The bee-keepers' instructor. Vol. IV, No. 5 May, 1882

Somerset, Kentucky: Webster Thomas & Sons, May, 1882

VOL. IV. MAY, 1882. NO. 5.

THE BEE-KEEPERS' INSTRUCTOR.

A MONTHLY JOURNAL

Devoted to the Science of Bee-Keeping in All its Branches.

Webster Thomas, Editor.

WEBSTER THOMAS & SONS,
PUBLISHERS AND PROPRIETORS,
SOMERSET, KENTUCKY.

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W. THOMAS & SONS.

THE

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Published the middle of each month. "EXCELSIOR." Terms, 50c. per year, or 30c. for 6 months.

Conventions.

Convention Directory.

May 11—Champlain Valley, at Middlebury, Vt. T. Brookins, Sec., East Shoreham, Vt.
16—N. W. Ill. and S. W. Wis., at Rock City, Ill. Jonathan Stewart, Sec., Rock City, Ill.
25—Iowa Central, at Winterset, Iowa. Henry Wallace, Sec'y.
June 3—Hart County, Ky., at Woodsonville, Ky.

Union Bee-Keepers' Association.

The Union Bee-Keepers' Association met at the rooms of the Moody House in Eminence, Ky., April 27, Pres. Dr. L. E. Brown in the chair. After the transaction of the usual business of the association, an invitation for new members was given, and several names were added to the list. On motion, J. H. Reed, of New Orleans, Ind., was made an honorary member of the association.

The President then delivered his annual address. He said that the outlook for the future prosperity of bee-keepers is not as bright at this time as it was before the severe frosts, much of the early resources for honey being cut off. Nevertheless, the future is before us, and an abundant white clover bloom may yet cause the apiarist to forget the late disaster.

Dr. E. Drane then addressed the convention on the subject of "Are we Profiting any one by our meetings." The speaker took the grounds that no good had resulted from the foolish fashion of advising everybody to "keep bees." He thought that bee culture will pay only in the hands of those who are "fitted" for the occupation. None others should be advised to undertake it.

G. W. Demaree said he approved of every word the speaker had said, yet he could see much good resulting from our meetings. They are a pleasure to all of us, and besides, they educate the people, giving them a proper understanding of the products of the apiary. Our association has contributed much to the making of our good local market for honey.

Mr. J. H. Reed, of New Orleans, Ind., said the last speaker had demonstrated that it is possible to educate the consumer, as in the cases named.

Dr. Drane explained that while he thought it time lost to attempt to educate the people to keep bees intelligently, he admitted that if you can get a fellow to *taste* honey, that will educate him, for "honey is good."

Elder W. J. Mason being in the room, said that if allowed to speak he would like to say that he was quite an old man, and had handled bees for 40 years in the State of Missouri, and was satisfied that there was no hive so good to keep bees in as the common box gum, with boxes on them. He knew that bees all die in Missouri in "patent gums."

The Secretary having a case of one-pound sections in the room, all primed ready for the bees, President Brown arose and drew out one of the sections and held it up, with the thin foundation looking as natural as the handiwork of the bees, and explained its use; that tons of such honey was being sold for the cash—shipped across the ocean everywhere—the result of improvements over the old box hive system.

G. W. Demaree said that his old friend was 40 years behind the times; that bees are always uncertain property in any kind of hives, when not under the care of an intelligent apiarist, but are as easily raised and as certain in their life tenure as other living creatures, when properly managed.

An old gentlemen—Mr. Wooldrige—arose to enquire of the association "how they keep the moths from taking their bees." Mr. Reed, of Ind., said keep them out with Italian bees; they are proof

against the bee-moth. W. T. Stewart said keep your bees strong and in a healthy condition, and they will take care of themselves.

Elder Mason insisted that there was a wide difference between the systems (as he heard it here) of bee-keeping in this State and Missouri.

Dr. Drane had no doubt but that our improved system of bee-keeping is essentially different from what it was in Missouri 40 years ago, or anywhere else. But intelligent, progressive bee-keepers in Missouri keep bees now just like intelligent, progressive bee-keepers keep them in Kentucky or elsewhere.

The Question Box furnished the following questions:

1. What is the value of a colony of bees in a box hive in April?

Dr. Drane said the queen is worth at that time of year, $2.00; bees, $2.00; 10 lbs. of honey in bad shape, for feeding, $1.00. These amounts, less $1.00 for transferring, leaves the value of the colony at $4.00.

Mr. Reed said that he had not been in the habit of buying box hives, and believed the queen and bees to be worth nothing while in a box hive.

Mr. Demaree thought that a queen in a box hive was most likely to be a "scrub," and would have no use for her but a short time, and thought that $1.00 would be enough for her.

2. What is the value of a good colony of bees in a movable frame hive, in April?

Dr. Drane said $10.00; if extra fine Italians, $12.00.

Mr. Demaree thought that a skillful bee-keeper could safely pay $10.00 for a good colony of bees in April, but he did not think it would pay a novice to buy bees at that price.

President Brown said he gave $25.00 for his first colony of Italian bees, and had realized $500 from the investment.

Convention then adjourned to meet after dinner at Stewart's Gallery.

AFTERNOON SESSION.

Convention called to order by the President, when the association proceeded to elect officers for the ensuing year. Dr. E. Drane was elected President; Dr. Wm. M. Rogers, Vice President for Shelby county; W. T. Stewart, Eminence, Vice President for Henry county, and G. W. Ashley, Vice President for Jefferson county. G. W. Demaree, of Christiansburg, was re-elected Secretary, and Dr. L. E. Brown was elected Treasurer. Dr. Drane on taking the chair said he was "pumped dry," and would only thank the convention for the honor conferred on him.

The first question propounded was: At what actual cost can a pound of honey be produced in good marketable shape?

G. W. Demaree thought it as easy to answer the question as it is for the farmer to calculate what it costs him to produce a pound of beef or pork. Of course locality has much to do with it, but he believed he could produce it at an actual cost of 5 cents per lb. It would take a high order of skill to do this—honey is therefore worth 20 cents per lb.

President Drane thought it could not be done.

W. T. Stewart coincided with Mr. Demaree.

Mr. Reed gave his attention to queen rearing, and was not prepared to pass upon the question. Neither was Mr. Ashley prepared to decide.

The following resolution was adopted:

Resolved, That this association tender its thanks to W. T. Stewart, Dr. Ed. Drane, and to the ladies, for the princely manner in which they entertained members of the association, and to the editors of the *American Bee Journal*, BEE-KEEPERS' INSTRUCTOR, and *California Apiculturist*, for sample copies of their valuable papers. Also to Mr. Holland for his presence in the interest of the *Louisville Daily Commercial* and *Henry County Constitutionalist*, and that copies of these proceedings be forwarded for publication to the *Farmers' Home Journal*, *American Bee Journal*, and BEE-KEEPERS' INSTRUCTOR.

