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Adelphi, Ohio: Border News Book and Job Printing House, March, 1880

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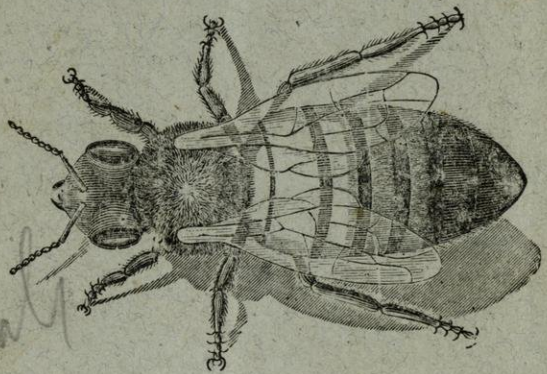
VOL. II. MARCH, 1880, No. 3.

THE BEE-KEEPERS' INSTRUCTOR.



S. D. RIEGEL, Editor.

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HEAD-QUARTERS

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SOUTHERN HEAD-QUARTERS

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THE

Bee-Keepers' Instructor.

VOL. II. MARCH, 1880. No. 3.

For the BEE-KEEPERS' INSTRUCTOR.

Large or Small Hives.

J. KLINGER.

I see in your February number an article from the Country Gentleman on the size of hives. So much depends on what we mean to do with our hives, that it is a little hard to decide as to their size. It is true that to be successful in securing box honey, we do not want a larger brood-chamber than the queen can fill with brood. During the best honey season (that is, I mean when the bees gather the best honey) we get our surplus boxes filled with the very best article of honey, which commands an extra price. But when we shall succeed in protecting ourselves against adulterations, extracted honey, I think, will be more in demand than comb. We base our belief on the following considerations:

1st. Extracted honey is much more healthy than comb, there being nothing in it but the pure nectar from the flowers; while in the consumption of comb honey, a large amount of wax is taken into the stomach, that is as indigestible as the same amount of leather; and many persons dare not eat it at all.

2d. It is decided that we can, under similar circumstances, produce at least double the quantity of extracted honey than of comb.

3d. There is much less expense in packing extracted honey, it being one of the most difficult things to pack comb honey so that it will carry safely. Even at home we can hardly pack it away so as to preserve it from the little red ants; but any jug, bottle, keg or fruit can, will answer for extracted honey for home consumption.

In view of the foregoing, the hive may be larger for extracting, as we want a hive large enough to hold all the combs the bees can fill with honey; and to succeed best, they should not be allowed to swarm. This is not so very difficult to accomplish, if we cut out the queen cells every time we extract, and when we do not cut out the queen cells, if we keep the honey well extracted to give plenty of working room, there is but little danger of swarming. I prefer a hive three feet long, fourteen inches wide and twelve inches deep; this will give over four thousand cubic inches of space for frames, and over three thousand square inches of comb; now, admitting that a good queen will occupy about 900 square inches with brood, there remains over 1,800 square inches of comb to be filled with honey and pollen.—During the honey season of 1878, Dr. Hurst, of Williamsport, used this kind of hive, and took 313 pounds of honey from a single hive. Finding at one time that his bees could occupy even more combs, he removed the queen until all the brood was hatched, when the combs were filled with honey. After extracting, the queen was returned to resume brood-rearing.—So if you are making hives and mean to extract your honey, make your hives large.

Stoutsville, Ohio.

In order that ALL may fully understand Friend Klinger as to "large or small hives," we think a little additional explanation is necessary.

The hive which he uses, and on which he bases his arguments, is

constructed with but one chamber, which is to be occupied with both brood and surplus. The space to be occupied by either, is adjusted by means of movable division boards, and all surplus honey, whether comb or extracted, must be produced at one, or at both sides of the brood nest. In view of this fact it becomes necessary to make this chamber very large. But hives that are constructed with two chambers, one for brood rearing and the other for surplus honey (such as are generally used), do not require more room in the brood chamber than is necessary for a good colony of bees, with sufficient stores to take them through the winter. This will, of course, vary according to climate, the MEAN of which will not be very far from 1,800 cubic inches. The surplus chamber, whether for extracting or for comb honey, should be sufficiently large to give all the working bees of a populous colony—that are not otherwise employed—room for storing surplus honey.

Now, it will be seen that Friend Klinger's idea of a "large hive for extracting," does not mean a LARGE brood-chamber, as such, but LARGE when it must contain sufficient room for both BROOD and surplus honey. That is what you mean, is it not, Friend Klinger?

For the INSTRUCTOR.]

How are Bees Wintering?

JESSE MILLER.

Not well, with many bee-keepers here in Eastern Ohio, where we had a long-continued season of very fine fall weather, following a poor honey season, or a *short* and *poor honey crop*; then a long time of *honey eating* for the bees before the cold weather came.

Thus, with many colonies, the stores were nearly, or quite, eaten up when the first *cold wave* of winter struck us. For a few days preceding the cold it was showery, damp and disagreeable.

Many bee-keepers, in consequence of the beautiful weather of late fall, had put off preparing their bees for the winter. Some fed a little, but more left their bees to provide for themselves.

Thus with little or no food; with no protection for winter; with the thermometer going from forty above, to four to eight (varying with location) degrees below zero within 36 hours, is it any wonder that many colonies should die, as they have?

So far this winter our cold weather has been nearly all in December, '79. January was very pleasant, but little freezing, and several days were so warm that bees were out in great numbers, and in a few cases heard of were robbing. An unusual amount of stores have been consumed, especially where bees are on their summer stands. Much of it was consumed prior to January 1st, 1880.

Old bee-keepers tell me that their bees have eaten more honey, and required more feeding so far this winter, than for many years before. Now, bees are receiving more care than in the fall and early winter. What the result will be, depends greatly upon the spring. Men of experience have been disappointed. Colonies that they thought had enough to keep them, must be fed.

With care, many colonies may be saved, but it must be prompt and continued. Experience should teach lessons to be heeded, but too many fail to profit by it.

Alliance, O., February 14, 1880.

We are sorry to hear that bees have not been wintering well, and are generally SHORT of supplies in your section. Reports from other

sections are almost universally the reverse of yours. You don't want us to understand from your report of the "old bee-keepers" that bees have consumed more honey this winter than usual, in consequence of the warm weather, do you?

Bees in India.

A correspondent gives, in the London *Agriculture Gazette*, an interesting account of bee culture in India. He writes: Some of the villages make the keeping of bees their chief business, and although their method would hardly answer with Englishmen or English bees, it is at any rate curious, and it is certainly very successful and exceedingly profitable. The houses are built of a framework of wood, which it would not be easy to describe without a sketch, but which leaves everywhere in the walls, both in their whole length and height, open spaces, about two feet high and ten or twelve feet long, which are subsequently filled with stones and clay, after which the whole is plastered inside and out with a preparation of gypsum, which is found in abundance in the hills. The roofs are flat, of beaten clay, and the eaves project about three feet beyond the walls, As the whole weight of the roof rests entirely on the wooden framework, the stones and clay, with which any one of the spaces is filled, can at any time be removed and replaced without at all infering with the stability.

