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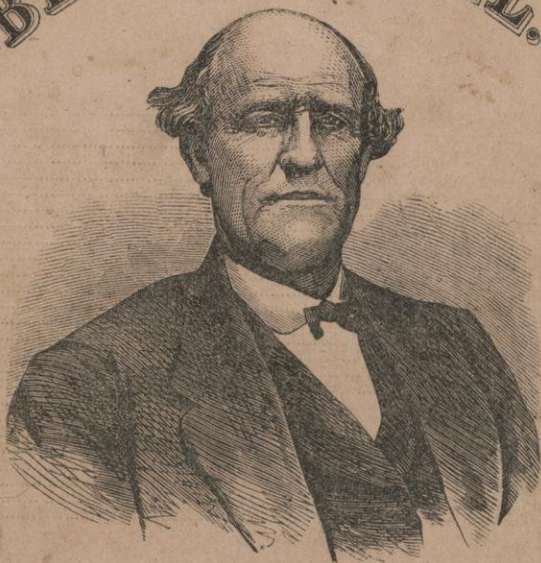
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THE
ILLUSTRATED
BEE JOURNAL.



JULY, 1870.

N. C. MITCHELL, - Publisher,

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The Illustrated Bee Journal.

DEVOTED TO THE CULTURE OF THE HONEY BEE.

Vol. I.]

JULY, 1870.

[No. 8.]

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TROUBLE AMONG BEES.

FOR THE ILLUSTRATED BEE JOURNAL.

I perceive a letter in the last BEE JOURNAL, addressed you from a Mr. John Mohler, describing some trouble among his and his neighbor's bees, and requesting your opinion as to the cause thereof. As this gentleman is probably a relative of Mr. Jacob Mohler, hailing from the same place, (Covington, Ohio,) whose confidence I am favored to the extent of patronage for several queens, a sense of duty and gratitude for past favors compels me to isolate myself for a few moments from the tumultuous routin  of apiarian attractions, to respond to the earnest inquiries of his courteous letter.

And first, he is probably correct in his opinion of the approximate cause of affected colonies, which he attributes to sour or vitiated stores; but from his conclusions, in regard to the remote cause of the disease, I respectfully dissent.

The vitiated condition of the honey, so far from being caused by the coldness of the weather in October last, was in reality occasioned by excessive dampness—a necessary concomitant of moist and open winter, such as last winter was with us. This is an evil of such fearful magnitude, and so baneful in its effects, as to threaten to

depopulate certain districts almost entirely of their bees, where a system of wintering counter to their natural instincts and habits is practiced, and upward ventilation entirely ignored.

No enemy to successful bee culture, with which an anxious and confiding public have had to grapple, has held such undisputed sway, and been attended with such mortality among the bees of late years; and yet no evil is so completely in our power to mitigate or prevent, where correct views upon the subject of wintering prevail. With the inexperienced and those inaccessible to good counsel with reference to conducting bees safely and profitably through the winter, no place can be more objectionable than cellars, or subterraneous caverns, in winters where a goodly portion of the snow falls in the form of rain.

In a state of nature, where the strength of a colony has not been abnormally reduced in point of numbers, the colony itself is a powerful absorbent of moisture, and will protect its combs from its injurious effects to an extent to which their habits and instincts would naturally expose them. And if man will so far come to their aid as to refrain from forcing them into actual contact with wet in placing them in winter quarters, this conservative principle of the bees will ordinarily be sufficient counteract the evils which a cold and damp atmosphere would necessarily inflict. But when from causes inimical to their well-being, they become seriously reduced in numbers, the colony is no longer adequate to the task in such an emergency, and just here is where the advantages of correct views of wintering are both seen and appreciated. The remedy is to be found in upward ventilation with perhaps the addition of a few absorbents to carry off the moisture, and a repository to winter in free from dampness and dirt. It is said that dirt will breed vermin. The truth of this proposition we have verified from observation in numerous instan-

ces. It may be said with still greater show of reason, that dampness and dirt will breed disease in bees, or it will at least superinduce a condition of the hive which will be highly detrimental to the welfare of the colony. The natural laws are universal, invariable and unbending. The same laws control the destiny of bees in Indiana, Ohio and the world over. If these allegations are true, N. C. Mitchell's bees in Indiana are just as liable to the ailment spoken of by friend Mohler, as his in Ohio. And yet Mr. Mitchell's bees never have the dysentery. The fact of the matter is, the condition of the colonies referred to, could no more result from the system of wintering practiced by N. C. Mitchell with the usual precautions taken by him to guard against moisture, than the health of a colony could be maintained against positive efforts to involve it in such a dilemma. The project of corn-cobs as an absorbent to counteract the evil of excess of moisture, as recommended in the ILLUSTRATED BEE JOURNAL, is doubtless an efficient agent in the work of conducting colonies safely through the winter. Not having tried them ourselves, we can not speak from experience; but we have experimented with something that is perhaps equally as good. And, in order to impress Mr. Mohler with the utility or importance of the principle sought to be inculcated, we perhaps can not do better than to describe to him our treatment of colonies in their summer stands the past winter. My main apiary is simply a shed made of boards nailed to locust posts set in the ground, and covered with slabs with a front facing the southwest. The boards on which the hives are set, rest on sleepers with space enough between the boards and ground to neutralize any dampness that the earth might impart to them. The hives are then set as close together as possible, the holes in the honey board left open, and hay placed on two or three inches thick, with boards on the top of that. In chamber hives the holes are left open, the honey boxes dis-

placed and chambers stuffed full of hay. A small entrance is left below that the bees may not rely altogether on the air from above, and the work is done. If the shed is perfect enough in its structure to protect the hives themselves from wet, the combs in the spring of the year will be as dry and clean as in the day they were made, and the first of March will find the colonies as strong in numbers as we commonly see them the first of May. At least so it was with the hives I treated thus. We are satisfied this kind of treatment is peculiarly adapted to such winters as last winter was with us. We attempted the wintering of a few hives in our cellar, but we had to bring them out again, or doubtless before spring we would have been troubled with Mohler's Bee Dysentery. Where the ground is frozen through the winter, most cellars would perhaps be dry enough.

JOHN L. McLEAN.

Richmond, Jefferson county, O.

HONEY EXTRACTOR.

FOR THE ILLUSTRATED BEE JOURNAL.

As a large number of correspondents have asked me about the Honey Extractor, whose I thought the best, etc., I will now say that I have one of the critters. I had formed an idea from the various descriptions of the machines, and I find on reviewing the animal that I had formed a correct idea of them, and like every one else, I believe that I have one of the very best. At all events it does its work well and expeditiously, and for aught I can see will last a lifetime. That is, if a person should die in any decent season. There is no machinery about it to wear out. It is one of the Peabody machines. I

have not used it much yet, but sufficient to test it thoroughly. Our season thus far has been extraordinarily good. Strong stocks where I have taken out two cards of brood either for making swarms or strengthening up and replaced them with frames filled with empty comb, have filled them immediately with honey, and in some cases I have emptied the honey out with the machine two and even three times before I could bring the queen up to the scratch to fill them with eggs, and in all cases where the old or first swarm has come out. Before the young queen has commenced depositing eggs, every available cell has been filled with honey, and the way I make the honey fly is a caution to old brimstone times.

Now Mr. Editor (and that means everybody) you can readily see the advantages of the honey slingers in those two cases if in no others, but it is a great institution and no mistake.

The basswood promises an abundant bloom, and in fact everything in the shape of flowers that turns out this season. It bids fair to make up for the losses of two past seasons, etc.

Now, gents, get a honey slinger and get one of the best, for the best is the cheapest in the long run. I will not say that I have the best, but this much I will say: I do not see any chance for improvement. It cleans the comb almost perfectly dry from this season's gathering. But honey that has remained in the comb all winter can not be got out so clean; yet it will clear out the most of it, and that, too, in a hurry. And now if Green Horn will go out and turn the grindstone rapidly and see which way the water flies off, he can answer his own question.

E. GALLUP.

ANSWER TO "WILL."

FOR THE ILLUSTRATED BEE JOURNAL.

In answer to a pair of queries to "Will," I will say that at the time I penned the article referred to, I had set up with and attended a sick neighbor for two weeks and three days without having my clothes off, or even taking any sleep. I was then taken sick myself and was sick for two weeks, and had just got able to sit up a short time in the day, and so went to writing as I could do no other mischief; and is it any wonder that I made mistakes in several articles written at that time. In fact several of them were scratched off in a hurry, and that article in particular was sealed up by my daughter and sent to the office without my being able to sit up long enough to correct it myself. But if you will read the article referred to in this manner you will be able to get at my meaning.

Before I made the discovery that they were building so much drone comb, they had seven frames out of twelve filled with drone comb; and instead of its being filled up with brood, it was filled with honey. Their queen was an old one and not very prolific, and they were gathering honey rapidly at the time.

E. GALLUP.

ANSWER TO H. C. BARNARD.

FOR THE ILLUSTRATED BEE JOURNAL.

In answer to H. C. Barnard, "What will it be?" I will say that it will be a drone or nothing. I have seen them come to perfection and have taken them out of the cell alive, but the cases are rare.

Last week, June 6, 1870, I cut out two cards of drone brood from a large swarm of hybrids, and in addition to their starting eight queen cells from the working brood, they started four drone broods. Yet every one started from the drone brood perished before coming to maturity, and the above case of bees starting or attempting to raise queens from drone brood where they had a perfect queen and abundance of worker brood, is the first that ever came under my observation.

ELISHA GALLUP.

Orchard, Mitchell county, Iowa.