The convention then adjourned, to meet at Shelbyville, Ky., on the 5th day of October, 1882. E. DRANE, *Pres't.*

G. W. DEMAREE, *Sec'y.*

Barren County, Ky., Convention.

The bee-keepers of Barren county, Ky., met in convention at the Sinking Spring school house, near Glasgow, on the first Saturday in April. The house was called to order by President I. N. Greer. The roll-call being dispensed with, the President calledfor new members; several came forward and gave their names.

The minutes of the previous meeting were called for, read by the Secretary, and approved.

The election of officers for the ensuing year was held, and resulted as follows: President, I. N. Greer; Vice President, Mike Wynager; Secretary, H. C. Davis.

The following subject was then discussed: What is the best plan to prepare bees for winter to prevent dysentery in the spring?

N. H. Holman said he wintered on summer stands, by placing a box over the hive with about six inches space between the box and the hive, with the entrance open. He confines his bees in the upper story with the honey board, and has holes in the honey board, covered with perforated tin, to let the moisture escape.

Mr. Wynager said he removes the combs from the walls of the hives, and inserts an inch plank with quilt on top, with leaves or chaff for absorbents.

Dr. Allen said dysentery was caused by impure honey and too long confinement. Give your bees plenty of good sealed honey and keep them dry; winter on honey gathered early, and not on fall honey.

The President then appointed the following committees, to report after dinner: To arrange for a honey show, R. J. Parker, W. J. Bradford, Wm. Arnot and Mike Wynager; on questions for discussion, N. H. Holman and M. S. Reynolds.

AFTERNOON SESSION.

The President called the house to order at 1 o'clock. Dr. Allen being called for, gave an interesting lecture on the production of bees and honey. Among other things he said honey was a God-given sweet, and good enough for the gods to eat, and that all farmers, and many others, could have honey, if they would give a little more time and attention to bees.

The committee on time and place of meeting reported that they had selected Browder's Chapel as the place, and the second Saturday in August as the time. The report was received and committee discharged.

Question—Which is better, natural or artificial swarming?

Mr. Wynager said, let your bees swarm if you are not an expert.

N. H. Holman said he preferred artificial swarming.

A. C. Davis said he thought artificial swarming the most desirable.

Wm. Arnot prefered natural swarms.

Question—Will it be profitable for every farmer to keep 10 or 12 colonies of bees? or is there any danger of becoming overstocked?

N. H. Holman said we might overstock by all keeping bees.

M. S. Reynolds said we might overstock if we did not provide bee pasturage.

Mr. Wynager thought there was no danger of overstocking if you looked after your bees as you do other stock.

Question—Which is the most profitable, extracted or comb honey?

N. H. Holman said that if you wish to increase, extracted is the most profitable; it you want no increase, comb honey is the most profitable.

Mr. Wynager said extracted was the most profitable, unless you use comb foundation.

J. T. Gray said he sells his extracted honey for 15 cents per pound; thought you could get twice as much extracted as comb honey from the same number of colonies.

On motion, J. H. Adams, of Glasgow Junction, Barren Co., Ky., was appointed agent for the purchase of apiarian supplies.

On motion, the Secretary was instructed to furnish the *American Bee Journal*, BEE-KEEPERS' INSTRUCTOR, *Farmers' Home Journal* and the *Glasgow Times*, each with a copy of the report of the proceedings.

The thanks of the convention were tendered to the neighborhood of Sinking Spring school house for their good attendance, and especially to the ladies for their presence and good dinner.

The convention then adjourned, to meet at Browder's Chapel the second Saturday in August. I. N. GREER, *Pres't.*

H. C. DAVIS, *Sec'y.*

Our Contributors.

For the Bee-Keepers' Instructor.

Drones From Worker Eggs.

FRANK R. ROE.

I believe (and I don't believe I am mistaken) that I have drones produced from eggs that might have produced workers. I am aware of the fact that this is contrary to the theories of our most highly-respected apiarists, but I don't think any of them will "tackle" a little unknown "pennyfiest" like me, so I guess I am safe in giving this report.

To commence from the beginning, this winter (February, 1882) I had a colony of Italian bees, which were nearly all dead. The queen was alive, and as she was a valuable one I wished to save her. Accordingly I removed a hybrid from her throne and introduced the Italian, which was accepted after two weeks' caging. In about two weeks after she was missing. I then (March 10th) gave the hybrids a comb (which was all worker cells) containing sealed brood, larva in all stages,

and eggs. The comb was taken from an Italian colony. They started two queen cells on it, and in capping over the brood about fifty cells scattered promiscuously over the combs were capped as drones. I watched them carefully, and on April 12th some of the bees hatched from those cells, which proved to be drones. I saw some just crawling from the cells. In the meantime, one of the queens hatched and tore the other cell down, and the other brood hatched, which were common worker bees.

That there were drone eggs in the comb given them does not look reasonable, as I have been watching the brood of the Italian queen and have not found a single cell capped as drone, and there are no drones in that hive.

Jordan, Jay county, Ind.

For the Bee-Keepers' Instructor.

Some Experiments.

G. W. DEMAREE.

Last fall when uniting some queen-rearing colonies, I found one strong nucleus under the influence of a fertile worker—perhaps several of them, judging from the number of eggs that appeared in the combs. This colony having had no young to feed and nurse for some time, being queenless, had filled three or four combs full of a mixture of pollen and honey. This state of things existing, I conceived the idea of trying a double experiment. (1.) To see how long fertile workers are capable of laying eggs. (2.) To ascertain whether or not they would winter safely on a mixture of honey and pollen. To this end I removed every comb that contained sealed stores and put the bees on four frames that contained nothing but a mixture of pollen and honey. They were prepared for winter by placing a division board at one side, and two quilts over the tops of the frames. They reared drones in abundance at the start, but all signs of fertile workers disappeared by the middle of the winter. The experiment shows that worker bees do not have the vitality to lay eggs but a few weeks at most. These bees reared drones through the coldest part of the winter, having nothing but a mixture of pollen and honey (unsealed) to subsist upon, and came through the winter bright and clean.

Another experiment tried was of much interest to me, and is perhaps worthy of mention. In February last I discovered that a queen raised late in the fall had failed to "mate," and hence was a genuine drone layer. She was quite prolific, but did not lay a single worker egg. There was a patch of drone cells near the center of the brood nest, and from these were hatched some as fine looking drones as I ever saw. There being no drones in existence at the time except those sons of an unwedded mother, I determined to ascertain if it was possible to get a queen fertilized by them. I proceeded to destroy the unmated queen and gave the bees some larva just hatched. They reared a queen and she was fertilized in due time. Of course such an experiment could not be conclusive, but all the probabilities are in favor of her having mated with one of those fatherless (?) drones.