In each of the spaces, particularly in the walls facing the south, is placed one or more round earthenware waterpots the height of which ought to be equal exactly to the thickness of the wall; these are built into the wall laying on either side, with the round bottom outside, and the extreme convexity flush with the outside of the wall; whilst the mouth of the vessel, which is 6 or 8 inches in diameter, is flush with the wall in the inside of a room; in some houses there is as many as forty of these waterpots thus imbedded. All that is now wanted is to make a small hole on the outside convex bottom of each waterpot for the bees to enter—stick on a small patch of clay below it for them to alight on—put in a swarm and close the mouth of the pot with an earthenware lid made to fit.—When honey is to be removed, all that is required is for the operator to enter the house, close the door, tap on the lid of the pot to drive out the bees, or, if that is not sufficient, open the lid a little and blow in two or three puffs of smoke from a lighted rag, then open the lid fully and remove as much of the honey as may be deemed expedient, after which the mouth of the pot is reclosed, and the bees soon return and go to work again; enough of the honey always seems to be left to last the stock through the winter, and I could not ascertain that artificial feeding is ever resorted to. As the houses are occupied by the family as well as the cattle of the owners, and in winter pretty constant fires are kept up, the bees, no doubt, benefit by the heat.

Besides these hives, which are never killed off, each house generally has a large number of others, the result of swarming, which are managed in a different way. For these a hive is prepared thus: A piece of the trunk of a pine or cedar tree, of about 18 inches in diameter, is cut to a length of 2½ feet; this is split down the middle, and each half hollowed out, so that when rejoined there is considerable space inside. A hole is made in one side of the halves for the bees to enter; and a swarm having been secured, it is lodged in the hollow log, the two parts of which, having been securly tied together, are then hung up close under the projecting eaves of the house and well out of the reach of bears, which are very numerous in the district, and are very partial to honey. To get the honey from these swarms, I believe it is usual to destroy the bees; but I have heard, although I do not know exactly how it is done, that, instead of destroying all the bees, the queen is some-

times killed, and the workers added to one of the stocks in the house wall, which may have become weak.

From the American Bee Journal.

Feeding Extracted Honey to be Stored in Sections.

G. M. DOOLITTLE.

We are asked to give our views of the practibility of feeding extracted honey to produce comb honey. Quite an excitement has been caused in this direction by the experiments given in the book "Blessed Bees," as claimed to have been conducted by the author. As Mr. Allen quotes Doolittle in his notes to prove his position to some extent, perhaps a few words regarding the matter will not be amiss. We know of no better way to illustrate what we wish to say than to give our experiments, the first of which were conducted in 1876:

During 1875 we received our first foundation, sent out by John Long (Wm. M. Hoge), and as the bees accepted it readily, we thought here was a chance to make a profitable business, by extracting our honey during the flow of white honey and to feed the same back to the bees, to be stored in boxes during the period of scarcity we always have between white honey and buckwheat. By the use of foundation much could be saved by the bees in comb-building. Accordingly, after the harvest of white honey was over in 1876, we prepared three colonies that were strong in numbers, in this wise: The first was given 28 prize boxes nearly filled with foundation, and 2 boxes in the center at the top full of comb, and two-thirds full of honey.

The second was given 21 boxes from one-half to two-thirds filled for market for the bees to finish up; the 21 weighed, when put on the hive, 35 lbs. or thereabouts. The third was given 21 boxes with only starters in them, just as we have described them in the American Bee Journal during the past year. We fed each colony all they could carry, and kept a record of each one. We do not find the record just now, when wanted, but quote from memory, which is nearly if not quite correct:

Each one took 15 lbs. (the first feed) before they made any start to work in the boxes. Soon after, those having boxes two-thirds filled began lengthening the cells and storing honey, and when they were completed, ready for market, we had fed 42 lbs. of extracted honey. Upon weighing them again, we found they weighed 47½ lbs.; so we had fed 42 lbs. to make a gain of 12½ lbs. in the boxes. Thinking that perhaps they would do better on a second lot, we immediately put on 21 more, weighing about 34 lbs., and fed 39 lbs. to get them finished. Those were not filled so full, and only weighed 46 lbs. when finished. So we fed 39 lbs. to make a gain of 12 lbs. the second time. No. 1, with the foundation, were fed till we had given them 134 lbs., when we took the boxes off, having 22 finished, which weighed 49½ lbs., and 8 unfinished, weighing 13 lbs.; so we had 62½ lbs. gross weight as a return for 134, and a cost of $1.25 for foundation at the prices then asked for it.

Our experiments with colony No. 3 were never completed. After we had fed them 50 lbs., or thereabouts, they went to building comb quite nicely, but it soon seemed to become an old story, and after awhile they simply lived out of the feed-dish, and done nothing else. If we recollect aright, we obtained about 25 lbs. in the boxes, mostly unfinished, after feeding nearly 125 lbs. Twice since we have conducted similar experiments with partly-filled boxes, as in the case of No. 2, with just about the same results.

In all our feeding operations we have ascertained this fact, that bees fed in excess of what they consume in feeding the brood, become idle, simply living out of the feeder and not getting an ounce from the fields, while those not fed will

nearly get a living from the fields. If fed when honey is plenty in the fields, they will store no faster out of a feeder than others not fed will from the fields; while those storing from the fields work in the boxes with double the energy with which those do that are being fed. The experiments given above prove the fallacy of those given in "Blessed Bees."

Another thing is proven by these experiments, and that is that the great cry about a year ago of box honey made of glucose was groundless. Glucose will have to fall below the price that it now brings before it can be made profitable to feed for bees to store in boxes. That extracted honey is largely adulterated with glucose there is no doubt. The great prejudice there has been in years past against candied honey has been the main reason for this adulteration, and a greed for gain the minor one. If we, as producers, can turn the prejudice so it will be against liquid honey, or secure the passing of a law requiring the correct labeling of all articles sold, the cry of "adulteration" will soon be a thing of the past.

Borodino, N. Y., January, 1880.

Corn Glucose.

THE SECRET MANUFACTURE OF MILLIONS OF POUNDS OF SUGAR.

The extent to which the manufacture of glucose syrup from corn has reached would astonish the country if fully known. We are not prepared to give figures indicating the totality to which this business has already reached. In fact, the business is at present carried on under a kind of secrecy, the profits being immense, and the article produced being used, but not avowedly. One establishment in New York, which for years manufactured starch from corn, pursued experiments for a long time under German chemists, until at last the glucose in syrup form and free from poisonous substances was produced. Since then this New York establishment has been engaged in a constantly increasing production and trade. The figures we report may not be exact in all particulars, but are accurate enough to give a general idea of the magnitude of the business, the profit of the manufacture, and the extent to which cane sugar is being displaced by the new commodity in several cases.