EXPERIMENTS WITH BEES' EGGS.

FOR THE ILLUSTRATED BEE JOURNAL.

MR. EDITOR—On page 332 of the June number, Mr. Thomas J. Ottarson, after stating that I have ventilated philosophy, and admits that my statement are facts with reference to fertile worker eggs maturing as drones in both drone and worker comb alike, and that, too, in new comb, in which no brood of any kind has been reared, goes on to ask. But because workers have never been known to mate with drones, does it follow that they do not? Is it not possible that a worker may eat of the royal jelly or some other amative substance, get on a spree, fly out, mate with a drone and lay drone eggs? Now, I do not say how these things go on, nor do I think Mr. Ottarson does. He seems to lean, however, in that direction, but does not give his reasons for being favorable to such a theory, and for this very reason such a position amounts to just no reason at all. If he expects to support such a position, let him come out and give us the basis upon which his philosophy rests; other-

wise beekeepers will be forced to the conclusion that he is sorely afflicted with the scribbles. He calls it philosophy, which always has a visible foundation to rest upon. What does his rest upon? Where are his experiments which demonstrate his would-be doctrine to be true? Has he told us how fertile workers come? If he has, it has not appeared in print in company with his philosophy, where it should have appeared by all means. He simply asks a question about their eating royal jelly and mating with drones. Now, I can partly answer his question, and so can any queen breeder. We often remove a grub from a royal cell and leave the royal jelly behind which the workers eat. Yet in no such case has any one known them to become fertile workers, but the contrary is proved by the fact that the labors of the hive go on in the usual uninterrupted manner, which will not be the case if fertile workers are produced. Besides, if it is at all likely that fertile workers are brought into existence in this way, some of them would be likely to show marks of having copulated with a drone, either in the living state or under the microscope. Neither of which discoveries have as yet been made, but all investigations on this subject have gone to prove the position that workers never mate with drones under any circumstances. Now, our friend may take the position that if fertile workers do not exactly mate with drones, they goosey gander a little—just enough to lay drone eggs. Such a position would go so far to prove his philosophy as any he has yet taken.

Now, the most reasonable theory with regard to the manner in which fertile workers are produced that I have any knowledge of is, that where a colony from any cause becomes queenless, they at once make preparations to rear another; and in so doing they no doubt feed a portion of the royal jelly to quite a number of the larva who are never fully developed as queens, but after having been fed a small amount are sealed up as workers

and are thus developed as neither worker nor queen. I have observed the following facts which go to prove this position in part at least. Having removed the queen from a full colony and left them to rear another, I have never been able to discover any eggs until some days had elapsed after the young queen should have been laying eggs. These occurrences I have witnessed three different times—one in the summer of 1868, and the other two in 1869. Now if Mr. Ottarson is anxious to satisfy himself as to whether worker eggs will be laid in drone comb and be developed as workers or not, let him take from one or more of his colonies all the worker comb they have, and substitute drone comb in its stead, and I think he will be satisfied that he can raise all the the drones in a very short time he may have use for during the remainder of the season.

Another experiment I wish him to try, namely: that of taking all the drones away from a colony and giving them a queen just hatched, and confining her to the hive two or three months so that she will have no access whatever to the society of drones during the whole of three months, at the end of which time let her out among the bees and I think he will be able in this case to raise all the drones he wants without being able to show a single worker from such a queen. He may give them an equal amount of each, or give them all of either kind—I do not know which is best—but either he will find to answer his purpose admirably.

In conclusion I will say for Mr. Ottarson's benefit that what I have invited him to test is not at all new, yet it places his philosophy in an awkward position. These experiments were carefully conducted by Huber, or part of them, and by Langstroth, if my memory serves me correctly; at any rate, if he will read carefully the work of Mr. Langstroth, he will ascertain who several of the parties were who thus experimented and invariably with the same results. But Mr. Ottarson says if occasion re-

quires, he will let off a big gun. I hope I have in no way offended him in writing the above facts. I at least have not desired to do so, and hope to escape his storm of wrath. It may be it was Mr. Trudo he meant if I am out of the scrape; but he must fight Trudo fair or I will back him, and I don't believe he can clean us both out. All I ask is for Mr. Ottarson's real experiments and observations, not his imaginations.

G. BOHRER.

Alexandria, Madison county, Ind.

WHICH WILL THEY DO? NO. 2.

FOR THE ILLUSTRATED BEE JOURNAL.

Well, Mr. J. W. Thomas says, "I would here remark that whatever method (of artificial swarming) is practiced, it is absolutely necessary that the old queen be in the new hive, as bees always breed drone comb when they have no queen; and every method that does not recognize this fact should be rejected." (See *American Bee Journal*, vol. 5, No. 1, p. 11.)

We have shown by Quinby, the two Harbisons and J. H. Thomas, that it is a fact that the queenless hives will build drone comb if they build any; but friend Gallup, A. Grimm and I. H. Smith, on the other hand, maintain that there is an exception to this rule; and that they will, under certain circumstances, vary this rule. This is just what I was driving at when I asked Gallup to explain what he meant in his former article. All seem to hold it to be a fact that the queenless colony will build drone comb in the early part of the season, and especially if one-half of the hive is to filled with comb, and later in the season, even with a fertile queen present,

if the great breeding season is past, and the production of honey is abundant. If we then remove a comb at a time they will almost invariably build drone comb in the vacancy, especially if the queen is an old one. When we admit this exception to the rule, there can be no disagreement or contradiction between our writers on the production of drone comb. Let the right "symptoms prevail" in our bee literature as they should, and the "doctors" will see them. (See *Illustrated Bee Journal*, page 244.)

Friend Grimm pushes the hardest against the fact brought forward by J. H. Thomas in the expression that "bees *always* build drone comb when they have no queen."

Mr. Grimm says: "A strong colony, which is getting ready for swarming, will, even if supplied with a young queen, in nine cases out of ten, build drone comb only." (See *Illustrated Bee Journal*, page 254.)

Here what is recognized as the general rule is turned into the exception, and what before was counted as the exception now becomes the rule. We need our works on bee keeping revised, and the errors in teaching corrected, so that we shall be no longer in the fogs of bee culture thrown around it by those who do not see and teach clearly.

JEWELL DAVIS.

Charleston, Illinois.

DR. T. B. HAMLIN'S REPORT

To the Board of the Agricultural Department of the State of Tennessee.

In compliance with your request to examine the artificial bee comb made by Dr. Knaffl, I repaired to his place, three miles from the city, and found in one of his hives a piece of artificial comb about four by five inches

square, inserted in one corner of a frame of one of his hives. This piece of comb was nicely attached to the frame on two sides, and to old and dark comb on the other two sides, built and connected as is the case when a natural comb is inserted, connecting with wood and old comb as in this case, my first effort was to satisfy myself that it was artificial comb to which my attention was directed. In this I had no difficulty, as Doctor K. had showed me the process and the material of which his comb was made. In the upper part of this piece of comb was honey, the cells of which was built out some of them one-eighth of an inch from the original orifices of the artificial comb, and nearly filled with honey. Below this was brood in the chrysalis (sealed) state of transformation. Next below this was larva (grubb in the open cells). Still below this eggs and pollen (bee bread). This examination satisfied me that Dr. Knaffl's artificial bee comb is accepted by the honey bee.

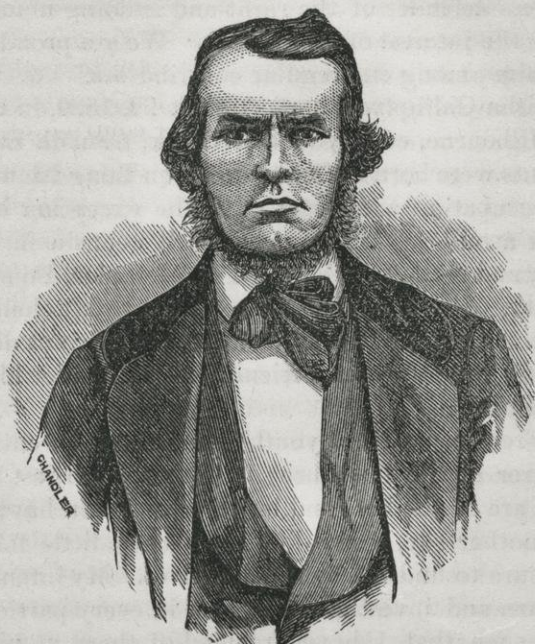
One more thing is desirable to see and know that the young bees from this artificial comb are in a perfect and healthy condition. In this examination I found the brood healthy, and have very little doubt the young bees from this comb will be all right.

The comb, of itself, is white and beautiful; the septum and walls of the cells of this comb are very thin and light, more tough and stronger than the newly made comb from the bee. The size and depth of cells of all the specimens I have seen is what is known as worker or brood comb, the cells making out horizontally and at right angles from the septum of the comb. From what Dr. Knaffl said and showed me, no doubt deposit and drone comb can be made with any depth, size, or angle desired. From my examination, I think this artificial comb greatly excels former efforts, and if furnished cheap will go into use and be of great advantage in bee culture.

Yours, respectfully,

T. B. HAMLIN.

Edgefield Junction, Tenn., May 31, 1870.



ELISHA GALLUP.

ENGRAVED FOR THE ILLUSTRATED BEE JOURNAL.