It is generally believed that queens reared by small nuclei, and such as hatch out in less than 13 days, are necessarily inferior. I have always accepted this doctrine because of the reasonableness of the conclusion, but my experience does not prove it to be correct. I now have two queens that were raised in a one-frame nucleus (in a glass case for observation), that are extra good queens. I also have a queen that is laying her third, if not her fourth, year, that was reared by an ordinary nucleus and hatched on the morning of the 10th day. I have also had one nine-day queen that kept her hive full of bees for more than two years. These may be exceptional cases, but they have been quite numerous with me. I am inclined to boast of two Cyprian queens,—daughters of an imported mother—mated with black drones, that produce workers that will pass anywhere as first-class, leather-colored Italians.

Christiansburg, Ky., April 25, 1882.

For the Bee-Keepers' Instructor.

Foundation. Its Manufacture and Use.

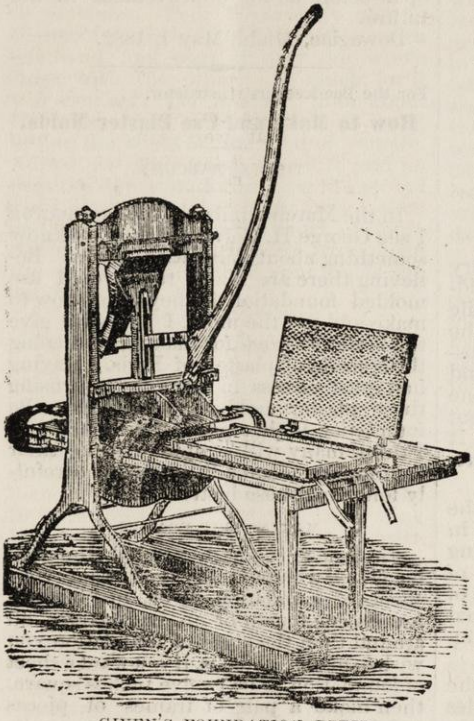
JAMES HEDDON.

We have just run off some 1,500 lbs. of wax into comb foundation—just about enough to experiment with. I do not propose in this paper to go into minute details of the manufacture or use of foundation, but there are some general principles that I believe I have demonstrated that are of use for all to know.

Last season we made some quite extensive tests in regard to the merits of the different styles of comb foundation given to our bees. As I have heretofore reported through some of our bee-papers, the thin base and bulky line Given foun-

dation came out ahead for the most desirable qualities. It will be noticed that Mr. A. I. Root in some of his recent experiments has come to similar conclusions, and by demonstration satisfied himself that the most desirable foundation is that which has the low, bulky, round line or side wall; that such foundation is not only used the quickest and put into the best shape by the bees, but that it is the easiest to manufacture. I think Mr. Root expects to make this style in the future, but upon a roller mill.

I have had the fortune (or misfortune) to have used six roller mills from three different manufacturers, but compared with the press for convenience and ease of manipulation, I can see no comparison whatever.



GIVEN'S FOUNDATION PRESS.

By reference to the above cut you will see what sort of a machine the press is. It is represented, as you see, with a wired frame laying on one leaf of the die book. You will see that it makes the foundation and fastens it solidly in the wires that have been previously woven into the frames. For this purpose the press has no equal or competitor.

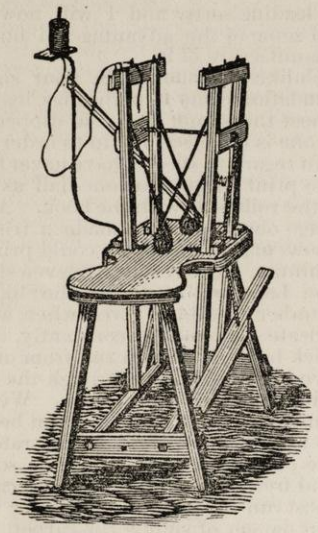
But I wish to speak of the press and book for manufacturing foundation in sheets not wired. I have spoken heretofore of how my bees manipulated the thin foundation in boxes last season, when placed beside the best samples of the other leading sorts, and I will now tell you of some of the advantages I find in the manufacture of it.

1. Unlike the roller mills, your sheets of foundation come off of the dies, leaving the sheet the same size you dipped it. Thus one is enabled to "dip to order."

2. In regard to speed I have never been able to print sheets near one-half as fast with the rollers as with the book. A few days ago one of my men made a trial to see how many sheets he could print in one minute. The result was seven sheets of the Langstroth size, as the highest number possible. Even when we lubricate our rollers constantly, they stick badly. We can run from one to two hundred sheets through the book with but one lubrication. We are convinced that we shall soon be able to use the book dry. At any rate the lye process we now employ is so dry and free from daubing that we can almost run the press in our parlor without danger of soiling the carpet.

I send you by mail to-day three samples of foundation—one thick, one thin, and one wired—that will show you just how this foundation looks, and how perfectly it imbeds the wire in the foundation. There are two points I wish to mention here. One is, that the most profitable foundation for boxes is that not lighter than eight square feet to the pound, such as the sample I send you. The base is so thin (even thiner than the natural comb) and the lines or side walls so bulky and soft that the bees draw these walls out quicker and further than in any other style, and leave no "fish bone," or thick, waxy ceptum, in the combs of honey. The other point is, that the purchase of wired foundation is a mistake. The best plan for those who have not colonies enough to warrant the purchase of a press and book, is to order their frames all wired and filled, or buy their foundation in the flat, and "hand press" it on the wired frames *a la* Root, and it will do well if properly done. Owing to the fact that transportation is high and the risk of damage considerable to made-up and filled frames, I think it hardly pays to order such from a long distance. The Given foundation (like the heavy sample I send you) is eminently adapted to hand pressing on the wires previously

woven into frames. For hand pressing I should prefer No. 30 tinned wire, rather than No. 35, which is best to use with the press.



GIVEN'S WIRING MACHINE.

The above cut shows Mr. Given's very ingeniously gotten up machine for holding frames and seating the operator while sewing in the wires. In regard to the wires in the foundation becoming exposed, and thereby injuring the brood, I find there is no objection to, or damage done by, such wires. The brood hatches out over them as perfectly as anywhere. It is also the same with even No. 30 wire, pressed on by hand.

I have never been able to make the use of full sized sheets of foundation in brood combs practicable without staying them with wire. I have never heard of any apiarist handling a large number of colonies that has. I do not believe that complete success has, or will be accomplished, without the wired frames.