If we are not mistaken, the original manufacturer of the "glucose," now an article of commerce, as a substitute for sugar, was able to produce say three gallons of pure syrup from each bushel of corn. This syrup is of good color and good saccharine power, and its liquid consistency rendered it desirable for mixing with other syrups. As compared with the imported syrups, or with syrups made wholly from sugar, its cost was insignificant, thus enabling the producer to sell it at from 50 to 75 per cent. profit, and at the same time furnish a substitute for direct sugar productions at one-half or less than their cost. This glucose is sold to the manufacturers for the following purposes:

First. It is sold, as was proven before the Congressional Investigating Committees, in immense quantities to sugar refiners.

Second. It is sold to all manufacturers of so-called syrups represented as made from pure sugar.

Third. It is sold in immense quantities to manufacturers of candy and all other forms of confectionery. Instead of buying sugar largely made from glucose, they now buy the glucose itself and make their ware direct from it.

Fourth. It is sold extensively to be mixed with California honey, it assimilating in color and other respects with that article. It is mixed in the proportion of at least one gallon of glucose to one of honey, and the combined product is now not only sold to consumers as honey, but is also exported to Europe where, on account of its cheapness as well as flavor and other qualities, it is finding a

increased market.

Fifth. It is used in the East in the manufacture of sweet wines, and it is used in all liquors requiring syrups.

In naming these purposes to which glucose is applied, we do not mean to say that it is confined to such uses; it enters into all other productions of which sugar is a constituent.

The extent to which corn is used for the manufacture is only in its infancy, as may be judged when it is known that the consumption of corn for this purpose during 1878, by the one establishment to which we have referred, was 5,000,000 of bushels. For a time the trade was confined to a few hands, but the patent process has been sold to others, and at least one large establishment is in operation at Buffalo, another in St. Louis and a third in Chicago—the latter having been put in operation quite recently. There is another at one of the river towns in Iowa, and, possibly, there may be one or two outside of New York city in the Eastern States.

This industry presents the strange phenomena of manufacturing, annually, the equivalent of many millions of pounds of sugar, involving the employment of a large capital, with machinery consuming millions of bushels of corn, and yet the whole business is carried on with as much secrecy as attends the illicit distillation of spirits. No purchaser is willing to avow that he purchases the article, and both seller and purchaser avoid publicity. The purchaser of glucose sells it to his customers under different names at ten times the original cost, and the customers are paying several hundred per cent. profit on all commodities of which sugar or sugar syrup is supposed to be the essential element.—*Chicago Tribune.*

Well! Well! What an enterprise! How encouraging (?) to the consumers of sugar syrups, honey, and other sweets. Let us look into this enterprise a little:

"It is sold in immense quantities to sugar refiners." It is sold to all manufacturers of syrups, and represented as made from pure sugar." "It is sold in immense quantities to manufacturers of candy, and all other forms of confectionery." "It is sold extensively to mix with California honey," &c., &c. Now, the producers of this glucose get from 50 to 75 per cent. profit on it, and the manufacturers and mixers of the several products named above, buy it for less than one-half the cost of pure cane sugar or syrup; consequently, consumers are paying several hundred per cent. on about all the sweets they use. Consumers, are you going to stand this wholesale robbery? Are you going to be "gulled" in this way, and continue to look on, keeping your mouths shut, and let those fellows reap immense fortunes by charging you several hundred per cent. more for these commodities than is just and right, just because they CAN and YOU allow them to do it? And YOU, bee-keepers, who are producing a pure article of honey and sell it in its pure state, how does this glucose business strike you? How do you like to place your hive honey in competition with this MIXTURE, which can be sold for from one to two hundred per cent. less than your pure honey, in consequence of the less cost of production? It is no doubt true that this competition could not long exist if this glucose mixture was sold under its proper name, as its quality does not, and can not, (as has been proven) compare in flavor and other characteristics with

pure honey. This misrepresentation seems to be the worst feature in the whole busines, and what puzzles us more is, that our Government will allow such dishonest practices to be perpetrated upon the consumers of the various sweets referred to above. What has that Congressional Investigating Committee done in reference to this matter?

We hope that all lovers of justice, everywhere, will use every influence that can be brought to bear against these dishonest and villainous practices.

[From the American Bee Journal.

Failures in Bee-keeping.

R. M. ARGO.

From 14 years' experience with Italian bees, and 25 with the natives, I think I can say, without fear of contradiction, that every case of failure in bee-keeping may be traced to the manager alone, and not to the bees or hive. It is like one trying to practice medicine without having learned to do it successfully: or if learned, his practice was of such a bungling nature as to insure failure.—Bees require scientific and prompt attention at the right time, and the apiarist should be thoroughly able to render this attention, or else he should let bees alone.

Have you ever known a practical apiarist, of several years' experience, to quit bee-keeping from failure? I know of none that failed, but Mr. Gallup did leave it to follow another business that would not allow him time to attend to his bees properly. No one who has failed can say that it was not his own fault.

Farmers in the neighborhood of an apiary think the apiarist is doing as well if not better with his bees than they are with their farms, so they procure a few colonies in such hives as they see him using. They place them in the most unfrequented corner of the yard, either in the sun or too much in the shade. No further attention is given them till the time of "robbing," and then, if they get say 15 pounds of honey per hive, they are satisfied. If not, they think they have not got the right kind of hive, for they have no other notion of success than the hive used; and they think that success or failure attaches to the hive they use. What would such persons think of an apiarist who might tell them that he could take a large colony of bees, 8 empty Langstroth frames and a few honey boxes, and without a hive, so arrange them in a good season as to get from 50 to 100 pounds of surplus honey, and can either put the frames in a hive in the fall or winter, or pack them away in chaff without a hive, thus proving that it is not the hive but the management that insures success.

I always tell persons that if they have not considerable time and patience they should let bees alone. When a man has the bees and not the time and patience, or does not understand how, it would be better to let an apiarist take them on shares or give him one dollar per colony to care for them, than to get little or no surplus.

In a few years I think the time will come when the whole bee business will be in the hands of specialists who thoroughly understand it, and it is from this class alone that we can expect the best results.

I must not be understood to say that a good hive has not much to do with success, but that much more depends upon how that hive is managed.

My bees are all right now. We have as yet had no winter; but are having warm rains.

Lowell, Ky., January 17, 1880.

Buckwheat for Bees.