The March number contained the likeness and a short sketch of the life of E. Gallup, of Orchard, Iowa. At the time our addition reached five thousand copies, and so great has been the demand for the number that the edition has long since been exhausted, and still the cry is "we want Gallup's picture, sketch of his life, etc." We would say to bee-keepers that it is with pleasure we again present him to our readers. Gallup's name is known and spoken in every language wherever the little bee is known. We receive exchanges from France, his name is there; we go to Germany, his name is a household word; we turn to sunny Italy, and read of Gallup. Go where we may, and Gallup's name is as familiar as a household word. We are glad to have it so. He is a

fearless defender of the right and is doing much to promote the interest of Apiculture. We are proud to number him among our regular contributors.

Elisha Gallup was born August 22, 1820, in the town of Milbourne, county of Sherbrook, Canada East. His parents were born in Connecticut, on Long Island Sound. By occupation a farmer; with the exception of eleven years a miller. He removed to Wisconsin in October, 1859, and settled in the town of Metonier, Fond du Lac county. In June, 1865, he removed to Mitchell county, Iowa. And now, in the fear that we may not do justice, we will here introduce friend Gallup, and let him speak for himself:

“From my earliest youth I have been an enthusiastic admirer of the busy bee; in fact, my earliest recollections are of the bees and bee-hives. Often have I heard my mother say, if she lost me when a little fellow, she was sure to find me by the bee-hives. My intense desire to learn and investigate the bees in every particular has been such that I have dreamed of them at night and thought of them in my waking hours to an almost absorbing extent, and to-day I am still a student; and I find those persons who proclaim themselves *finished*, in every branch, are the ones who in reality *know* the least.

“My early advantages were of a limited nature in the way of education—scarcely common school advantages did I have. My first reading upon the subject of bees, was a small pamphlet written by Weeks, of Vermont, which abounded in errors. My next was a work by T. B. Miner. I picked up my first real insight into the true system of bee-keeping from an old German, by the name of Wellhuysen. He made one hundred and twenty-five swarms from one, in two seasons. And here I will remark, that I have been suspected of getting my knowledge upon the subject of bee-culture from Mr. Langstroth’s work; but to settle that matter quickly and satisfactorily, I have never been known to quote from

Mr. L.; neither could I have done so, from the fact I had it not to quote from. Once I remember to have had the privilege of skimming through it one evening, at the house of a friend, and that was merely to see if there were any new ideas put forth.

"Eight years ago last season I obtained my first movable comb-hive. My progress from that time I felt was rapid, from using a glass observative hive of one single comb, for several seasons in Canada, of my own getting up. In my opinion, the movable comb-hive is very far superior.

"Mr. Quinby's first edition struck me as being excellent; and when I saw an advertisement of his second edition, knowing that he had the advantage of the movable combs, I looked forward with confidence, and expected to see some questions fully discussed by him, which I considered of vital importance; and when I obtained the book, and found that he had almost stood still, and those questions not even mentioned, I was disappointed in the work, and this determined my course to some extent.

"For the purpose of fitting myself to appear before the reading world, I attended writing school, so as to accomplish myself in at least writing a legible hand. This was in the winter of 1865-66. As you say you are somewhat familiar with my writings, I leave you to judge of my success. My disadvantages at my time of life I fully appreciated; but being a man who has the fortitude to not look back when the hill has once begun to be climbed, my ambition and energy kept me ever on the onward path. I commenced first to write for the *Bee Journal*, and to-day my private correspondence would fill a goodly sized volume, of which I am proud—with innumerable testimonials from different parts of the United States and Canada, and from those who were entire strangers, which enhances their value, being assured it is not flattery.

“Wishing, at no distant day, to welcome you to my home, and assuring you a good visit,

“I am truly yours,

E. GALLUP.”

Our readers see in Mr. Gallup a self-made man, and to-day is recognized as the leader in Apiculture, standing in the front rank, still advancing, learning something every day of his little busy pets. What a name has he made for himself! His letters have, no doubt, been read in every county in the United States. You can scarcely find a bee-keeper that has not heard of Gallup; he may be justly called the Huber of America. We are pleased to announce to our friends that Mr. Gallup will contribute to our journal.

The friends of Mr. E. Gallup will hereafter address him at Orchard, Mitchell County, Iowa.

From the Western Pomologist.

BEES AND IMPROVED BEE HIVES.

Raising Queen Bees—What is the Best Form of Hive—Comb Building—How to Secure the Greatest Amount of Surplus Honey, &c.

Before the invention of movable-comb hives, it was pretty generally regarded that success in bee-keeping was a matter of chance—that he who kept bees was lucky or otherwise, just as it might happen—unless, indeed, he sold his luck, or lost it by giving away a hive of bees. But since the advantages of movable-comb hives have been brought before the public (in this country mainly by the efforts of Mr. Langstroth), great progress has been made. And although no intelligent and well informed apiarist would now use hives without movable-comb frames, yet the most advanced of bee-keepers are far from being masters of their business in

all respects; and as a class we are still in the infancy of the pursuit, and have but just begun to see things as they are, or ought to be.

Queen rearing has within a few years, since the first importation of the Italian bee into this country, grown to be a pretty large business, and many are devoting all their time to it. And yet there are comparatively few of the bee-keepers of the country who know that the queen breeder can secure the fertilization of his queens by drones of his own selection; and fewer still, that such process may be conducted by the confinement of the queen in full view of the operator. These processes are yet but partially unfolded, or rather they are the germs of what may be, and much uncertainty attaches to them, although they indicate a good deal of progress and give hope for more.

As to hives, without some form of movable-comb frames, the bee-keeper has, we may say, *no control* of his bees; and with their use, complete control. But the forms of movable-comb hives are so numerous, and there are so many ends to be secured by the use of them, that the bee man is often confused in his endeavors to decide what form to use. It is an undisputed fact, I believe, that all the hives in the apiary should be of the same style, and the frames of uniform size, so that a frame from any one hive may be used in any other. And I believe the same ought to be the case in the business of queen-rearing, although many breeders use small or nucleus hives with frames about a fourth as large as those in full size hives. Let us now enumerate some of the objects to be gained by the form of hive, and so better understand what shape we need.

Lifting out combs, destroying worms, dividing (artificial swarming), extracting honey from the comb, cutting out queen cells—these things we will not now take into the account, for almost any shape of hive and frame will do for these manipulations. But there are other

ends to be obtained, toward securing which the shape of hive and frame has a very material effect.

First, *safe wintering*. As more bees are lost by the unfavorable weather of winter, combined with an ill-shaped hive, than from any other cause, except loss of queens, this is a matter of the first importance in considering the kind of hive we shall use. It is well known that bees cannot winter between solid sheets of honey—that they must have empty cells to cluster in, and at the same time have plenty of honey near, which shall be accessible during a long cold spell. I know of but one feature in a hive that will always secure the winter supply of honey in the right place, and that feature is tallness. The honey must be *above* the cluster of bees; they can then advance upward as they consume it. The capacity of the hive, of course, should be the same as in any other shape. It should be nearly square, probably about ten inches inside dimensions, but fifteen inches or more in height. The bees will then store their winter supply in the upper portion of the hive, just where they need it. In the shallow form of hive, as the Langstroth is usually made, almost all the winter supply will be stored in the ends and sides of the hive, and but little directly over the cluster of bees. Consequently, in such hives the bees are sometimes starved to death in cold weather, with plenty of honey on all sides—the intense cold making it impossible for them to obtain it, as they cannot leave the cluster; and if they could, the honey would be too cold for them. But in the tall and narrow shape of hive, the honey being directly above the bees, is readily obtained, and is kept warm by the animal heat.

The next important end to be secured to the bees is, *facility in comb-building*. “Can we help the bees in this part of their work?” does any one ask? Certainly. I have seen a fair swarm of bees occupying one side of a Langstroth hive, one full comb of brood being given them for a start, which did not build six square inches

of comb in six weeks. The reason was, the entire force was needed to cover the one comb of brood, and to gather their daily food, their being no force left for comb-building. To construct comb-cells, the animal heat must be economized, unless the weather be sufficiently warm without the help of animal heat; and if the hive be so large that all the animal heat is dissipated, no progress can be made. If the full comb of brood had not been put into the hive as above mentioned, the swarm would have occupied one corner, and made considerable progress in building comb. In order to facilitate the construction of comb, therefore, the hive must be adapted to the size of the colony. This can be accomplished better by the use of a close-fitting division board, than in any other way; but the hive should not be too long; the space in which the swarm is placed should be about as broad as long.

The use of the division board is, then, the important point under this head. And we can readily see how its use will enable us to adapt the size of the hive to the size of the swarm. Hence, a hive neither very broad nor very narrow in either direction, but one of medium dimensions, with plenty of space *upward*, will, so far, meet your wants. It should, however, be larger one way than the other, for if it be square we have but little use for the division board. Let us suppose, for example, that we make our frames ten inches wide and fifteen high, and place them in the hive crosswise, having the longest dimensions from front to rear. We may make it long enough for ten frames and a division board half an inch thick, which will be fifteen inches. The inside dimensions of our hive will then be about eleven inches across, fifteen from front to rear, and fifteen and a half deep. This will be large enough for the largest swarms; and for small swarms we can contract by placing the division board near the front, leaving but eight, six or four frames in the front apartment, as need be.

Surplus honey is the next object of importance. How can we secure the greatest amount in the easiest manner? If we wish the surplus in boxes, we need a large space for them, and that near the brood. As a large colony in a good harvest will occupy and fill the space to the capacity of sixty to one hundred pounds, our hive should provide this much near the brood. On the top of such a hive as we have indicated, the boxes would be too far from the brood, and the bees would not occupy them readily; and besides there would not be space sufficient without placing two or more sets of boxes over the frames, and that would be too bungling, especially when we attempt to remove frames, which it may frequently be necessary to do. But on the *sides* of a *narrow* hive, tall enough for the winter supply above the brood, we may place boxes to the aggregate capacity of one hundred and fifty pounds, according to the depth of the boxes outward from the main hive. The bees will work in boxes thus placed as readily as if placed over the brood, and they need never be removed in order to take out frames.