But the dipping process in sheeting the wax is not so simple. Many troubles arise, and at best it is a "mussy" job, and requires far more capital than the printing process. One needs a room especially fitted up for the purpose. It ought to be roomy, and kept at an even temperature, and should have a hard wood floor. Some $25 worth of utensils are needed, besides the requisite implements and knowledge to purify the wax, by taking out all foreign substances and much of the coloring matter.

The thought has struck me that the future will develop a few places in the United States, where wax will be bought and sheeted into various sizes and thicknesses of sheets, by specialists, who will be so prepared to do the work that they will not only do it well, but much below the cost to us now, when each one does it for himself. Such an arrangement will make the home manufacture of foundation, both in wired frames and for the surplus department, practicable for the smaller apiarists who wish to possess the advantages of having their sheets perfectly secured in the frames, at a reasonable outlay of time and trouble.

While we should by no means undervalue the splendid advances of the past, we can not but realize how vast a field is open before us for improvement in the future.

Dowagiac, Mich., May 1, 1882.

For the Bee-Keepers' Instructor.

How to Make and Use Plaster Molds.

THOMAS BALCOMB.

In the March number of the INSTRUCTOR I see George H. Colvin wishes to know something about foundation molds. Believing there are many that would use molded foundation if they knew how to make and use the mold, I herewith give the *modus operandi* for making and using those made of plaster of Paris. Having had great success in making and using these plaster molds, and preferring the foundation to that made on the machines, I think many will be able to make their own foundation at a little cost by carefully following these instructions.

MAKING THE FRAMES.

First make the frames to hold the plaster plates whatever size you want your sheets of foundation to be, making the frames one-fourth of an inch larger all around than the sheet of foundation you wish to make. That is, if you want a sheet of foundation to be twelve inches square, then make a pair of frames of pieces 1x2 inches, and long enough to make the frames 12½ inches square each way in the clear, or inside, when put together. Hard wood is the best material out of which to make them, but white pine will do. Before putting the pieces together cut a wide groove on the inside edge of each piece, for the purpose of holding the plates firmly in place when made. On one side of each frame temporarily tack some one-half inch strips flush with the inside edge of each frame, as the

plates when made should project that much above each frame. Then hinge the frames together, strips inside, with "detachable butt" hinges; they are now ready to receive the molds.

HOW THE MOLDS ARE MADE.

First soak your frames over night, or they will swell in using and break the plates. Procure your sheet of foundation, that with high side walls being the best. Lay it between two boards over night, so that it may be perfectly flat. Take out the pins from your hinges, and lay one frame, strips down, over the foundation, which of course you already have on a nice flat board. Now mix (with your hand) to the consistency of thin mortar, one-half gallon of the best plaster of Paris and the requisite quantity of water. Pour it carefully on the center of your sheet of foundation with one hand, and work it over the whole sheet with the other. Be quick, for it will soon set. Let it stand then about 12 hours, when carefully turn it over, letting the sheet of foundation remain. Adjust the other frame over this, and repeat the operation for making the second plate. Let it stand all night to cool, open and carefully remove the sheet of foundation, pry off the strips and trim down the edges to a bevel, and your molds are done.

TANKS AND FOUNTAIN.

Now you want the wax and hot water pans or tanks; also the "fountain" for distributing the wax over the plates, all of which must be of a size to correspond with the molds you are making. To illustrate: If your molds are for 12-inch sheets, then your fountain must be 13 inches long, the wax tank 14 inches long. 10 wide and 4 deep, and the water tank 16 inches long, 12 wide and 5 deep, with three 1-inch pieces soldered into the bottom for the wax tank to rest on. Larger tanks will do, but not a larger fountain. To make the fountain, get a piece of tin 13 inches long and 7 inches wide, and mark it off lengthwise into four divisions —three of two inches in width each, and the fourth one inch. Now fold it up at the markings as if you were going to make it into a square tube, only one-half of the side would be open. We will call the side that is open the top. But before bending it into shape, punch two rows of holes close together, $\frac{1}{8}$ inch each in diameter, just under the one-inch mark and parallel to it, so that when folded up the holes will range along the upper edge of one side of the tube or fountain. Fix pieces in the ends and solder two cup handles on the sides opposite the holes, and your fountain is complete. A wooden dipping tank will also be needed, but you will soon find out what shape you best need after having used a large sized washing tub for awhile.

HOW THE MOLDS ARE USED.

Soak them over night, and have your tub or tank nearly full of water, heated to a temperature of about 95°. If using a tub, have it raised conveniently high from the floor, with two sticks across the top for the molds to lay on. Be particular to have the sticks lay level, or else the wax will not be distributed evenly over the molds. Melt your wax in a separate tank and supply the wax tank as needed. Do not heat the wax too hot, or else it will stick to the molds and break. It will require two persons to work to advantage—one to pour on the wax, the other to close the molds and dip. In using the fountain half fill it with the melted wax and steady it for a few seconds on the side of the frames; then, with one quick motion cover the whole plate with wax, close quickly, and dip. See that you leave no water in the side walls of your molds, as you will get some in your foundation if you do.

From 5 to 7 feet to the pound can be made by these molds, at a very trifling cost, and it is needless to state that it is more readily accepted by the bees than machine made foundation. I hope that others, after using them, will appreciate plaster molds as much as I do.

Luling, Texas, April 10, 1882.

For the Bee-Keepers' Instructor.

Queens.

L. C. ROOT.

A noted horseman of the past has said, "poor foot, no horse." So may we say of bees, "poor queen, no colony." I think that all who have had experience will agree upon this point.

That we want the very best queens that can be reared will not be disputed; but many writers of the present day are proving that they do not understand the requirements for rearing such queens. I shall take strong grounds against the practice of rearing what are known as "dollar queens," not that I object to any person rearing No. 1 queens for $1.00, but because I do not believe they can do so, and keep their stock up to the proper standard.

Keeping bees for profit is our main

business, and I am arguing this question with the same interest that every bee-keeper has, who wants such bees as will gather most honey, winter best, and in fact are *best* for all purposes I can not here give my views as to the best methods of rearing queens, for lack of space, but will only say that the best methods must be continually followed up, which means more money, time, and care, than the sale of dollar queens will warrant. Let me give some parallel illustrations:

We recently secured some oats of superior quality of one of the best farmers of our county. They were really fine, and much over weight. We examined them closely and found they contained a quantity of mustard seed, and a portion of inferior oats. We sifted them, and from the ten bushels saved about six bushels of the best. Again: Becoming interested in high-class poultry, we purchased the very best fowls we could secure, yet we find we can only hold them up to their present standard by selecting the very best birds each season.