A good deal has been said for and against, as regards buckwheat being a

good honey plant, and whether it paid to litter up a farm with the ineradicable stuff, for the sake of breeding a few bees. Recent experiments by prominent and extensive apiarists in this and neighboring states, satisfy us without doubt that buckwheat is valuable as a honey plant. It was found in these experimental beds that the silver hull variety has more flowers on the plants, and yields more to the acre. The honey is dark, but is preferred to all other kinds by some people. It blooms from four to six weeks after sowing.

It will do fairly well on any soil, but thrives best on rich soil. It should be sown broadcast, three pecks to the acre. It is usually sown here late in July, but for bees it had better be sown early in June, then it will bloom "the middle of July," when bloom is usually absent, and will, we think, yield just as well; though we judge simply from observing small plants. The cultivation before sowing should be deep and thorough.—*Minnesota Farmer.*

Bee-Keeping and Farming.

There are few farms on which seed crops are not grown for profit, and in many, large areas are devoted to them, and there is not one of them but yields bee food in a greater or less degree.—There are several of these crops that, in good seasons, would yield more in honey than would pay the cost of rent and tillage, while individually they would be greatly increased by the more certain fertilization of their blossoms, which the presence of the bees would insure. In green crops there are many that yield honey enormously, those of the clover tribe being the most productive; yet the greater portion is allowed to waste itself, or serve only as food for insects other than bees. If a keen farmer saw the liquid strength of his manure-pit running to waste in the ditches and brook, he would think his baliff was crazy for permitting such a shameful waste; but the product which insensibly steals away the strength of his land, he quiet y allows to evaporate without making an effort to save it. —*British Bee Journal.*

For the INSTRUCTOR.]

Condition of Bees—Feeding, &c.

J. KLINGER.

I examined my bees to-day, found them in good condition, especially my strong colonies, from which I extracted my honey. Five hives gave me 150 lbs. and are now in the best condition; did not feed them any. They have large quantities of honey still sealed over. Two of my strong colonies are young swarms, drawn from those I extracted; from these I took no surplus honey. I had to feed some, but they are in good condition yet.

A FUGITIVE SWARM.

A fugitive swarm came here on the 27th of January. I hived them in a nucleus hive, and gave them three frames of comb and plenty of syrup. But the cold snap came on and as I left them out doors they were too cold to sip the syrup that seaped through a cloth spread on the top of the hive. To-day, when I opened the hive, they were all dead; too damp or wet in the hive.

Stoutsville, O., February, 11, 1880.

Letters.

Editor Bee-Keepers' Instructor:

I have 192 colonies of bees in my cellar; all in Langstroth hives but five. I have been keeping them quiet through the past warm weather, by my mode of ventilation.

JACOB L. BOKER.

Herring, O., Feb. 5, 1880.

We would be pleased to have you let us know what your mode of ventilation is. No patent on it, is there?

Editor Bee-Keepers' Instructor:

Bees now appear to be in fine order about here. We hear only good reports, and bee-keepers are hopeful. Safe wintering and the general boom in prices sets easily on the minds of bee-keepers.

T. F. BINGHAM.

Otsego, Mich., Feb. 10, 1880.

Editor Bee-Keepers' Instructor:

The bee-keepers of my neighborhood are following the old style of keeping bees: They do not take much interest in bee-keeping. Bees are doing well all around here this winter. We have not had but one skift of snow thus far. The bees have a fly every day or two. The yield of honey last year was very small. We have every prospect of a handsome yield of honey this year.

JAS. CRAIG.

Mt. Meridian, Va., Feb. 2, 1880.

Editor Bee-Keepers' Instructor:

Your postal of the 6th inst. was duly received, and in answer will say the bees came through all right and in good condition, and were perfectly satisfactory.—They came through in six days, and so far as I can tell are doing very well. I have not examined them thoroughly because I did not wish to disturb them more than necessary. They are very gentle, good-natured and kind, and show no disposition to sting when handled.—The express charges were pretty heavy, but I would not take twice the money for them that they cost delivered here.

I shall mail you a circular of the "The Controllable Bee Hive and New System of Bee Management," by Mrs. Lizzie E. Cotton, West Gorham, Maine. I presume you have heard of her before, and perhaps seen the circular; this one has a special notice on the back to which I call your attention. Last fall I saw Mrs. Cotton's advertisement in some eastern paper, and sent her a card for a circular. She sent me one like that I send you, only without the special notice, and you will see on the seventh page of the circular that the price asked for a complete outfit is twenty dollars. I wrote to Mrs. L. E. C., asking her if she could not send specifications of the Controllable Hive, (as it was too far to ship bees or hive) so that a hive could be made her. In answer to my letter Mrs. C. wrote to me, referring me for particulars to the special notice on the back of the circular sent with the letter. Early in Dec., '79, I sent Mrs. C. a P. O. order for four dollars; the money was paid to her by the P. M. of Gorham about the 20th. I have written to Mrs. Cotton since, but have not heard from her as yet, and have come to the conclusion that she is a humbug and fraud. You are at liberty to make such use of these statements as you please.

I see that you advertise the "Royal Bee Hive" Is it any better than the Combination Hive? Are the frames interchangable with the Combination Hive?

Do you use wired foundation in broodcombs?

C. R. ROBERTS.

Marion Center, Kansas.

Friend Roberts: While we have not ourselves had any dealings with Mrs. Cotton, and do not know personally as to her real character, we know from the many complaints and accusations made by those who have dealt with her, that she is either an *outrageous fraud*, or that she has been *terribly misrepresented*. The preponderance of evidence is certainly against her. We advise you to write to the P. M. at West Gorham as to her reputation, &c.

In answer to your question in reference to the Royal Bee Hive, we answer that we do not consider it a better hive than the Combination, and the frames are not interchangable. The former is adapted to the regular Langstroth, and the latter to the new American frame. The same style of surplus boxes are used on both hives, the only difference being in the cases which hold the *single comb* boxes; those for the Royal Hive being made in three divisions, and only one tier high; while those for the Combination Hive are in two divisions and two tiers high. We can make the Royal Hive with the *slip down* cap and two tiers of honey boxes when desired. By examining the descriptive list in the Feb. No., you can readily see the difference in the hives &c.

We used and sold the wired foundation last year, and the results as to its

utility were very satisfactory; but the extra price asked for it by the patentees, who are sole manufacturers, is driving it out of the market, and we are now selling the Dunham foundation for brood frames. We do not consider the wired foundation sufficiently superior to other styles to justify the extra price asked for it.

For the INSTRUCTOR.]

Our Mode of Wintering Bees.