But if it is desired to obtain surplus in frames, or by means of the mel extractor, one portion of the hive can be set apart by means of the division board, for this purpose, and thus honey may be obtained in its purest state with the greatest ease and rapidity.

Queen-rearing is the next object to be considered in the construction of hives. Although all bee-keepers do not wish to become professional breeders of queens, yet every one ought to rear a few for his own use. And it is of some consequence to be able to do it with as little loss of time, labor and bees as possible.

In no way can it be successfully prosecuted, as thinks the writer, as by the use of comb-frames of the size used in the large hives, and by the use of those hives. By using two division boards in one hive, three apartments can be made, each of which can be used for queen

rearing purposes, and when no longer needed for this, the division boards can be removed and the nuclei united without much trouble, making one good colony. Frames can be exchanged at any time with full colonies and thus brood supplied to nuclei or nucleus can readily be built up to a strong colony by inserting combs of sealed brood from strong colonies.

Our idea of a good hive will thus make it necessary to have an outside casing to cover the boxes for surplus. The casing will also serve to keep the temperature more uniform—cooler in summer and warmer in winter. The space for the boxes may be filled with dry chaff or sawdust, or other non-conducting material, for winter protection; and by having the casing extend two or three inches above the frames, and the space over them also packed, the protection will be abundant. In a hive with an outside casing, the sides of the brood chamber may be made of half inch stuff, or the ends of the frames may constitute the sides of the chamber, and thus the boxes be placed very near to the brood, which is very important in inducing the bees to occupy them early.

W. C. CONDIT.

Howard Springs, Cumberland county, Tenn.

MOVABLE FRAMES.

FOR THE ILLUSTRATED BEE JOURNAL.

FRIEND MITCHELL—It may seem presumptuous in one, especially a beginner in bee culture, to take a position against the movable frames now so generally and seemingly so satisfactorily used by the very best apiarists in this country, and were there not so many objections to them and so many difficulties attending their use that

none but experienced and practical bee-keepers can overcome, I should be among the last to disparage their use and should refrain entirely from saying aught against them, did I not believe their imperfections susceptible of a remedy. In the first place the bees never fasten their combs to and across the bottom, consequently the bottom bar at least is not only useless, so far as the use it is to the bees has to do, but is positively in their way, and a harbor for the moths in the bargain, to say nothing about the inconvenience it so often gives in removing combs without first removing them to one side which operation every hive will not admit of. That the present style of frames is not equal to the demands of popular bee culture is obvious from the fact that nine out of every ten who attempt their use abandon them after about one season's trial; and only those who engage in bee culture as a business can operate them at all. Moreover, those useless parts of the frames actually add to the expense of the hive and consume a portion of space better suited to the bees in which to defend themselves against moths than any other; consequently in the hands of careless bee-keepers the frame hive is no improvement on the log or box, and even passably practical men will condemn all claims to improvement in bee culture and resume the good old brimstone practice soon to the exclusion of both bees and honey. But could those objections to the frames be overcome and the comb be as readily removed as it is expected they should be, not one who would give any attention to bees would resort to the old-fashioned way; but instead, would use the more profitable and easily managed plan of the *movable comb* system. With no expectations of gain or merit—though I shall get the device patented, which, by the way, some are sure not to consider meritorious—I unhesitatingly say that the bee hive can be made more accessible to bee-keepers and better adapted to the wants of the bee without frames than with them.

I should not be so frank, did I not know that while the advocates of the frames will oppose, those seeking practicability will sustain me. The only objection I can find to the device in question is, it is not adapted to but one hive with which I am acquainted aside from the one I am using, and that one is the "Diamond Hive," patented by Dr. Conklin, of Ohio.

After further security by the Patent Office, I shall give you full details with a photograph, if an artist can be procured. Till then, I shall persist in claiming that even the moveable frame bee hive can and will be simplified, cheapened and popularized till the old gum and box will have been among the things that were, and everybody become practical bee-keepers. So mote it be.

Yours in gratitude,

F. BREWER.

Waynesville, Missouri.

IMPROVING BEES.

FOR THE ILLUSTRATED BEE JOURNAL.

MR. EDITOR:—I commenced this season with nine colonies of bees—two Italians, one hybrid and six black, which I have transferred to movable comb hives. This has been a good season so far for bees. Friend Aaron Benedict's article on breeding the Italian bee is to the point. I think that the bee can be improved as well as any other kind of stock. Great changes are effected by selecting some point desirable to propagate, such as size, symmetry of proportions, or color, and breed in from such only as exhibit the desired qualities in the greatest perfection. The longer we breed in one direction, or the greater the number of generations that have exhibited particular qualities, the more we expect to find those

points in the offspring, and the more the chances of their showing the original type are diminished.

You see by the above, that I am satisfied that drones from impure mothers may affect or taint with impurity the queens that couple with them. This point should be closely looked to by queen raisers.

LEONIDAS CARSON.

Frederick, Mahoning Co., Ohio.

From the Maine Farmer.

BEES IN JUNE.

June is decidedly the most interesting month of all to the bee-keeper. It is the month in which he expects his most valuable swarms, and the storing of surplus honey will be no small item as the month advances. Not only in a pecuniary view is bee-keeping pleasant and desirable at this season, but to every lover of natural history there is something valuable to learn of bees almost every day. No matter how long one may continue in the business, some new developments will be continually presenting themselves to the careful observer in scientific apiculture.

As I proposed last month, I will now give some directions for artificial swarming, but I believe no one can afford to forego entirely the excitement of seeing natural swarms issue. So if artificial swarming is practiced a few stocks will be left to swarm themselves, and more bees will be left to swarm themselves than will be swarmed any way, so probably a few words on natural swarming will not come amiss with the majority of bee-keepers. In natural swarming the old queen goes with the first swarm, and about ten days before she prepares the old hive for her departure by depositing eggs in several queen cells which, when the oldest are sealed over, the

swarm is ready to leave. Eggs are deposited in these cells at intervals for a week or more so that when some are sealed over others will contain only eggs. The first swarm from a hive may be expected the next day, if pleasant, after one or more royal cells are sealed over, so by taking out the combs in a movable comb hive and looking to the queen cells we can judge very accurately when to expect a swarm. This is the only way I rely on of predicting the issue of first swarms up to a few hours before they start. We are always warned, however, of the issue of all after swarms by a peculiar cry called piping, of the young queens. Queen bees have a mortal hatred toward each other and as soon as one hatches instinct teaches her to make a raid on her yet unhatched royal sisters and do the work of death while it is within her power. This she does by biting a hole into the side of the cell and stinging its unfortunate occupant. Usually about seven days after the first swarm leaves the oldest of the young queens hatches. She immediately proceeds to her deadly work and if not restrained by the workers soon accomplishes her purpose and no further swarming may be expected from this hive, but if the swarming fever is not over she is thwarted in her purpose and immediately upon this she commences piping which may be heard at morning or evening by putting the ear to the side of the hive. Even the inexperienced cannot fail to understand the meaning of this peculiar sound. Usually one or two unhatched queens sound in lower and hoarser tones immediately after the voice of the first is heard. The second swarm may be expected the second or third day after piping commences. Piping for a third swarm may be heard the night after the second one leaves, and one day usually intervenes before its issue. When a number of slaughtered queens are found thrown down in front of a hive and no piping is heard in it, it may be considered a sure thing that that hive has got done swarming. To have a swarm, set your hive on a table

or some other smooth surface and raise the front an inch or so on a couple blocks to give the bees a chance to crawl under, then shake them directly in front of it and let them run in. If they do not see it at first direct a few to the inside with a wing when they will commence buzzing and will be rapidly followed by the whole swarm. If they pitch on a place where they cannot be shaken off they may be dipped with a basin. A little sugar and water or honey and water sprinkled upon them as they are clustered will prevent their stinging. As soon as they are all in they should be carried to their stand, else many will mark their location and return here after the hive is removed.

So much for natural swarming, and we will proceed to swarm a stock artificially in a movable comb hive. Get an empty hive of the same pattern of one you wish to swarm, and after blowing a little tobacco smoke into the old stock, proceed to take out half the combs, with bees attached, and put into the other hive, then fill up both with empty frames. If you did not see the old queen when you divided them, listen an hour after at both hives and you will be able to decide which is without her by the uproar within. Now take the queen you have raised for it in your closed hand, being careful not to squeeze her, and after blowing some smoke from your fumigator into the hive two or three times, blow a little into your hand to make the queen smell like the rest, then let her crawl in among them, after which continue to smoke them altogether for five or ten minutes. Blow it in gradually and not too much of it, though I would have the whole swarm pretty drunk when I got through, they will then receive their new mother kindly. Let this hive occupy the old stand while the other may be closed up, giving abundant ventilation through wire cloth, or something of the kind, and carried to your cellar, or some other cool place, to remain three or four days, when they should be taken up at sunset and put

on a new stand as far as possible from the old one, and allowed to fly. If left to themselves the queenless half would immediately set about raising a queen, but nearly twenty-four days would elapse before they would have one laying, and there would, of course, be twenty-four days that no young bees would be added to the swarm, during which time it would become dreadfully reduced in numbers, and the chances are that it would not amount to much. But give it a fertile queen when it is made and we really gain by artificial swarming, for it is about that time the young queen hatches and commences to lay in a hive that has cast a swarm. I would, therefore, practice artificial swarming always when I had queens to do it with, but never unless I had.