Now, my point is, that even when we buy the very best queens we can without regard to price, this sifting process is necessary. I should not be quite so positive in this matter had I not tested it for myself, and know whereof I speak. When G. M. Doolittle proved the value of his strain of Italians by securing his large yield of honey, we should have felt ourselves to be short-sighted had we not at once procured the best queen he would sell, without regard to price. So, when P. H. Elwood obtained 586 lbs. of honey from one hive, it was proof that he had stock which we wanted. And so with W. J. Davis, Dadant & Son, Julius Hoffman, and many others. We consider the introduction of such improved stock indispensable, and yet, the sifting process must be continued. We must not for a moment entertain the thought that we have yet reached the desired degree of perfection, for we are a long, *long* way from it.

The substantial question to be asked is, how is this standard to be reached? Will the policy of rearing dollar queens tend in this direction? I am persuaded that it will not, no more than I think that the ruinously low prices for many of our apiarian supplies—such as comb foundation, etc.—are tending to purity and superiority in their line.

Thomas G. Newman strikes solid blows at this cheap queen traffic in his journal of March 8, page 125, when he says: "What the bee-keepers of America want is better stock, not cheaper queens; more honey, not lighter yields; longer-lived bees, not greater disaster; certain profits, not doubtful results." Will dollar queens lead to this end?

The April No. of the *California Apiculturist* contains an article from the pen of Mr. Gallup. This is from a man of experience, and is of particular value to those living in warm climates. He says: "The genuine Italians are no humbug; neither can the moth miller humbug them." His point made is, do not breed for color unless with the light color you gain the extra qualities needed.

I am not urging these views especially to influence the experienced bee-keepers of the present time. They are capable of judging for themselves. But the mass of bee-keepers who purchase Italian queens are such as have had no experience with them, and they are looking to our journals for information in regard to the best and cheapest methods of securing them. Are they to be led to believe that they may purchase queens for $1.00 each, expecting to begin under the most favorable conditions?

After an experience of thirteen years, during the first five years of which I had the benefit of one of the longest and ripest experiences in America, I say emphatically that I consider the cheap queen traffic a hindrance to the best interests of profitable bee-keeping.

Mohawk, N. Y., April 24, 1882.

For the Bee-Keepers' Instructor.

Sowing For Honey. No. 2.

E. A. THOMAS.

I now arrive at a point that is of vital importance to the apiarist, namely, the cultivation of such plants as will supply the bees with pasturage after the natural honey season has closed. I will endeavor to show that this has much to do with the successful wintering of bees, and in paving the way for successes the next year.

In the first place, I will notice the effects of poor pasturage during the last of July, August, and the first of September, or until the goldenrods bloom. The bees, as soon as the honey flow ceases, commence killing off their drones, and in case of sudden transition from abundance to scarcity, many times destroy the worker brood. The bees seem to become discouraged, brood rearing goes on slowly, gradually diminishes, and finally ceases very early in the fall. The result is, they do not rear enough young bees to

make the colony strong and vigorous for winter, and they go into winter quarters but poorly prepared to withstand severe cold or long confinement. Consequently they are the first to succumb to a long, cold winter, being unable to bear what a colony of young, vigorous bees, would pass through with impunity. Unless they are constitutionally strong, and of a remarkably good strain, they will come out of their winter quarters in poor condition to build up in time for the approaching harvest, and they do not therefore give as satisfactory results as they would were they in good trim, and strong. Now, what is the remedy for all this? Simply to furnish the bees with sufficient pasturage to keep brood rearing going on briskly until late in the fall, and after all flowers have gone out of bloom to continue to stimulate by slow feeding. The result is plenty of young, vfgorous bees to go into winter quarters, which, if of a strong, hardy race, will withstand almost any winter, and will be found in the spring all ready for business.

Some may say, "it dont pay;" "it is too much trouble;" or, "I can't bother with sowing seed; I have something else to do." I will ask these doubting ones if they do not think it pays to have strong stocks in spring ready to take advantage of the natural bloom early in the season? If it does (and who can question it?), then any method or labor that will tend to strengthen our bees will serve to enhance the value of the apiary. There is no question but that large crops of honey can be secured in some localities, by keeping up the ambition and energy of the bees by providing pasturage for them during the interval between the early harvest and fall bloom. The reader who has followed me closely will now understand that sowing for honey, or bee pasturage, has both a direct and indirect influence on the honey crop.

1. A direct influence by augmenting the honey flow in a good season, and guarding against the failure of one or more, or all of the natural sources; by providing against possible starvation, resulting from an entire failure of all natural bloom, and by carrying the bees safely through until the wild fall flowers open.

2. An indirect influence by inciting the bees to late breeding, after the main honey crop has been harvested, thus getting them in shape for the next season's work.

Looking at the subject in every light possible, I can arrive at but one conclusion, and that is that it pays to plant for bee pasturage, both for those who own land and all others who can furnish seed to the farmers in their vicinity.

It is not my object to give a description of the various honey plants, and I will only say that in selecting seed to plant, particular attention should be paid to the time the plant blooms, and the kind selected that will fill up all intervals of bloom in your locality. If you wish to sow largely for honey, then cultivate the clovers—white, alsike and melilot—mignonnette, raspberries, basswood and buckwheat. I have found these to be the most valuable and profitable, all things taken into consideration. For directions for planting and cultivating, the manuals should be consulted, or, if none are at hand, those who deal in the seeds can give all necessary information.

Coleraine, Mass., April 19, 1882.

For the Bee-Keepers' Instructor.

Bees in Tennessee.

D. KEPLER.

Bees are doing very well here now. The strongest colonies are building cells and rearing queens, preparatory to swarming. At Chattanooga, 30 miles further south and 500 feet lower elevation, bees have been swarming for the last two weeks.

The successful wintering of fair sized colonies in any good hive, the past winter, seemed to depend more on the am't of stores they were supplied with than any thing else. I found 40 pounds none too much to carry full colonies through the winter and give good strong colonies at the beginning of the spring harvest. Colonies with a less amount of stores came through the winter and started brood rearing all right, but starved the latter part of March, during cool, rainy weather, while peach and plum trees were in bloom.

HONEY RESOURCES.

To-day my bees are working on Tupelo, or black gum, and dewberries, while the woods are fragrant with the sweet scent of honeysuckles, and a profusion of flowering shrubs I never saw before. In about two weeks the Tulip, or poplar tree, will bloom, followed by white clover; and by May 15th the persimmon, said to be rich in nectar, will bloom, and last until the sourwood, producing the finest honey gathered in this part of the country, will stimulate the bees to renewed industry. The chestnut is said to fur-

nish some honey and abundant pollen, while honey dew is looked for with as much interest as almost any other source of honey from which profit is derived in bee-keeping.

Asters, the great autumn honey plant, are abundant in every valley in East Tennessee, yielding their nectar during all of September and the first half of October. The honey of this plant is used principally in wintering and springing bees. Any fair colony will fill two stories of an L. hive during its bloom, and with the judicious use of the extractor I think this plant might be made to yield a fair surplus.