J. L. BAKER.

My dwelling house stands sixty feet south of my apiary. My cellar is fifteen by eleven feet, with bottom cemented, and a level passage way from apiary to cellar. I have a common sized door to my cellar. In this cellar I have placed one hundred and ninety-two stands of bees with cloths on top, and both ends of each hive open at the bottom for ventilation, and also to let the bees throw their dead comrades outside. I aim to keep my bees dry, and allow no dead bees on the bottom board. I keep the temperature, as near as I can, from 34 to 38 degrees above zero. I have seen after my bees almost every evening this winter, throwing both outside doors open, in order to carry off foul air and reduce the temperature. In this way I watch and attend to my bees closely during the winter season, and as soon as the weather becomes favorable in the spring I set them out on their summer stands, just as they stood in the fall. I then feed them daily by setting out large shallow troughs containing oat meal, which is the best artificial pollen I ever used. Managed in this way, there will be but little spring dwindling.

Herring, Allen Co., O.

For the INSTRUCTOR.]

March Management.

S. S FETHEROLF.

This is the trying time on bees, and the month that every hive should be examined *positively*, not looked at only, and if scant, must be fed. Meal of various kinds, as we advised last month, should be used, and to get the little workers to gather it at once, a small piece of comb honey should be placed on or very near the feeder, so as to induce them to go there; or you can take the honey to some hive, and get a few bees on it, then carry it back to the feeder.

It is a little difficult to advise positively as to what kind of feeder to recommend for liquid feeding, as I have used several, each one different from the other. The one described below I like very much for the reason that it can be placed near the bees in the hive: Take a piece of pine (a good plastering lath will do), and cut it the length of your frames on the top; tack a sack made of the best muslin, two inches deep; on one side bore a small hole, say ½ inch, through the bar, and pour your syrup into the sack; if your syrup is too thin it will leak too fast, and if too thick it will prevent the bees from getting it; hang it in the hive as you would a frame. Another feeder is made by laying an empty comb flat on top of the frames, pour the syrup on the cells, carefully and slowly until they are full.

I tried Mrs. E. S. Tupper's method of feeding last season, but owing to the extreme cold and changeable weather, it did not succeed very well. There is no doubt but the nearer you represent nature in assisting bees, the better will be your success, and if we could feed entirely outside of the hive, it would be more natural for them. But in March, when our bees need feeding most, the little pets would chill while on their foraging expeditions, and never get back. But we have learned that bees stimulated in March, regardless of the amount of stores on hand, will rear brood faster and be much stronger during the season than when not stimulated

We are very sorry that there are so many bee-keepers who keep bees to get their honey, but never expect to feed them. I acknowledge I once belonged to that class, but have learned better since. Mrs. Tupper's method of feeding bees is to feed in the Apiary by throwing a little syrup in the entrance of each hive to liven up the bees, and by the time that your neighbors' bees are all in their hives—say about 4 p. m.—if the weather is pleasant they will store considerable feed in their hives in a short time. The syrup is to be placed in shallow pans or vessels a short distance from the hives.

Do not expect that it makes but little difference whether the feeding is done in March or April, for you will find that later than March will usually create trouble that will be difficult to control.

If you should have some empty worker

combs in frames, they can be inserted in the hives that are strongest in numbers, the latter part of this month. Only use one at a time, and put it directly in the center of the hive after spreading the combs.

Bear in mind, to prepare for the season with hives, boxes, comb foundation, etc., while you have leisure.

In this climate transferring need not be done in this month, unless by an expert.

Glen Apiary, Palestine, O.

Question Box.

1st. In a secular paper (the New York World) I see reference made to a contagious disease prevailing among the bees of Italy, said to be very fatal. Please inform us on the subject. Are we not risking too much in importing queens from there?

2d. How small a number of bees will winter safely, in a chaff hive, or one well packed, in ordinary winters, if stores are sufficient?

3d. Will bees winter without bee-bread or honey, if well fed with sugar, syrup and candy; or are the first two named articles needed to insure the life of the bees? In short, can bees live without them? M.

1st. We have not heard of the fatal disease you refer to, but if the report is correct and the disease contagious, there is perhaps some danger in importing queens from there. We hope the report is unfounded.

2d. Just how *small* a number of bees will winter safely in such a hive as you refer to, I am unable to state. The conditions necessary to safe wintering are young bees, an abundance of proper food, a warm, dry and uniform temperature of the atmosphere within the hive. The nearer these conditions can be complied with, the less danger of loss; and under such circumstances we think a *very* small colony of bees could be wintered safely. Experience has taught bee-keepers that there is no profit in wintering light colonies, so it is of little consequence as to how *small* a colony can be wintered.

3d. Bees will, we think, winter on good sugar syrup alone, if fed during the fall season, so that they can put it in the combs and seal it over. If candy alone is used it will have to be placed in such a position that the bees can have free access to it at all times. But, admitting that bees will live on such a diet, it will not be policy to leave out the bee-bread, as no brood will be reared when it is lacking.

Are you selling the Bingham Smoker? If so, what is the price? Which is the best size to buy? Do they give good satisfaction? Are they a pretty durable thing, or do they soon wear out.

J. L. RANNELS.

Wilmington, O.

We are selling the Bingham smoker. You will find prices in the INSTRUCTOR—of which we have mailed you a copy. If you have only a few colonies of bees, the "Little Wonder" will do very well, but for general use we prefer the "standard" sizes. They give—as far as we are able to judge—universal satisfaction. We have sold a great many of them, and have never yet heard any complaint from purchasers. They are substantially and neatly made from first-class material, and are, in fact, *a first-class article* in every respect.

Editorial Department.

The date for holding the Central Ohio Bee-keepers' Association at Frankfort, Ohio, originally intended for Feb. 21st, has been changed to March 13th.

Almost from every quarter we hear of the excellent condition of bees. Many strong colonies, in consequence of the mild weather, have been rearing more or less brood the entire winter. Bee-keepers are feeling encouraged and anticipate a "boom" in the bee business this year.

Our readers and patrons will notice that we are selling the Dunham Comb

Foundation for brood frames. We keep this, and the thin flat-bottom, for use in surplus boxes, in stock. We can also supply the Flat-bottom Wired Foundation when desired, at the price of the Thin flat-bottom style.

The demand for sample copies of the INSTRUCTOR has been so great that we have been unable to supply it from the February issue. We will fill all orders from the March number. Those who have been waiting for samples for some time, will know from this why they were not sent before now.

Our Question Box Department will be conducted hereafter by F. L. Wright, of Plainfield, Mich. Mr. Wright has had a large experience in the bee business, which will enable him to answer all questions relating to the subject, in a practical and intelligent manner. All questions intended for the Box should be sent directly to Mr. Wright, not later than the 20th of the month.

The following named persons will sell our apiarian supplies during the coming season. Each one will be supplied with a complete outfit, and when the bee season opens, supplies will be kept in stock by them:

A. F. Eilenberger Laddsburg, Bradford Co., Pa.; S. S Feth rolf. Palestine, O.; Geo. H. Colvin, Dalton, Pa.; John Glaize, Circleville, Pickaway Co., O.; Purdum & Reed, Chillicothe, Ross Co., O. Jonathan Lutz, Leistville, Ohio; James H. Hicks, Wrightville, Johnson, Co., Ga.; E. & A. E. Simpkins, Belfast, Clermont Co., Ohio; J. W. N wlove, Columbus' O.; Henry Van Tress, Harveysburg, Warren Co., O.; John Culter, Ripley, Browh Co., O.; John Gilmore, Oskaloosa, Mahaska Co., Iowa; W. R. Field, Richland, Oswego Co., N. Y.

