy or extra fancy, even when the market is dull, is the plentiful grades that suffer most at these times. We believe, too, that beekeepers would be very much satisfied with their results if their best efforts were made to produce a really fine product. To increase further the interest in extra fancy honey, the following prizes are offered for honey produced in Danzenbaker hives during the year 1907, under the following conditions:

FIRST. As above stated the honey must be produced in a Danzenbaker hive, either the present style or any Danzenbaker hive that has been put out within the last few years. These hives may be of any make or kind, but they supplies in any part of the country.

SECOND. For Class 1 and 2 we require a shipment of approximately the amount stated to be made by the beekeeper direct to us at Medina. After the prizes have been awarded the honey entered for competition in Class 1 or 2 will be held subject to the instructions of the producer. We will send it at a free rate, but freight in express. There being good lines, markets near immediate vicinity such as Columbus, Cincinnati, Cleveland, Buffalo and Pittsburg, it can be disposed of without difficulty at good market prices, and the shipper will not have to lose a good market by shipping it here. Neither the honey awarded a prize, nor that which obtained no prize is to be our property, but will be sold subject to the instructions of the producer who sends it to us. We are interested only in inspecting it to award the prize.

THIRD. For all honey submitted for prizes we must have a written statement from the producer regarding the conditions under which it was produced, whether a light or heavy flow of honey, how the colony was handled, how many colonies in the yard, from what source produced, etc.

FOURTH. For Classes 3, 4 and 5, we must, in addition to the above report, have the signatures of two witnesses certifying to the correctness of the

report of the party who sends us the report for the competition, well known to us. We shall not require these witnesses' references may be given instead of the signature of witnesses if desired. All parties intending to compete for these prizes should send for blanks which we shall furnish on which the report may be made out.

FIFTH. It will be noticed in the last three classes, three to be inclusive, that it is not at all necessary to send us the honey. All we require is a report.

SIXTH. We reserve the right to limit the number of awards in each class, or to make no awards in a class if there are no satisfactory entries for the same.

SEVENTH. No contestant will be awarded more than one prize in each class, but may make two entries in each class, one in Class 1 or 2, and another in Class 3, 4 or 5.

The classifications for the prizes are as follows:
CLASS 1. For best shipment of 200 lbs. of comb honey in Danzenbaker sections.

CLASS 2. For best case of comb honey in Danzenbaker sections.

CLASS 3. For best report of yield from single colonies in Danzenbaker hives.

CLASS 4. For best report of yield from five colonies in Danzenbaker hives.

CLASS 5. For best report of general results from usual Danzenbaker hive.

For each class there will be ten prizes as follows:

FIRST. \$10.00	
SECOND. \$7.00	Five Classes.
THIRD. \$5.00	Ten Prizes for each Class.
FOURTH. \$2.00	
FIFTH. 1.50	Fifty Prizes in all.
	\$1.00 each.

This is the only time we decide to enter this competition. No matter where you live, whether in the United States or elsewhere, you can certainly find one class in which you can make an entry, and as there are ten prizes in each class we believe that no one will be greatly disappointed in the results unless it so happens and we judge that we shall not be but we will get a large number of entries. Even if you fail to get a prize you will doubtless have increased the value of your own product by your efforts to produce some big results or an extra quality of honey.

The A. I. ROOT CO., Medina, Ohio.

NOVEMBER, 1907



Flint, Michigan, \$1.00 a Year

Bee-Keepers' Review

PUBLISHED MONTHLY

W. Z. HUTCHINSON, Editor and Publisher

Entered as second class matter at the Flint Postoffice Feb. 2, 1888. Serial number 230.

Terms \$1.00 a year to subscribers in the United States, Canada, Cuba and Mexico. To all other countries postage is 24 cts a year, extra.

Discontinuances The Review is sent until orders are received for its discontinuance. Notice is sent at the expiration of a subscription, further notices being sent if the first is not heeded. Any subscriber wishing the Review discontinued, will please send a postal at once upon receipt of the first notice, otherwise it will be assumed that he wishes the Review continued, and will pay for it soon. Any one who fails to have the Review stopped at the expiration of the time paid for, will please say so when subscribing, and the request will be complied with.

Flint, Michigan, Nov. 15, 1907

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American Bee Keeper (1.50)	1.40
Ohio Farmer (1.00)	1.75
Farm Journal (Phila) (1.50)	1.20
Rural New Yorker (1.00)	1.85
The Century (1.40)	4.50
Michigan Farmer (1.00)	1.65
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Success (1.00)	1.75

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Send dues to Treasurer.

- L. A. A. PINWALL, Jackson, Mich. President
- GEN. E. HILTON, Fremont, Mich. Vice President.
- JAS. A. GREEN, Grand Junction, Colo. Secretary
- N. E. FRANCE, Platteville, Wis. Gen. Manager and Treasurer.

Board of Directors.