I have devised the following plan for swarming bees in any kind of a hive, which has given perfect satisfaction to me, and which I would recommend in all cases where a swarm lays out day after day, upon the outside of the hive, and refuses to issue. It is practicable in all cases where two quarts or more bees are to be had from the outside. It is very simple, and is done as follows: Blow a little smoke into some other hive, so the bees will not sting you, and break out a small piece of comb containing unsealed broods; melt the upper edge of this and stick it into the top of the hive you intend to put the new swarm into. Protect your face and hands and proceed to brush the bees from the outside of your hive into the new one, and having a queen ready drop her in with the mass, put on the bottom board and set the hive right side up on the old stand and carry the old hive a few rods away to a new stand. The bees are too badly frightened to sting the new queen at first, and when they find out their condition they do not care to. The unsealed brood prevents their deserting the hive. When thus swarmed enough bees will leave the old hive and go to the new one to make that as strong as a large natural swarm, while the old stock will be in better condi-

tion than it would have been if it had swarmed naturally, because it has its old queen. Artificial swarms work just as well as natural ones, and are no more inclined to be cross. When it is desirable to swarm a stock as above and no queen is at hand to do it with, one can be taken from a second or third swarm where it is hived. After-swarms usually issue with more than one queen, sometimes as many as seven or eight, all but one of which are destroyed the first night after they are hived. So when one of these swarms is shaken down in hiving, one or more of its queens may be secured as they run toward the hive. These queens are usually quite young and never fertile, and I have had no experience with them whatever, but think they would answer for this purpose about as well as any. Surplus honey boxes should be ready to put on as soon as white clover blossoms. If intended for the market, have them made of nicely sawed lumber one-fourth of an inch thick and neatly put together, with two glass ends. A stock will not usually swarm quite so early when the boxes are put on, but we need not expect much surplus honey from a hive after it has cast a natural swarm.

Plymouth.

G. W. P. JERRARD.

PROGENY OF ITALIAN QUEENS.

FOR THE ILLUSTRATED BEE JOURNAL.

MR. EDITOR:—It's seldom I appear before the public in print or otherwise—would much rather be a reader than a writer. I like the suggestions and many of the grand ideas that present themselves in the Journal from time to time. I have been requested by some of your readers to give my views or experience to the question asked by T. J. Tillinghast, in the June number of the

ILLUSTRATED BEE JOURNAL, viz: "Will the drone progeny of an Italian queen, fertilized by a black drone, be pure Italian?" I answer, no. If the Italian is a distinct and pure race by themselves, if thus crossed, the black drone must necessarily impart more or less of its own blood, and it will make its appearance in future generations, if not in the first. I have seen some fine specimens of such a cross, but they were nothing more or less than hybrids, after all. It is a conceded fact, I believe, among all practical and scientific men of all nations, that like begets like, especially in all animals or species of a fixed race. Were it not so, there would be no use of keeping or trying to keep up any standard of purity. The fact is simply this, the moment we step from the domain of nature to the crossing of bloods the same changes, and in making such a cross with the queen bee, it must necessarily destroy the purity in that queen for life, as once fertilized lasts through life. I would no more think of making such a cross as above alluded to, than I would of alloying gold with copper and expect to get pure gold or pure copper. The amalgamation is there. I consider pure blood possesses a force and tenacity of hereditary transmission which renders it a success, and reliable at all times; and I would advise every one to strictly adhere to purity of blood if they wish a success. In crossing any stock of any kind, a man to succeed to any extent, must understand his business, and must be well posted, or he will upset with his calculation and finally destroy the very object which he sought. And it is so with the Italian and black bees, to a great extent. The blacks seem to get the ascendancy in some way, unless fertilized in the hive, and this is the only sure remedy I know of; and I consider that Dr. J. Davis, of Illinois, has invented the very machine for this purpose. I consider it one of the greatest inventions of the age, and should be in the hands of every bee-keeper who makes bee-keeping any note whatever. It will pay him.

Mr. Editor, pardon me, as I am digressing from the subject. Speaking of the cross of the Italian and black bees, I think it improves them much, as they are more prolific than the black, that is the first cross; after that I perceive but little difference. I like the pure Italian far better, as they excel the black bees in almost every respect. They excel them in industry; they gather from flowers that black bees cannot; they store more honey; they are more prolific and hardy, and one of the great beauties of them is, they have a better disposition and can be handled with greater safety from being stung. This is one of the great things to be sought after. One word to some of our queen breeders. If they were a little more particular and fertilize their queens, not suffer them to fly out of the hive for that purpose, as they will mix for the distance of three to four miles—and here is where some have been deceived—and those that believe they will not know nothing about it. I have been duped in the same way, having seen articles in bee journals where they stated they kept pure Italians, as they were two to three miles from black bees. Moonshine, surely. Perhaps they were honest in their belief that they would not go thus far; but the question, I think, is fairly settled. I believe it is to the bottom of my pocket, and this is far enough. I have known my bees to cross with black bees for three miles distant, when they were not suffered to swarm. This fact has been settled to the satisfaction of all practical bee men, I think.

Bee-keeping will soon be one of the greatest branches of rural industry. It will be carried on upon a scientific plan. In fact, some of our so-called practical apiarists are learning something daily. Notwithstanding they have been called the veterans of America, yet they are liable to err. Kind reader, look at some of the noted apiarists of the old country, whose names have been sounded from shore to shore, as some of the veterans of

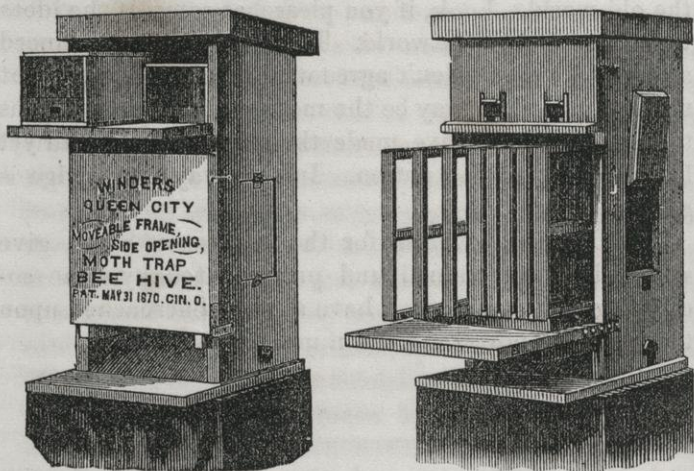
the old world. Look, if you please, at some of the ideas they advanced to the world. Then if you have advanced an idea that others don't agree with, don't put your light under a bushel, it may be the means of calling out ideas that never would have made their appearance, and yet be a blessing to the nation. In this way knowledge is gained.

Had I space I would, for the interest of some, give some ideas entertained and promulgated by some so-called great men; but I have already encroached upon the rights of others. Pardon me, if you please.

A. F. MOON.

HOW ITALIANS ARE MARKED.

Mr. J. H. Thomas writes the *Toronto Globe* as follows on this subject: Many persons do not understand what the yellow bands are that distinguish the Italian from the native bees. Some suppose when we speak of yellow bands we mean the lines round the lower part of the abdomen. This is quite a mistake, for these lines are alike defined in both native and Italian bees. The yellow bands are around the upper part of the abdomen, and are frequently more of an orange color than a yellow. The first band is a narrow stripe next to the thorax, and not always clearly defined, though it is always to be seen in the pure bees. The second may be called a broad stripe separated from the first by a hair-line of black. The third, when it appears, is perhaps a little more than half the breadth of the second, as a general thing, though sometimes it is not half the breadth, and not so clearly defined. Many persons take the broad stripe for the first band, and hence discover only two bands where three may be distinctly seen. The third line is also separated from the second by a hair-line of black.



WINDER'S QUEEN CITY BEE-HIVE.

ENGRAVED FOR THE ILLUSTRATED BEE JOURNAL.

The above engravings represent my patent Movable Frame Hive for the successful cultivation and increase of Bees, and particularly so in a remunerative point of view, as all will testify who have been prevailed upon to lay aside their old gums and foggy notions for one season; and in this hive I have combined the advantages of all the movable comb hives that have been presented to the bee-keeping public.

This hive consists of three apartments. The first, or bottom, is constructed into a moth or miller trap, into which these bee-robbers are entrapped and cannot escape or enter the hive; this trap is immediately under the body of the hive.

The second, or middle part, forms the body of the hive, and is constructed with a side opening table door, opening downward, supported by two wooden slides that draw out through the moth trap. This door is used for a table on to which you draw out the movable frames

when you wish to examine your bees. This movable frame can all be drawn out at once, or any one or more separate, without in the least interfering with any other frame.

The third, or top part, is arranged for surplus honey, using either boxes or frames, and is supplied with a front drop-door, which serves as a table for the examination and arrangement of the surplus honey boxes. This third part is arranged with a lighting board and holes opening into the honey boxes so that the bees may work directly into them, and economize the time otherwise necessary to travel through the whole length of the hive with their loads of honey and pollen.

The top or cover is movable, with side ventilation.

The body of the hive is ventilated from the moth trap, upwards, into the body of the hive, through the wire gauze situated under the movable frames, and through which offal from the hive passes into the moth trap. The bee and moth openings are supplied with stops, so they can be partly or entirely closed at will, to exclude millers and robber bees at any time.

In order to be able to inspect the hive at any time without interfering with the bees, I have attached to one side of the hive an observation glass, covered with a door.