Cincinnati Honey Market.

WHITE CLOVER HONEY—In full packages, (a bbl. or ½ bbl.), per lb., 10@11c.; in tin cans of 10 or 25 lbs., net, 13@15c.; in 1 lb. glass jars, 1 doz. jars in a case, per case, $2.00; 12 cases of same, $22.50; in 2 lb. glass jars, 1 doz. jars in a case, per case, $3.50; 12 cases of same, $40.00; Linn or Basswood Honey, in original packages, per lb., 8@9c.; Southern clover Honey, 8@9c.; Poplar Honey, original packages, 8@9c.; Buckwheat Honey in original packages, 8@9c. These latter four varieties in tin buckets (of 10 or 25 lbs. net), per lb., 12@14c. Good White Clear honey, in comb, 14c., 10@12c.; Choice, comb-honey, 15@16c. California Clear, good Comb-honey, 14c.

THE BEE-KEEPERS' INSTRUCTOR is published on the first day of each month by

SAMUEL D. RIEGEL, Adelphi, Ohio.

Clubbing List.

The BEE-KEEPERS' 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:

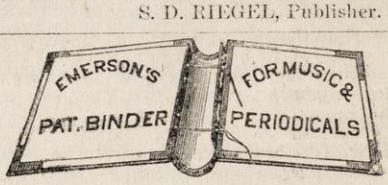
BEE-KEEPERS' INSTRUCTOR	.50c	
With American Bee Journal	$1 50	$1 75
" Bee-Keepers' Magazine	1 00	1 25
" Gleanings in Bee-Culture	1 00	1 35
" Bee-Keepers' Exchange	75	1 10
" All the above Bee Journals		3 25
" The Bee-Keepers' Text Book	75	1 00
" Cooks' Manual of the Apiary (cloth)	1 25	1 60

Rates of Advertising.

1 inch,	1 year,	regular	advertisements	$5 00
do	6 months,	do	do	3 00
do	3 do	do	do	1 75
do	2 do	do	do	1 25
do	1 do	do	do	75
1½ inches,	1 year,	do	do	7 00
do	6 months,	do	do	4 00
do	3 do	do	do	2 25
do	2 do	do	do	1 75
do	1 do	do	do	1 00
2 inches,	1 year,	do	do	9 00
do	6 months,	do	do	5 00
do	3 do	do	do	3 00
do	2 do	do	do	2 25
do	1 do	do	do	1 25

Special rates on larger advertisements, given on application. We reserve the privilege of rejecting undesirable advertising.

S. D. RIEGEL, Publisher.



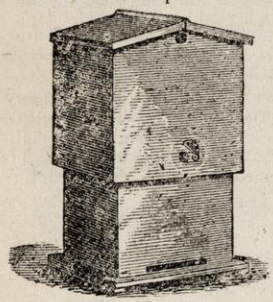
If you have never used a binder in which to file your periodicals, you can't hardly have any idea how convenient they really are. We will furnish Emersons No. 0 binder, neatly lettered, "BEE-KEEPERS' INSTRUCTOR," in three qualities, for 40c, 50c and 65cts., postpaid.

Now is the time to get a binder in which to file the INSTRUCTOR for 1880, as you can insert each number as soon as received. We can also furnish Binders for other Periodicals. Let us know the size you want, and we will send you prices.

S. D. RIEGEL,
Adelphi, O.

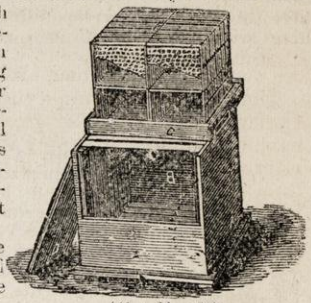
DESCRIPTION OF HIVES AND APIARIAN SUPPLIES.

Cut No. 1 represents the Combination Hive as it appears in summer. The cap support and the four surplus boxes are hidden from view. In winter all these are removed and the frame on top packed with chaff or other absorbing material, when the cap slips down over the lower part, forming a double wall with a dead air space between. When prepared in this way, bees will winter on their summer stands without the chill of winter affecting them, and will, consequently, decrease the amount of honey usually consumed.



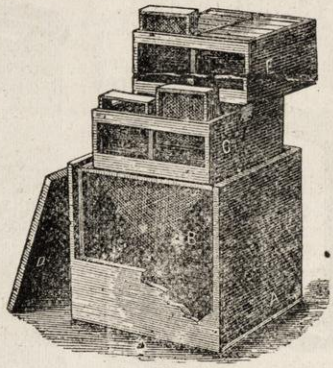
(Cut No. 1.)

Cut No. 2 snows the hive open, and reveals the internal arrangement. D is one of the movable sides, removed to show the frames and spacer at the bottom of the frames. C is the sliding frame on top, which holds the surplus boxes. These are so arranged that the first tier, when partly filled, can be raised, and empty ones placed underneath, so that the bees will continue the combs in the lower boxes. Thus we have the bees working in the four boxes at once. When the upper tier of boxes are full they should be removed and the lower tier raised up and empty ones put under as before. Managed in this way all the bees are kept at work, and will produce a great deal more surplus honey than when they are confined to one or two boxes at a time.



(Cut No. 2.)

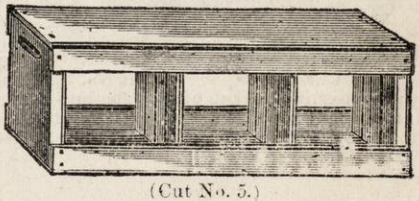
Cut No. 3 represents the hive with our new arrangement for making surplus in single comb boxes. It is composed of two cases, C and E, each holding 12 boxes, with tin dividers between. The comb boxes are placed in the cases from the top, and can be inserted or withdrawn without crushing the bees. The case E is so arranged that it can be set off of C so as to remove filled boxes and replace empty ones



(Cut No. 3.)