Coulterville, Tenn., April 17, 1882.

Letter Drawer.

Smoker Claims.

Thanking you for the space so kindly granted, I will pledge you not to use but little.

No one can regret more than your correspondent the ill feeling which has grown out of my improvement of the smoker. One would almost believe that bee-keepers had best go on with poor tools and have peace, than to have good ones and such ill feeling. But when we bear in mind that no practical bee-keeper has ever found fault with the Bingham smoker patent; that only those who wish to make Bingham smokers to sell are troubled, the question assumes a new aspect.

In answer to your question as to "what I claim as my invention in smokers," I will say that I claim to have been the first to supply air for draft to the stove without said air first passing through the valves of the bellows. This was a very simple thing, but it was enough to make a bellows bee smoker a reliable implement in managing bees. Out of this change a new construction of parts was made possible. I made it, and a bellows smoker became a practical reality, which no one but your correspondent has been able to improve, though many have tried and tried in vain.

In answer to your expressed opinion of my faith in my smoker patent, allow me to say that Bingham was the original inventor and first patentee of tight end comb frames held together by elastic clamps, and covered by a loose outer case having a movable lid for the purpose of packing with chaff and covering surplus boxes, etc. Further, that he has taken out six different patents pertaining to bees during the past 18 years, and expects to take out more, and does not willingly admit that he is not a judge of the validity of a patent. T. F. Bingham.

Abronia, Mich., April 10, 1882.

Well, we only judged of your opinion of the validity of your patent by your actions, Friend B., as we said in our former article. If your patent is valid, the question with us is, why don't you enforce it?

Well Liked.

The Instructor is liked very much by the bee men here, because—

1. The rates of advertising are among the most liberal, and neither its editor or his sons are interested in manufacturing or selling supplies, thereby not coming in competition with their advertisers.
2. Its mechanical make-up is excellent.
3. For its able corps of contributors, among whom may be found many of the most practical bee raisers and honey producers in the land. Subscriber.

Hamilton Co., Tenn., April 24, 1882.

California Prospects.

From present indications I do not think that the honey crop in Los Angeles county will be very heavy for 1882; but it is difficult to tell with much certainty at this date. Bees usually swarm here by the 25th of March, when they swarm at all, but this season no swarms have issued yet. There was also none at all last season. W. W. Bliss.

Los Angeles, Cal., April 22, 1882.

To Mr. Demaree.

Please say to Mr. Demaree through your columns that I can see no further use of arguing with one so subtle that I can not understand his arguments; one who argues both sides of the question and volunteers to decide the case into the bargain. James Heddon.

Dowagiac, Mich., May 1, 1882.

Bees in Alabama.

Bees are swarming and bringing in honey very fast. We have been extracting some this spring. Have been delayed some in filling orders for queens on account of cold, windy weather. The young queens could not fly out to mate with the drones. T. S. Hall.

Kirby's Creek, Ala., April 21, 1882.

Editor's Corner.

Dollar Queens.

This is a very much discussed subject at present. Many breeders, and writers who are not breeders, seem to be bending every energy to prove that dollar queens have been an unmitigated evil to bee-keepers, while others as strenuously assert, and try to prove, that on the contrary they have only been an unadulterated blessing. Both sides have—at least such is our opinion—failed to fully maintain their point, because of trying to prove too much. It should always be remembered by those who take part in a discussion that every question has two sides. If this point was duly remembered, there would not be quite so many strong statements made, which facts do not fully seem to warrant.

In this issue will be found an article on queens from L. C. Root, which he winds up by saying, " * * * I consider the cheap queen traffic a hinderance to the best interests of profitable bee-keeping." We have read the article with much pleasure, as we always do anything from the pen of an experienced bee-keeper like Friend Root, and in the main think it correct; but his position we consider a little too extreme, especially that taken in the last sentence. At present the Italian bee is diffused throughout every state and territory in the Union, from Maine to California. Has this been done through the agency of tested queens, sold at from $3.00 to $5.00 each? or thro' the agency of dollar queens? We think that it will be universally admitted that dollar queens have been the *principal* agents in bringing about this result. Hundreds—yes, we might truthfully say thousands—of bee-keepers who would not have entertained the idea of investing from three to five dollars per colony in the purchase of tested queens, have, by means of dollar queens, transformed their irascible blacks into peaceable and industrious Italians; and although they *might* have had better Italians by buying tested queens, we think nearly every one will agree with us that the progeny of these dollar queens has been a vast improvement over the native bees.

Another phase of the question is that dollar queens can not be reared at a profit; or rather, it is claimed by some that queens fit to breed from can not be reared and sold for that price at a profit. This is somewhat owing to circumstances. Some persons can rear good queens at this price, and make money at it, while others can not cover expenses. Natural adaptation to and taste for the business, together with economy in the use of ways and means, make all the difference in the world in any business—rearing dollar queens included. At any rate, if tested queens could be reared and sold for $2.00 each, as Mr. Alley has been proposing, good untested queens could certainly be sold for $1.00 each, or even less.

We do not desire to be understood as being a particular advocate of dollar queens. In some respects they have been inimical to the best interests of bee-keepers; but the results of their sale have not been altogether bad. They have played an important part in the dissemination of Italian blood, and should not be so unreservedly condemned.

The Conqueror.—We acknowledge the receipt of a new smoker from Bingham & Hetherington, Abronia, Mich., bearing this very suggestive name. This new size has been made to supply the demand for a larger smoker than those commonly used, the stove or fire pot being three inches in diameter and seven inches long, with a chimney and bellows to correspond. Although so large, it is light and easily handled, and from all appearances fully deserves its title. One important improvement now applied to this and the other sizes of the Bingham smokers is the placing of a wire-cloth screen over the hole that admits the air from the bellows to the fire tube, thus preventing sparks from falling into and burning the bellows.

Light and Dark Italians.

Since the first introduction of Italian bees into this country, and up to within a few years past, the standard of quality has been judged almost entirely by their color. Large, light-colored queens, producing the same kind of workers, have occupied the highest place in the estimation of most bee-keepers, while the darker colored ones have had to take a "back seat." But popular opinion is liable to change, and any one who has been reading the bee journals during the past few years can not fail to see the reaction that has been taking place in favor of the dark, or leather-colored, Italians. In conversation with an extensive bee-keeper of this vicinity a short time since, he spoke of the difference between light and dark Italians, saying he much preferred the latter, and as an illustration said he had one colony of the dark Italians that had made him over $200 during the past three years. He has had as high as 500 colonies of bees at times, and therefore had an extensive experience; and as he raises no queens for sale, except a few for local trade, he speaks from no interested motives.