For further information, and for farm, township, county and State rights, address

J. W. WINDER,

Patentee, 132 West Fourth St., Cincinnati, O.

A GOOD BEE HOUSE.

FROM THE MAINE FARMER.

Not long ago I called on one of your subscribers (Mr. S. Richardson, of Belgrade), and as I was somewhat interested in his mode of keeping bees, he gave me an idea

of the construction of his bee-house. Some notes taken at the time I have mislaid, and must write from memory. The first requisite in the erection of a bee-house, is a good location. Mr. R. has this, as it is in a back yard, on a southern slope, about thirty feet from his dwelling-house, and is so situated that the sun shines on the front side from morning till nearly night, when there is sunshine. The building is six feet by sixteen feet with one roof, pitching about two feet from the front to the north. The posts are eight feet from the ground on the front side, and all are set in the ground to prevent the wind from upsetting it. The floor is formed by spiking joists from post to post, and laying sleepers across them, on which is the floor; which floor is about one foot from the ground, and gives ample room to stuff in sufficient straw below it to keep out the cold in winter, after being banked with dirt outside. The rafters are about three inches deep, and are lined on the under side, as well as the walls, with one-half inch boards, and the spaces between this lining and the outer boards are filled with straw. The front side is not thus lined, but is clap-boarded, while the roof and the other sides are shingled. We enter this at either end where is placed a door, made of boards, double. A shelf, three feet high, runs the whole length, of suitable width and strength, to hold as many hives as can be set upon it. A door, or table-leaf board, runs the whole length of the building, opening downward on the outside, and thus forms a shelf ten inches wide, on a level with the shelf on which the hives set. Another door, six inches wide, swings upward, and thus shades the hives from the blazing sun on hot days, when properly adjusted. Thus we have on the main shelf a row of hives, with the apertures for the bees outward. Now let down the bottom door on a level, and a shelf is found on which the bees may alight, and which serves to regulate, in some degree, the effect of the sun on the hives. Swing up the other door, and a

space sixteen inches wide is open, exposing the greater part of all the hives to the light. Below this shelf Mr. B. has another row of hives, set on the floor of the building, with doors on the outside precisely like those above. No windows are necessary in this building, as the openings on the front, and the doors at the ends, give ample light and air at any time desired.

Mr. Richardson is an elderly gentleman and takes delight in caring for his bees, yet he had the frankness to tell me that, for some cause unknown to himself, he lost several swarms last year. These losses occurred before the erection of his bee-house. He thinks the temperature of a bee-house should be such that apples will keep good in it during the coldest weather, and for this reason he would use *tan* in preference to the straw spoken of. He showed me several hives of his own construction, with the movable frames, which I thought were very good *every way*.

And now, Mr. Editor, if the waters from Snow's pond to the Kennebec bridge were navigable, you might expect to see Mr. Richardson approaching your city this summer, in his new sail boat, on her first trip, but as the case is he cannot thus "*come down unto you*."

C. BUTTERFIELD.

Sidney, April, 1870.

DO BEES INJURE FRUIT BLOSSOMS?

FOR THE ILLUSTRATED BEE JOURNAL.

The question is often asked, "Do you really think that bees, in any manner, injure the fruit by sipping the nectar or gathering the pollen from the blossoms?" In the first place I will say, that I think this idea of bees injuring blossoms, of any kind, originated with ignorant

and superstitious people; and to illustrate, I must tell a story:

I once lived near a lady of the above class who, in the spring, was always complaining that Gallup's bees were carrying away all her fruit blossoms, and that she should raise no fruit in consequence thereof. But as it turned out, she raised an abundant crop in spite of the bees. It is but four or five years since the inhabitants of Wrentham, Massachusetts, decided that there must be no more bees kept within the town limits, on account of their destroying the fruit blossoms. Any one would have supposed that the days of Salem witchcraft would have cured succeeding generations of the old Bay State of such ignorance and superstition, but it appears that it did not. The facts of the case are, that instead of the bees injuring the fruit blossom or crop in any case whatever, they are an absolute assistance. So much so, that in the immediate vicinity of an apiary, in some seasons, there will be an abundance of fruit, whereas in localities where no bees were kept there was comparatively little. Bees are a great assistance in fertilizing blossoms that otherwise (or left to nature) would not become fertilized, and the clover or buckwheat patch that produces the most honey produces the most seed, invariably. The honey in the blossom, if not taken out by bees and other insects, would be dried up by the sun or washed away with rain, consequently would be a dead loss; but if we have bees to gather it, it is so much gain, not only to the owner of the bees, but to the fruit grower and the farmer. I would not accuse any one of ignorance or superstition, but will say this much: any one who accuses bees of injuring fruit blossoms, has not carefully investigated the subject. The old lady seeing the bees at work on her fruit blossoms supposed that they were carrying away the blossoms entire, and so reported without making any examination whatever.

The pomologist should certainly keep a few swarms of bees for the purpose of their assistance in the fertilization of the fruit blossoms at times when nature is at fault on account of a peculiar state of the weather.

Orchard, Iowa.

E. GALLUP.

A BEE HUNT.

FOR THE ILLUSTRATED BEE JOURNAL.

MR. EDITOR:—A little fun now and then is relished by the most of men, and to some extent a bee hunt, especially to those engaged in bee culture, with others aspiring. So it was with a trio of us the other day. An old friend of mine and, by the way, a downeaster, who had been hunting a yearling, found a bee tree. Well, after due admiration and consideration, we laid our plans to fell the giant gum and transfer the little chaps into a buckeye hive.

Monday being county court day and everybody going to attend, we set apart that day for the ordeal in order that we should have no trouble nor intrusion. Having arranged our hive and repaired to the scene of action with axes, rags and buckets, of course to gather the nectar which we expected to find in great quantities, we were not long in felling our tree. As it started to the ground our downeaster started somewhere else hallooing lookout boys, do n't get stung, take care there, stop up the hole, do n't let them out. With blanket in hand I rushed to the falling tree top and stopped the hole. All safe, Jesse; come up here, John, come up, let's have the hive, they are safe as a coon a mile high. Ho! says John, why do n't they rally? Come up, Jesse, they are all in, bring the ax, we'll chop them out. Whirr!

went one. Look out, says Jesse, you will all get stung to Halifax; smoke 'em; chop in a little more, John; here 's comb. Whirr! here comes one more bee; pull out some more of the comb, George, says John. Any honey? says Jesse. Look here, says John, holding up a large piece of comb (empty); come up and eat, the bees are all safe; more comb, George. Out I haul comb, dead bees and all. Jesse, not seeing any bees flying, ventures up. Say, boys, where are the bees? Here is one, says John; that's three, all told. No honey, says Jesse; curse three bees! there 's more than that. No, sir, no more than three, and they ate all the honey they had this morning for breakfast. Probably they had company yesterday, says John, and used up all they had. Well, where 's the hive? put them in it, says Jesse; they are smart bees, if they do spoil our mouths when we have fixed them up for honey; they must be remembered, and I 'll treat anybody who will find a lesser swarm than this. Having our expectation considerably diminished, gentlemen let us go to dinner.

MOONSHINE.

Beech Hollow, Ky., June 15th, 1870.

QUEEN RAISING IN CAGES OR NURSERIES.

FOR THE ILLUSTRATED BEE JOURNAL.

MR. EDITOR:—I want to make some inquiries through your valuable JOURNAL in reference to queen raising in cages or nurseries. How do you manage to leave all the cells in the hive until they are nine days old; for the bees do not finish all the cells at the same time; indeed they keep building cells for me as long as there is any brood young enough; and I find if I take those young cells out on the ninth day from the time they were de-

prived of their queen, they do not do well; they certainly need the nurture of the bees while they are hatching. You know how busy the bees are over the queen cells, from the time they are commenced until they are out. Again you know that as soon as the first queen is out all the rest of the cells are destroyed. An answer as to your management under the new system of bee culture will much oblige more than one of your constant readers.

WM. LEAVITT.

Owensboro, Ky., May 16, 1870.

FAILURE AND SUCCESS IN TRANSFERRING BEES.

FOR THE ILLUSTRATED BEE JOURNAL.

MR. EDITOR:—In the fall of 1869, I made my first attempt to transfer bees into the Buckeye Hive. I first drummed them about twenty minutes, then tried to drive them as described in your guide, but they were so full of honey that it was a difficult job to get them to leave the old hive. So I then pried off one side of the box and brushed them off as fast as I could use the comb, but my, what a failure! I had forgot to fasten up my other bees and they soon found me out twenty yards distant, and they came thick and fast to carry off the honey. So I hurried up as fast as I could and shut a great many of them up with the bees I was transferring, and the result was I had plenty of bees and plenty of honey, and it was a success after all, and since that I have transferred some thirty with good results with one to assist me.

First, I get my neighbors to fasten up their bees, not forgetting my own. Then I take a strong colony of bees and honey from the stand and drum them about ten

minutes, then turn the hive and place an empty hive over the top of them and drum them about ten minutes and they are all in the empty hive on top—all but a few young bees, which I brush among the frames as fast as I fill them.

Secondly, I take a weak swarm and treat them the same, and as soon as I know their condition I commence to equalize both bees and honey, and giving each their own queen there is no danger of their fighting. At night, when they are all in, I shut up one of them for twenty-four hours, and have no more trouble with them. Two of us transferred four swarms in one day.

Spring is the best time, the comb being easier handled. I use cotton yarn for holding the comb in the frame, but when the comb is empty of honey I use hard beeswax and a warm iron and drop two or three drops between the comb and frame in two or three places round the frame, and I would continue transferring up to swarming, and if the young queens were sealed and plenty of bees I would divide it at once, and I would transfer the old one after she had cast one swarm. It is the only way to save the old, for all I have transferred were infested with the moth, and as fast as they are hatched out the bees bring them out of the comb, and the small ones will get through the screen, and the result is I have found them by handfuls in the moth box.