In using this arrangement we first put on one case and get the bees working in one side of it, and as soon as they are fairly started we give them the other side by exchanging one or two of the boxes containing combs for empty ones from the other side. As soon as we get them working nicely in both sides of the lower case we raise it up and place the other case underneath, and the bee will go to work in both cases at once. As fast as the boxes are filled and the honey nicely capped over they should be taken out and empty ones replaced. Boxes can be taken from the lower case at any time and exchanged with those in the upper case, or vice versa. When it is desired to produce only extracted honey, we furnish an extra box which is placed on top of the brood chamber instead of the boxes used for surplus in the comb; in this we use eight frames similar to and interchangeable with the brood frames. A division-board is also furnished with this box; by its use the surplus capacity can be adjusted to suit the size of the colony, using more or less frames, as desired. We use the new American frame in the combination hive. It is 12 by 12 inches in the clear; the top-bar is made in such a way as to give the bees ample and easy access to the surplus chamber above. The brood-chamber has two movable sides, which admits of removing one or more frames on either side without disturbing the brood-nest; these movable slides are held in place in the hive by an improved fastening or hook which we have invented, and believe it to be the most complete arrangement for the purpose that we have ever seen. The sliding frame, C, Cut No. 2, with its contents, is so arranged that it can be slipped or set off the lower part of the hive and admit of removing the frames or handling the bees without disturbing or interfering with their labor, in the surplus chamber. A metal strip, called the spacer, and notched on the upper edge, is placed across the Hive near the bottom board, which will receive the bottom bars of the

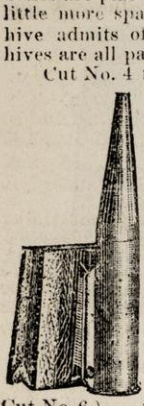
(Cut No. 4.)



(Cut No. 5.)

frames and hold them in their proper position when inserted into the hive. Thus we have a central rest for the frames which renders them entirely independent of each other and of the walls of the hive. When packing the hive for transportation, the four section boxes are placed inside the frames, and when the cap is slipped down it occupies but little more space than when packed as material. This reduction in the bulk of the hive admits of a corresponding reduction in freight charges when shipping them. Our hives are all painted with two good coats of durable paint.

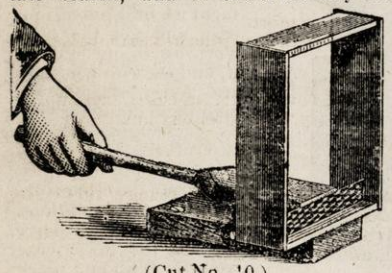
Cut No. 4 represents one of our dove-tailed single-comb sections; the size we use in the combination hive is 5 by 5x2. We make other sizes when ordered. (See price-list.) Cut No. 5 represents a shipping crate. It is made to hold one dozen single sections; it is very convenient to ship in and the honey is in best shape for handling, at retail or wholesale. Cut No. 6 represents the Bingham Smoker. We believe this to be the best and most complete smoker now offered to the public. We have made an arrangement with the patentee for its sale at regular prices. Cut No. 7 represents the Bingham & Hetherington Honey Knife. This knife has a thick, broad blade, with rather a short bevel on the edge of the under side. An attachment for catching the caps when uncapping combs lying on their sides, is sold with the knife at 25 cents extra. We think this knife is destined to supersede the old styles of thin, flat blades. We have arranged with the manufacturer for a supply, and will sell them at the regular prices. Cut No. 8 represents the Everett Honey extractor. This extractor has been wonderfully improved since last season, and is one of the very best now offered to bee-keepers. The wire basket A is intended to hook on the upper edge of the comb-rack for extract'g small pieces comb We furnish them complete at regular prices.



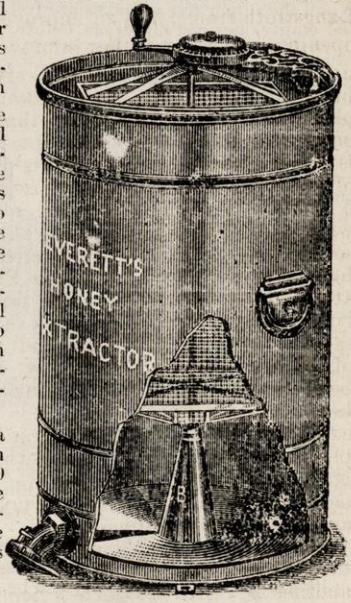
(Cut No. 6.)

(Cut No. 7.)

(Cut No. 9.)

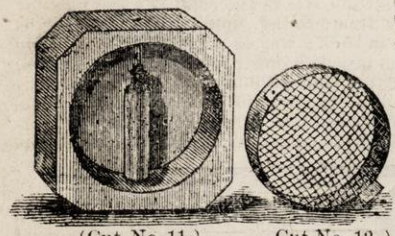


(Cut No. 10.)



(Cut No. 8.)

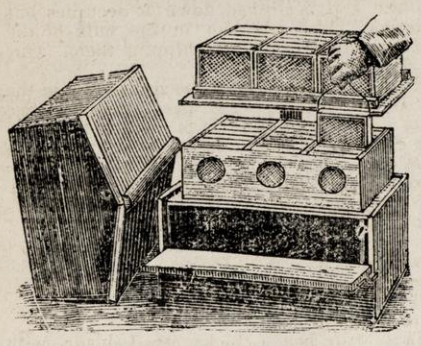
Cut No. 9 represents Carlin's Foundation Cutter, a very handy little tool for cutting comb foundation in proper sizes for frames and surplus boxes. Cut No 10 represents Parker's Comb foundation Fastener. We think this Machine will be extensively used by bee-keepers, as it is the most practical arrangement we have ever used for doing the work for which it is intended.



(Cut No. 11.) (Cut No. 12.)

Cut No. 11 represents our Shipping Cage; in the center is a little vial for water, with which the queen and her attendants can moisten the candy while confined to the shipping cage. The candy (not represented in the cut) is run into the bottom of the cage, side of the vial. Cut No. 12 represents the Introducing Cage, which just fits into Cut No. 11 The little ears represented on opposite side of the cage are fastening for holding the cages together while shipping. They also show the depth when inserting the rim of the cage into the comb. Printed instructions for introducing and handling the queens are placed on the back of each Shipping Cage. We are manufacturing a lot of these cages for the trade. Everything will be put in ready for shipping, except the water..

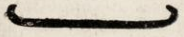
THE ROYAL BEE HIVE.



This cut represents our new hive. The brood-chamber is adapted to the regular Langstroth frame; has an improved side opening, and several other improvements not found in the Langstroth style of brood-chamber. The single comb surplus arrangement is similar to that used on the Combination hive, except that it is divided into three apartments instead of two. The boxes are same size also—5 by 5x2. No honey board is required when using this arrangement, but it is set directly on the brood frames. The honey boxes are set on small tin Flanges, attached one-fourth of an inch from the bottom of the case. This gives the necessary amount of bee space, and admits of inserting or withdrawing any of the boxes without crushing or injuring the bees. The tin dividers are easily inserted or withdrawn, which is a great advantage when preparing stocks for winter, as both the dividers and boxes can be removed, and the cases filled with chaff or any other absorbing material.

When it is desired, we can furnish these hives with extra box, for holding another set of frames. The price for extra box and frames, complete, is 75 cts.; material for same, 50 cts. For prices of full hives, honey boxes, etc., see price list.