- WM. McEVROY, Woodburn, Ont.
- R. L. TAYLOR, Lapeer, Mich.
- UDY TREFFERWEIN, San Antonio, Tex.
- R. C. AIRIN, Loveland, Colorado
- P. H. ELWOOD, Sta. F.ville, N. Y.
- E. WHITCOMB, Fremont, Neb.
- JAS. A. STONE, Springfield, Ills.
- G. M. DOOLITTLE, Boroquo, N. Y.
- R. A. HOLEKAMP, St. Louis, Mo.
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It is not only offered that so many bee-keepers are satisfied to produce each year a very ordinary grade of honey as regards its appearance, when by a little more care and having more suitable fixtures, and by taking the honey from the hive at just the right time a much larger percentage of "fancy" or "extra fancy" honey could be produced which would sell at a much higher price. The experience of honey merchants generally is that there is no difficulty in disposing of large stocks of fancy or extra fancy when the market is dull. It is the inferior grades that suffer most at these times. We believe, too, that bee-keepers would be very much satisfied with their seasons' work if their best efforts were made to produce a really fine product. To increase further the interest in extra fancy honey, the following prizes are offered for honey produced in Danzenbaker hives during the year 1907 under the following conditions:

FIRST. As above stated the honey must be produced in a Danzenbaker hive, either the present style or any Danzenbaker hive that has been put out within the last few years. These hives may be had of any dealer in bee-keepers' supplies in any part of the country.

SECOND. For Classes 1 and 2 we require a shipment of approximately the amount stated, to be made by the bee-keeper direct to us at Medina. After the prizes have been awarded the honey entered for competition in Class 1 or 2 will be held subject to the instructions of the producer. We will sell it at a five per cent. commission or we will ship it to any point direct by freight or express. There being good honey markets in our immediate vicinity, such as Columbus, Cincinnati, Cleveland, Buffalo and Pittsburg, it can be disposed of without difficulty at good market prices, and the shipper will not have to lose a good market by shipping it here. Neither the honey awarded a prize nor that which obtained no prize is to be our property, but will be sold subject to the instructions of the producer who sends it to us. We are interested only in inspecting it to award the prizes.

THIRD. For all honey submitted for prizes we must have a definite statement from the producer regarding the conditions under which it was produced, whether a light or heavy flow of honey, how the colony was handled, how many colonies in the yard, from what source produced, etc.

FOURTH. For Classes 3, 4 and 5, we insist, in addition to the above report, have the signature of two witnesses certifying to the correctness of the

report. If the party who sends us the report for the competition is well known to us, we shall not require these witnesses. References may be given instead of the signature of witnesses if desired. All parties intending to compete for these prizes should send for blanks which we shall furnish on which the report may be made out.

FIFTH. It will be noticed in the last three classes, three to five inclusive, that it is not at all necessary to send us the honey, all we require is a report.

SIXTH. We reserve the right to limit the number of awards in each class, or to make no awards in a class if there are no satisfactory entries for the same.

SEVENTH. No contestant will be awarded more than one prize in each class, but may make two entries if desired, one in Class 1 or 2 and another in Class 3, 4 or 5.

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CLASS 3. For best report of yield from single colony in Danzenbaker hive.

CLASS 4. For best report of yield from five colonies in Danzenbaker hives.

CLASS 5. For best report of general results from use of Danzenbaker hives.

For each class there will be ten prizes as follows:

FIRST	\$10.00	
SECOND	\$7.00	Five Classes
THIRD	\$5.00	Ten Prizes for each Class
FOURTH	\$2.00	
FIFTH TO TENTH	\$1.00 each	Fifty Prizes in all

This is the time to decide to enter this competition. No matter where you live, whether in the United States or elsewhere, you can certainly find one class in which you can make an entry, and as there are ten prizes in each class we believe that no one will be greatly disappointed in the results unless it is ourselves, and we hope that we shall not be, but see a large number of entries. Even if you fail to get a prize you will doubtless have increased the value of your own product by your efforts to produce some fine results of an extra quality of honey.

The A. I. ROOT CO., Medina, Ohio.



Flint, Michigan, \$1.00 a Year

Danzenbaker PRIZES.

THE DANZENBAKER PRIZES are given to the best entries in the following classes:—

First Class.—For the best entry in the class of entries for the year 1901, which shall be judged by the judges of the year 1902.

Second Class.—For the best entry in the class of entries for the year 1902, which shall be judged by the judges of the year 1903.

Third Class.—For the best entry in the class of entries for the year 1903, which shall be judged by the judges of the year 1904.

Fourth Class.—For the best entry in the class of entries for the year 1904, which shall be judged by the judges of the year 1905.

Fifth Class.—For the best entry in the class of entries for the year 1905, which shall be judged by the judges of the year 1906.

Sixth Class.—For the best entry in the class of entries for the year 1906, which shall be judged by the judges of the year 1907.

THE DANZENBAKER PRIZES are given to the best entries in the following classes:—

First Class.—For the best entry in the class of entries for the year 1901, which shall be judged by the judges of the year 1902.

Second Class.—For the best entry in the class of entries for the year 1902, which shall be judged by the judges of the year 1903.

Third Class.—For the best entry in the class of entries for the year 1903, which shall be judged by the judges of the year 1904.

Fourth Class.—For the best entry in the class of entries for the year 1904, which shall be judged by the judges of the year 1905.

Fifth Class.—For the best entry in the class of entries for the year 1905, which shall be judged by the judges of the year 1906.

Sixth Class.—For the best entry in the class of entries for the year 1906, which shall be judged by the judges of the year 1907.

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The A. I. ROOT CO., Medina, Ohio.