I say transfer your bees by all means, for very few old stocks will survive this summer around here.

THOS. PURDON.

TO STOP ROBBERS.

A correspondent of the *Apiculturist*, published at Mexico, Mo., says: A year or two ago I found a swarm in a tree which I cut about the middle of May, and trans-

ferred them into a movable comb hive. In falling, a great many of the bees were killed and crushed in the honey, so that I lost all but about a quart. I took them home and kept them confined in a warm room for thirty-six hours, when I set them out. They marked their location and seemed to be doing well; when one day I chanced to be away from home, and upon my return I found the entrance block had been moved from some cause, and the other bees had carried off every ounce of honey. I regulated the entrance and fed them, but they seemed to have lost all courage, and the other bees took the honey as fast as fed. I remembered seeing somewhere that camphor gum would stop robbing. I procured a piece and put it in the entrance, and fed them as usual at night. The next morning the robbers came, but, to my surprise, as soon as they came near the camphor, they gave a loud buzz and darted away. Presently those from the inside came to go out, and I expected to see them go back as the others had done, but instead they came out with a slight buzz, and again to my surprise as soon as a robber touched the board he was caught and hurled off in an instant. They went to work carrying in pollen and honey, and were troubled no more by robbers. Since then, whenever the bees were seen fighting at the entrance of a weak colony, I have tried the camphor with like results.

NATIONAL BEE KEEPERS CONVENTION.

FOR THE ILLUSTRATED BEE JOURNAL..

MR. EDITOR:—The time for holding our National Bee Keepers Convention, being the 10th and 11th of August, seems to conflict with the interest of many of our leading apiarists—they are very busy at this time in their apia-

ries, and it will be impossible for them to attend at so early a period. I have received of late a great many letters from most all our prominent bee men throughout the country, asking if the time could not be changed until after the closing of the State fairs. This would enable them to close their labors in the apiary, and give all a chance to attend State fairs, &c. I have also consulted with the most of the leading bee men upon this subject, both as to time and place of holding this convention, as some of our eastern brethren wish to have it in Ohio, or Pittsburg, Pa., and, so far as I have heard from, every one wishes it to remain where it was appointed for this time, and then the majority of bee men can fix upon the time and place to suit themselves.

For one, I wish to be governed by the majority, and am willing to go where they may think proper. I am very sorry that any feeling should exist upon this matter and it seems to me that there would not and should not be any, under any circumstances whatever.

The consideration of a National Bee Keepers Convention was published for a long time. At this convention many of the prominent bee men throughout the country were represented, either by person or letter, and the place or location was a subject of much interest, and for the general interest of all concerned it was considered that Indianapolis would be as near central for the bee keeping fraternity as could be, and the vote was taken and was unanimous that Indianapolis be the place for the holding of said National Convention, and Indianapolis through her representatives has responded, giving us a hearty welcome. And may it be remembered that many hearts are beating high to meet there, as this will be the first of the kind that ever was held in America. Let the bee keepers make it an honor to this nation, as its history must necessarily pass down to future generations.

Now, brethren, let us lay aside every weight and the

sin that doth so easily beset us, and come together in friendly feeling, and if such should be the case that any one should have an ax to grind, be sure to grind it at home, and come up in one mighty phalanx and let your light shine. In this way we may do good and benefit those that may follow after us. The proceedings of this convention will be looked for with much interest. The press have already asked that the proceedings be telegraphed to them as fast as they transpire. They are anxious to give the public the benefit of them. We hope it may be interesting to all.

Mr. Editor, I have submitted a few thoughts for the consideration of your readers, and hope they will be received as kindly and friendly as given, and all will be well. The time for holding the convention, as requested by many, will be December 21st and 22d.

Let me here say, let there be a good show of honey, honey machines, queen nurseries, bee hives, &c.

Paw Paw, June 24th, 1870.

A. F. MOON.

HONEY PROSPECTS.

FOR THE ILLUSTRATED BEE JOURNAL.

MR. EDITOR:—As you will probably be short of communications this warm weather, I write you a short letter giving you some account of the honey prospects in this part of the world. The old box-hive men are having their usual "luck." The weather is very warm, and we have not had a good thorough wetting of the ground this season, and the bee pasturage is getting short. White clover does not produce half as much honey as it did last year, and so far the box hives have not turned out many swarms. Bass Wood is just blooming and I am in hopes we shall have a good supply of honey from that. I have been raising Italians, and have increased my ten colonies to seventeen, and have Italianized all of

the new ones. In ten days I shall have enough queens to Italianize all my old stocks. My old colonies are all strong, have kept them so by cutting out drone comb and queen cells every two weeks. I shall keep them strong until after the Bass Wood crop of honey is all harvested, then I shall strengthen my nucleus swarms from my old strong colonies by changing them: *q. e.*, the weak nucleus to the strong stand and the strong colony to the weak stand. I have raised only Italian drones this season, and in my next will tell you how I Italianized, as I have not gone just according to the "books." People are making up around here on the subject of bee culture. I shall send you a club of three in a short time. I will now give you my experience with patent hives. I am giving two hives a thorough trial this year, viz: The "Buckeye" and the "Cottage;" I like them both. The "Buckeye" is the best hive I ever saw for Italianizing. I formed a nucleus in the "Buckeye" the other day when the honey crop was rather short, and in a day or two some of my strong colonies began to rob it; I opened the moth trap which so many seem to be afraid of, and at night I had about two quarts of the "most reconstructed" bees you ever saw. I opened the door of the hive and introduced them to their late enemies, closed the hive and the next day they were busy carrying in honey, where the day before they had been trying to carry it out. Of the Cottage hive I will say that it is hard to beat. It is so constructed that the frames form an air-tight box for the bees, while there is an air space between the frames and the shell of the hive, and the ventilation is complete. For forming a nucleus it is well adapted, as the division board can be put in so as to confine the bees to three, four or any number of frames to suit the "beeist." The hive I am testing stands in the sun while the mercury marks 100° in the shade, and the bees do not hang out as they usually do in some other hives. I might mention other good qualities, but if the

inventor does not know enough to advertise his hive in the JOURNAL I shall not do it for him. Don't let your being compared to the Apostle Peter hurt your feelings, better look like him than Judas. If you get no rougher compliments than that you will survive. If this warm weather should evaporate you so that you can float off into space, just float over this way and condense and come down; we will give you a *warm* welcome.

Atkinson, Ill., April 23, 1870.

JONIDAB.

EXPERIMENTS IN WINTERING BEES—"THE CASKET HIVE."

FOR THE ILLUSTRATED BEE JOURNAL.

Under the above Mr. Cumins says, "that having failed to get straight combs in the Bingham Hive on account of the angle point of the frame; and the Diamond Hive being similar, in that it depends upon the angle in the top for a comb guide." He says, "the Diamond and Casket affairs seem a little mixed to me, after my experience with the Bingham Hive." Further, he says, "But the second swarm that I put into it—*notwithstanding I had put comb into two of the frames to show them how I wanted it—built right across the frames.*" *A thing that never happened in the other frame hive with rectangular horizontal frame.*

Now, it is somewhat mixed to me why the Casket Hive should be mentioned in this crooked comb affair. As the Casket Hive is used either horizontal or angling, and my directions expressly say, that for a new swarm in an empty hive to get straight combs, the hive must be used in a horizontal position, and as my sections are rectangular, and are—when used according to my directions—horizontal, it must, according to your own statement and experience, secure straight combs.

JOHN M. PRICE, Patentee of the Casket Bee-Hive.

EDITOR'S SANCTUM.

APIARY FOR JULY.—Every bee-keeper should now look after the interest of the little fellows or they may swarm too much. There is great danger, too, of the bees filling all the comb with honey, so that the queen can find no place to deposit eggs. And here let me caution all to look to your bees, and should you find a number of combs filled with honey and have no machine to empty it, we would advise you, by all means, to take out a few frames and in their stead put empty frames; and as the bees build new comb, the old queen will be on hand to lay eggs as fast as the bees build the comb. Remember always, that to keep bees in good condition, is to keep them breeding so as to meet the loss of bees that are dying daily. You might put the frames away containing the honey, and should your bees lack stores at any time, one or more frames should be returned to them. I find my own colonies too full of honey, and have sent for a honey emptier. As soon as that arrives, I will make the honey fly. Let me say, in this connection, that right here lies the stumbling stone. More men have been shipwrecked in bee-culture upon this rock than any other. Of course, bee-keepers, using the old hive, cannot avoid it; but men using the movable comb can steer clear of it. Bees will work, and that constantly too, and as long as they can find a single empty cell, they will fill it with honey. Let me plead with bee-beepers to give them room to work, and if you want to be successful, never allow your bees to get ahead of you; rather have them follow you. We have a few cases that will fully illustrate our position. We have

visited several bee-keepers using the different movable comb hives. Their bees had been swarming the old way. They were too busy, said they, to look after their bees, and let them swarm. They asked us to open their hives. We did so. Every frame was filled with honey, and but little bread in the comb, and no place for the queen to lay a single egg. Not one hive that I examined could live over winter. We care not where you put them, they would die and nothing could save them, if allowed to remain as we found them. We removed a few frames and put empty ones in their place. They will be filled soon. We would advise the taking out of two or three more frames. Let the bees fill them also, and again remove some more of the old frames. If bee-keepers will do this, we will hear nothing more of the bees dying and leaving a hive full of honey. If we could only get the ladies to look after the bees, we would then look for grand strides in bee culture. The women think nothing of looking after the cows, making butter and cheese; toiling from early dawn until late at night, wearing themselves out by inches. If our good ladies can endure all this, why cannot they handle the bee? But, says one, they will sting. And so will the cow kick. If you are afraid of the little fellows, wear a veil. First blow in a little smoke—a little roll of cotton rags will do the work. Will our good women try it, but for only one season; that will be enough to convince them that they can make more money from one colony of bees than they can from one good cow, and take up but little time. Who will be the first to try it?