Mr. Daniel Kepler, an extensive bee-keeper formerly of Napoleon, Ohio, but now at Coulterville, Tenn., is another advocate of the dark Italians. As Mr. Kepler has not been in the habit of rushing into print and telling all he knows, and a little additional, about the business of bee-keeping, he is not as widely known as many smaller bee-keepers. But he has probably had as much experience with Italian bees, with a few exceptions, as any one in the United States, having had many queens of his own and others importation in his yard, and after a fair trial of the different strains he pronounces unhesitatingly in favor of the dark Italians for the *business* qualities which bees should possess.

We might name many more champions of the dark Italians, including Elisha Gallup, James Heddon, W. Z. Hutchinson and other well-known bee-keepers, but it is hardly necessary to do so. That such a reaction as we have observed is and has been taking place, even a casual reader of the journals can not have failed to notice.

Now, we do not wish to be misunderstood on this question. We do not claim that the dark Italians are best simply because they *are* dark. Although there is undoubtedly a natural difference in many respects in the two strains, we think the difference is caused principally from the majority of bee-keepers having bred almost exclusively for color, without paying enough attention to other points equally or more important, such as vigor, prolificness, honey-gathering qualities, etc. If the color is not gained at the expense of these qualities, well and good. But we fear that in too many instances it is. When breeders begin to realize that color of itself amounts to nothing; that queens may be as yellow as a gold piece and still be worth nothing as producers of business bees, then, and not till then, we may expect to see a general improvement in the race.

Pressed and Molded Foundation.—The samples of Foundation that Friend Heddon speaks in his article in this issue of having sent us, were duly received, and certainly speak well for the press on which they were manufactured. The specimen of thin foundation is especially fine, the base of the cells being so exceedingly thin as to be almost transparent. We do not know that we ever saw a finer specimen of foundation. The sides of the walls are quite thick, but as the wax is left so soft when the foundation is made on a press, this is only an advantage.

Mr. Balcomb also sent us a couple of specimens of molded foundation, which are very nice considering the quality of wax out of which they are made. The side walls are nearly as perfectly formed as those of machine-made foundation, and it would run we judge about four or five square feet to the pound. With a better quality of wax we suppose he could do much better.

Current Publications, Etc.

Wood engraving has been carried to a perfection in the *Century Magazine* (formerly *Scribner's Monthly*) and *St. Nicholas*, attained by no other periodicals of their class anywhere. We know this is saying a great deal, but an examination of the May issues of the magazines named will convince any one of the truth of the assertion. They are perfect marvels of the engraver's art, the illustrations fairly rivaling the best steel engravings in beauty of color and execution. Special efforts seem to have been made with *St. Nicholas*, it containing no less than eleven exquisite full-page engravings, besides a large number of smaller ones. In the *Century Magazine* the series of elegantly illustrated articles on "Opera in New York," by Richard Grant White, are continued, as is also the charming story, "Through One Administration," by Mrs. Frances Hodgson Burnett; while the shorter sketches, poems, etc., are too numerous to mention. The Century Co., Publishers, Union Square, New York.

The *Western Ploughman* is the name of a new farmers' monthly published at Moline, Ill., several copies of which we have received. It contains sixteen large quarto pages, is beautifully printed from clear, open-faced type, and very neat and attractive in its entire make-up. The contents are excellent.

One of our most valued southern exchanges is the *Southern Cultivator and Dixie Farmer*, published by James P. Harrison & Co., Atlanta, Ga. It is a large, well-filled publication, containing articles on subjects of special interest to southern farmers, and may be said to be the representative agricultural publication of the South. Each number is handsomely illustrated.

"Hints for Painters" is the title of a neat little book of some sixty pages, published by the Industrial Publishing Co., 14 Dey-st., N. Y. It contains complete instructions for painting, paper-hanging, varnishing, etc., and will be found a very useful assistant in such matters. Price, 25 cents.

We are glad to notice that the *California Apiculturist* is still improving. Since the issue of the first two numbers it has been printed on tinted book paper, which adds much to its appearance, besides being improved in various other ways.

We have received circulars and price lists since our last issue as follows: Henry Alley, Wenham, Mass., 4-page circular of bees and queens; L. C. McFatridge, Carroll, Ind., postal card price list of bees, queens and supplies; F. L. Wright, Plainfield, Mich., 2-page price list of grape-vines and small fruits; G. J. Pammel, La Crosse, Wis., 4-page circular of the usual supplies.

Backward Spring.—Although spring opened up very promisingly, and every indication pointed to an abundant flow of early honey, with the exception of a few weeks of fine weather during the latter part of March and the first week or two in April, this has been one of the coldest and most backward springs we have ever experienced, even in latitudes much farther north. Cold, chilly north and west winds have prevailed generally to a great extent, and in some of the northern states they have even had snow storms during the forepart of this month. As a consequence bees have not gathered more than enough honey to keep up breeding, and some colonies that were rather scant of stores early in the spring, and started breeding rapidly during the few weeks of fine weather, had to be fed to keep them from starving. The weather is beginning to feel spring-like once more, however, and we hope that the "blizzard" is over, and that we will now have some good honey weather.

Copy for changes in advertisements must be sent us by the first of the month, or we can not guarantee a change. It often happens that we can make changes in them a week or more later than that, but we can not guarantee to do so.

Bees' Tongue Register.

The following cut illustrates an instrument for measuring the length of bees' tongues, invented by John H. Martin, of Hartford, N. Y. Not having tested it ourself, we can not speak of it from personal experience, but from the illustration and Friend Martin's description, which will be found below, have no doubt but that it will answer the purpose admirably for which it is intended. The price of the instrument is $2.00:

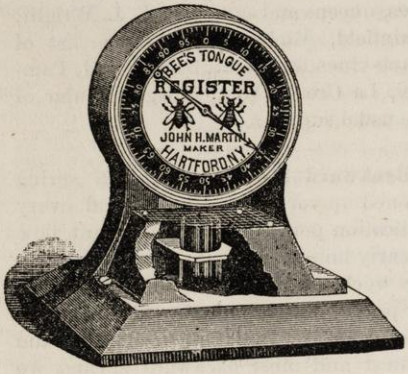


ILLUSTRATION OF REGISTER.

A glass feeding tube will be found by turning the cover upon which the wire cloth is attached. Fill the tube level full of diluted honey or syrup, return the cover carefully to its place, smear a little honey on the wire cloth and down along the base of the instrument. Set it level in the hive, and give the bees access to it until they remove all of the honey they can reach. Then remove and set it upon a level surface and uncover the tube. Now turn the thumb-screw in the center of the back of the instrument until the ring that encircles the tube is on a line with the extreme upper surface of the honey. The pointer will now record the length of tongue upon the dial in 100th parts of an inch, and even higher, if you read the record between the lines. When not in use it is a good plan to keep it in the box in which it is mailed. The test occupies but a few minutes of time.