S. D. RIEGEL, & Co.,
Adelphi, O.



The above cut represents one of our transfer wires; we cut and bend them ready for use. In ordering give the exact height of frame (outside measurement) on which they are to be used.

Price List

Of Hives and other Apiarian Supplies manufactured and for sale by S. D. Riegel & Co., Adelphi, Ross county, Ohio:

COMBINATION HIVES.

Complete with 4 honey boxes:—

1 to 5, each	$3 50
5 to 10, "	3 35
10 to 20, "	3 25
20 to 40, "	3 15

Complete with two surplus cases containing 24 single comb boxes with tin dividers:—

1 to 5, each	3 75
5 to 10, "	3 60
10 to 20, "	3 50
20 to 40, "	3 40

Complete without surplus arrangements:—

1 to 5, each	2 75
5 to 10, "	2 60
10 to 20, "	2 50
20 to 40, "	2 40

Material for Combination hives and boxes, cut to fit, without nails, paint or glass:—

In lots of 5, without surplus boxes, each	1 60
" 10, " " "	1 55
" 20 or more " "	1 50
" 5 with 4 surplus boxes and glass	2 00
" 10 " " "	1 95
" 20 or more " "	1 90
" 5 with 2 surplus cases, section boxes, tin dividers and glass	2 25
" 10 " " "	2 20
" 20 or more " "	2 15

Extra box, containing 8 frames, same size, interchangeable with brood frames, and division-board, used for extracting, cut to fit, and ready to nail:—

1 to 5, each	50c
5 to 26, "	40c

The Royal Hive complete, without surplus boxes and honey:—

1 to 5, each	2 25
5 to 10 "	2 10
10 to 20 or more	2 00

Complete with 3 honey boxes and honey board—

1 to 5, each	3 00
1 to 10 "	2 85
10 to 20 or more	2 75

Complete with surplus case, containing two-pound boxes and tin dividers 18—

1 to 5 each	3 25
5 to 10 "	3 10
10 to 20 or more	3 00

Material for Royal Hives and boxes, cut to fit, without nails, paint or glass—

In lots of 5, without surplus boxes, each	1 50
" 10, " " "	1 45
" 20 or more " "	1 40

" 5 with 3 honey boxes and glass 1 85
" 10, " " " 1 80
" 20 or more " " 1 75
" 5 with surplus case, section boxes, tin dividers and glass 2 00
" 10 " " " 1 95
" 20 or more " " 1 90

Honey boxes, composed of 6 two-pound sections complete, glassed at each end:—

4 to 20, each.....18 c
20 to 50, " .....16 c
50 to 100, " .....15 c

Material for above boxes without glass—

10 to 20, each 11c
20 to 50 " 10c
50 to 100 " 9

Surplus arrangement, composed of two interchangeable cases, containing 24 two-pound boxes with tin dividers complete:—

1 to 5, each 1 00
5 to 10, " 95
10 to 20, " 90

Material for above surplus arrangements including boxes, dividers and glass—

In lots of 5, each 60c
" 10 " 55c
" 20 " 50c

Surplus cases for Royal hive complete—

1 to 5 each 75c
5 to 10 " 70c
10 to 20 or more 65c

Material for above cases including boxes' dividers and glass—

In lots of 5, each 45c
" 10 " 43c
" 20 or more 40c

Material complete for dove-tailed single-comb honey boxes, any size from 4¼ to 6½ inches:

In lots of 250..... 2 50
" " " 500..... 4 50
" " " 1000..... 8 00

Prize boxes same price as those above.

Material for shipping crates, ready to nail, without glass:—

10 to 20, each.....15 c
20 to 50, " 12½c

Sample crate, containing twelve 5 by 5x2 in. boxes, without glass, by express.....50c

Everett Honey Extractor for 2 frames, 12 by 20 inches or less..... 10 00
For four frames, 12 by 20..... 14 00

The little extra comb-basket, so highly prized by all, will accompany each extractor. In ordering please state the size of frame used.

BY EXPRESS.

Bingham & Hetherington Honey Knife, with cap attachment.....1 25
Without cap attachment.....1 00

Machine for fastening comb foundation in section-boxes, with printed directions for use:

By mail, each.....65c
By Express, each.....50c

Transferring wires ready for use:
½ pound by express.....$ 25
1 do do 45
5 do do 2 00

(1 pound will make 140 wires for a 12-inch frame. If to be sent by mail add one cent for each ounce.)

Combined Shipping and Introducing Queen Cages:

1 cage by mail post-paid.....$ 20
½ doz. " " 1 00
1 " " 1 75
In larger quantities by express, each.....12½c

COMB FOUNDATION.

Flat bottom foundation, for use in surplus boxes, 10 square feet to the pound:—

5 to 10 lbs, per lb.....75c
15 to 20 lbs, or more, per lb.....70c

Dunham foundation:—
5 to 10 lbs, per lb.....55c
15 to 25 " or more, per lb.....50c

If to be sent by mail add 20 cents per lb. to above prices.

BY MAIL.

Bingham Smokers, extra standard, each, 1 75
" " plain standard " 1 50
" " "Little Wonder" " 1 00
Corlin's Foundation Cutter, each.....15c
Bee Veils, ready for use, each.....50c
Bee-Feeders, holding one quart honey or syrup, each.....50c
½ dozen by express.....2 25
Seeds of honey plants:—
Alsike clover by express, per lb.....25c
Mignonnette, by mail, per oz.....25c
Catnip, per oz.....15c
Mellilot (Sweet Clover), per lb.....50c

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1880. 1880

Full Colony, in good Combination hive, no surplus boxes,
Hive delivered on board cars here.....$10 00
With four Frame Nuclei in hive..... 7 00
Pure tested queens from imported mothers—

1 Tested Queen in April and May $3 00
2 do do do 5 50
3 do do do 7 75
6 do do do 15 00
1 do June do 2 50
2 do do do 4 50
3 do do do 6 50
6 do do do 12 00
1 do July and after 2 25
2 do do do 4 00
3 do do do 5 75
6 do do do 10 50

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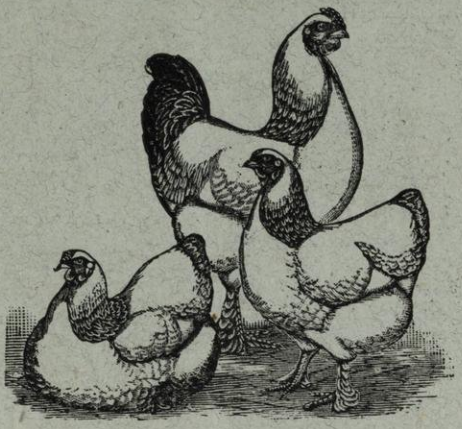

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