This register is worked internally by an eccentric, and can not possibly get out of order, or make mistakes.

One, two, and three-cent stamps accepted as cash on subscriptions.

Monopolies.—One of the great questions before the people of the United States to-day (we might say *the* great question, as we know of no other that will compare with it in importance,) is whether corporations—grasping monopolies—shall rule the people, or the people, as is meet and proper, rule the corporations. The rapid accumulation of vast wealth in the hands of an unscrupulous few (unscrupulous because a fortune of fifty or a hundred millions can not be obtained honestly by any person in the course of an ordinary life time, and if obtained dishonestly its possessor is naturally unscrupulous,) is one of the most alarming symptoms of the age, and unless this rapid centralization of capital is checked, it will prove disastrous to the welfare of the country. The National Anti-Monopoly League, of New York, has been and is doing a good work in arousing the people to a sense of their danger, and one of the not least important steps taken by it was the recent call for a State Anti-Monopoly Conference, which in accordance with the invitations sent out was held on the 29th of last month at Albany, N. Y. The meeting was a large and enthusiastic one, over 400 delegates, from local leagues in various parts of the State, and invited guests being present. We would much like to give a brief report of the proceedings, as it would prove interesting reading to every thoughtful person, but limited space forbids. The *National Journal* of May 6, published at 252 Broadway, N. Y., gives a full report of the meeting, and we would advise every one of our readers to send for a copy of that issue, and copies of the anti-monopoly documents issued by the League, or better still, send $1.00 for a year's subscription to the *Journal*.

On a postal card received from Friend L. C. Root a day or two before going to press, he states that out of 160 colonies of bees placed in the cellar last fall, they had taken out 158 that were all right. A full report is promised for next month.

New Association.—As per previous announcement through the INSTRUCTOR and other bee journals, the bee-keepers of Maryland, Virginia and West Virginia met at Hagerstown, Md., April 20, for the purpose of forming a bee-keepers' association. A temporary organization being effected, a committee was appointed to select a name for the association. After due consultation they reported the "Union Bee-Keepers' Association of Maryland, Virginia and West Virginia," as the name decided upon, which was adopted. A permanent organization was then effected by electing as President D. A. Pike, Smithsburg. Md.; Secretary, J. L. Bowers, Berryville, Va.; Treasurer, A. Burton, Harper's Ferry, W. Va.

After the discussion of various subjects connected with the apiary, the convention adjourned, to meet at a date to be fixed by the President, some time during the coming fall.

Fertile Workers.—The *American Bee-Keeper* gets off the following in its April issue on this subject:

"Fertile workers we believe to be a myth, as we have been keeping bees all our life and have never seen such a thing as a fertile worker."

From the above it would seem that the editor of the *Bee-Keeper* doesn't believe in anything except what he sees. Following out this course of reasoning, as he has never seen his brains he would be compelled to confess that he has none. This may not be very reasonable, but nevertheless it is logical. Now, we *know* there is such a thing as a fertile worker, because we have seen more than one of them. Mr. Harrison *believes* there is no such a thing, because he has never seen one. That is the difference.

Sums of over $1.00 should be sent us by registered letter, and *not* by post-office money order, as Somerset is not a money order office. Amounts of $1.00 or less are generally safe if sent securely sealed in a plain envelope, although when sent thus it is at sender's risk.

Extractors.—In the May number of the *California Apiculturist* its editor makes the statement, in speaking of the relative merits of the different makes of extractors, that "Root's and Muth's have the same style of gearing." This is incorrect. Root's extractor is made with horizontal gearing, while Muth's has the strong, upright gearing, like the Excelsior and King extractors. In no respect does Root's and Muth's extractors resemble each other.

Mr. R. L. Shoemaker, of Newcomerstown, Ohio, while working in his apiarian supply establishment, was badly injured by a block of wood thrown from a rip saw, destroying one of his eyes and otherwise injuring him. Mr. Shoemaker is a hard-working, industrious young man, and we regret very much to hear of the sad accident that has befallen him.

The cut of the Given press was so very badly battered up when we received it that it was impossible to make it print well, despite all the "underlaying" and "overlaying" that could be done. However, we suppose our readers can get a very good idea of the general form and working of the press from the illustration.

Honey and Beeswax Markets.

REPORTED FOR THE INSTRUCTOR.

Chicago, May 8.
Honey—The comb honey market is lifeless.
Beeswax—In good demand at 24c. to 25c. for choice yellow; dark, 18c. R. A. BURNETT.

Cincinnati, May 9.
Honey—No demand for nor offerings of comb honey. There is a slow retail demand for extracted honey. The demand for manufacturing purposes is good. It brings 7 to 10c. on arrival.
Beeswax—20c. to 25c. on arrival.
CHAS. F. MUTH.

Boston, May 8.
Honey—Comb, 18c.
Beeswax—25c. to 35c. CROCKER & BLAKE.

Cleveland, May 8.
Honey—There is scarcely anything to report. There is no stock of white. Occasionally a small lot is sent in, which sells at 20 to 22c. Buckwheat is unsalable. No extracted in market.
Beeswax—25c. to 30c. A. C. KENDEL.

St. Louis, May 8.
Honey—In good demand at 8 to 10c. for strained. Comb very scarce with very little offering. Worth, nominally, 20c. to 22c.
Beeswax—Very scarce. Selling at 22c. to 23c.

from first hands. Orders are accumulating from New York Ohio, Nebraska, and other points heretofore not known to have drawn wax from here.

R. C. GREER & Co.

New York, May 9.

Honey—We have no fancy white comb in this market. We quote: Fair grades of white in 2 lb. sections, 14 to 16c.; mixed and dark grades in 2 lb. sections, 11 to 13c.

Large sections 2c. per lb less than above prices.

Best white extracted in firkins, 9 to 10c.; fair white extracted in firkins, 8c. to 9c.; dark extracted in firkins, 7 to 8c.

Beeswax—Prime quality, 26c. to 27c.

H. K. & F. B. THURBER & Co.

Clubbing List.

The INSTRUCTOR and any of the following bee journals will be sent to one address, one year, at rates given in right hand column below. The figures on the left give the regular subscription price of each:

Instructor with American Bee Journal	$2 00	$2 30
" " Gleanings in Bee Cult'e	1 00	1 40
" " Bee-Keepers' Magazine	1 00	1 25
" " Bee-Keepers' Exchange	1 00	1 30
" " Bee-Keepers' Guide	50	80
" " Kansas Bee Keeper	60	90
" " N. E. Bee Journal	60	1.00

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