ITALIAN QUEENS.—We will be able to fill orders in a day or two at sight. Single queen \$5, or by the half dozen, liberal discount. We guarantee purity and safe arrival of all queens, and will send all by mail, post paid, unless otherwise directed. Money to accompany each order.

GEN. D. L. ADAIR.



We take pleasure in presenting to our readers a likeness of General D. L. Adair, of Hawesville, Kentucky. He is too well and favorably known for us to add anything to his good name. He is an able writer, contributing to our Agricultural and Apicultural journals. He is the author of a well written treatise upon bee-culture. The General, it will be remembered, is the author of the *Annals of Bee-Culture*, in which he has made a name that will live as long as time lasts. The General has just written us that the *Annals* for 1870 will be out in ten days. We bespeak for it large sales. It is well written and should be read by every one interested in bee-culture; and we should have said that the General is inventor of the Adair hive; and, to cap the climax, he has invented and just completed a Honey Extractor, an article wanted by all bee-keepers. The General has our best wishes in all of his undertakings, and we would be proud to meet and know him better.

A LIBERAL OFFER.—We will send the *ILLUSTRATED BEE JOURNAL* one year, and one Italian Queen Bee for five dollars; sent by mail, post paid, and guarantee purity and safe arrival.

PREMIUM QUEENS.—We have at last commenced sending queens to our subscribers. We send all by mail and so far have not lost a single queen to our knowledge. We are sorry that a very few are disposed to find fault with us. They think they should have had their queens long ago, and say that if they don't get them before the bees are done swarming they will do them no good. We have introduced many queens as late as October and they have done well. We will say to our subscribers, be patient, your queens shall be on hand as soon as possible. As soon as your turn comes the queens will be forwarded by mail post paid. We thought we had made arrangements with other parties to supply us with queens, but the backwardness of the season, first cold and dry, then wet and cold, all very discouraging to queen breeders, they could not fill their contracts, and we could not ask them under the circumstances to do so. That left us no alternative but to raise our own queens. We have gone at it in earnest. We have three men now raising queens and the most of our time is spent in our apiary. We shall not only raise them by the hundred, but by the thousand, and will soon be able to supply all our subscribers and many more of our friends with pure queens. At the time of our last issue we thought we should be able to send many queens in June, and would, had not the cold and continued rain destroyed nearly all our queen cells. Bear with us, friends, we are doing all we can for you, and have every reason to believe that we will have fine weather for rearing queens hereafter.

ARTIFICIAL COMB.—Again we go to press without being able to say that we are making artificial comb. True we can make it in small pieces, but our machinist has met with more trouble than he at first anticipated. The trouble is not in the machine, nor in the comb, but in making the type or forms; each one has to be a fac simile of the other, and when we attempt to get out some

eight or ten thousand it is no easy matter. The machinists tell us that they can be made by machinery and that very rapidly. We have spent a good deal of money and much valuable time to get it perfected, and will continue to do so until the type is perfected, so that the machine can be sold at a price within the reach of all. In our mind, the comb made by the machine is a thing of real life and will prove to be a grand success. Several hundred persons, from all parts of the United States, are constantly writing us they want to buy individual rights, counties, States, &c. We will not sell to any until we have completed our machinery, and to do that it will take some more time. Parties anxious to buy would do well to write to Dr. R. Knapp, of Nashville, Tenn. They might buy one or more counties or States, and complete the machine themselves.

INTRODUCING QUEENS.—We call the attention of our readers to Aaron Benedict's method of introducing queens, all of which we endorse. We can not be too careful. There are many ways to do it, but since we have followed the plan recommended by Benedict we have never lost a queen, and for the benefit of our subscribers we will give them our plan in a few words. We have constructed our shipping cage out of wood and wire cloth. Upon the receipt of the cage open it, take off the wire on the inside, roll it around a stick about the size of your little finger, stop up one end, now catch the queen by the wing, put her gently in the wire cage, stop up the other end; you will now slip the cage between two combs where she can feed herself if the bees refuse to feed her; let her alone for twenty-four or thirty-six hours, then pull out one stopper and close up the hive and let her crawl out at will. I have never lost a queen since I have followed the above plan. The cage mentioned is made expressly for the accommodation of our subscribers, knowing that many of them lived where

they could not get the wire. We have cut it the exact size, tacking it on the inside. Always open the cage in a closed room, then should she fly she would not get away.

THE LITTLE CORPORAL for July is upon our table; we were delighted while turning over the pages to see so much choice reading for the little folks. The pictures, how beautiful! "The New Suit" is a rare gem; and, oh, how beautiful "The Little Pet!" we repeat the first two lines:

"I am just a wee bit lassie with a lassie's winsom ways,
And worth my weight in solid gold my uncle Johny says."

The Little Corporal should be read in every family. We would advise our friends to send at least for a specimen copy, and we will guarantee that it will ever after be a welcome guest. Published at one dollar per year, by Sewell & Miller, Chicago, Illinois.

Our friends should be very careful to write their names plain, giving name of Post Office, County, and State; and should you write, don't omit it, as we often have to spend an hour or more looking up the post office, and at last have to guess at it. Some even forget to sign their own name. You can't be too careful. [Ed.]

THE July number of WORK AND PLAY is received which commences the second half year of this new magazine devoted especially to the occupations and recreations of the young folks at home. It is published by Milton, Bradley & Co., Springfield, Mass., who have an extensive reputation as publishers of the best class of social games and amusements in the market. The Editress, Mrs. H. L. Bridgman, is a lady possessing superior qualifications for her work, and has had long experience as a teacher in one of the best literary institutions in Massachusetts. The several departments are under the care of special Editors, and altogether, the Magazine seems destined to take rank among the best of our juveniles, and to occupy a field essentially its own.

ADAIR'S MEL-EXTRACTOR.

PATENT PENDING.

This machine is all iron, except two buckets in which the honey is collected, which are of tin, and just large enough for the frame of honey to lay on. No wood about it to get sour or dirty. The black grease from the gearing cannot fall into the honey. It only weighs about twenty-eight pounds and can be packed in a small box and be sent for less freight than any other. It will empty small pieces of comb; as many as can be laid on it at one time. It will strain liquid honey or extract the juices from fruits for making jelly. It will separate sugar from sorghum after it grains, and make a nice article of sugar. The frames of comb are laid on it horizontally, and assume a vertical position as soon as set in motion, thus making it a filter for liquids, as well as the best mel-extractor.

Price \$14. Three machines for \$35, with a liberal discount to those who buy to sell again.

D. L. ADAIR.

Hawesville, Ky., July and August.

MISSOURI BUCKEYE BEE HIVE AND MOTH TRAP.—Dr. H. Chase, an old and reliable resident of the City of Indianapolis, has purchased of N. C. Mitchell the entire right of his hive for the State of Missouri, and offer it to its citizens on the following terms:

Farm rights, \$15; Township rights, from \$50 to \$100; County rights, from \$300 to \$600; and will furnish Italian Queens from my Apiary, at St. Louis, on reasonable terms.

D. H. CHASE.

HOW TO SEND MONEY.—By registered letter or by post office order, or draft on Eastern cities, made payable to our order.

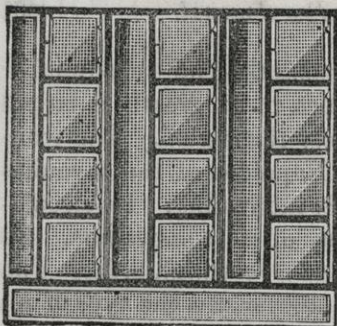
THE LITTLE CORPORAL MAGAZINE.—The July number of this beautiful juvenile comes to us greatly enlarged and improved, as well as finely illustrated. The wonderful growth of this young Napoleon of the juveniles has been as surprising as it is interesting. Its circulation has shot far ahead of any of its competitors. Its matter is entirely original and of a very high order. The freshness and vivacity of its pages cause the eyes of all our young people to sparkle. In its new, improved form, it is one of the handsomest, as it is the cheapest, magazines we have ever seen. Childlike but not *childish*, it rejoices the hearts of both parents and children alike. This number begins a new volume; now is a good time to subscribe. One dollar a year; sample copy, 12 cents. Published by Sewell & Miller, Chicago, Ill.

I WISH to say to those who accepted my offer of fifty queens at three dollars for Journal and queen, that the weather has been very unfavorable for breeding, and has delayed my operations very much. I have made arrangements to have them shipped by the 20th of July.

Respectfully yours,

GEO. W. MERCHANT.

PREMIUMS.—We will continue our premiums to the end of the year, giving three Italian Queens to every club of ten subscribers and \$20; and to every subscriber not getting a queen, we will send either Mitchell's Guide, new edition, or Adair's Annals of Bee-Culture and one queen bee to the getter up of the club.



QUEEN NURSERY.

This important invention is now ready for sale, and is furnished to order, to suit any Movable-Comb Bee Hive, at short notice. Individual, Township, County and State Rights are for sale. Those wishing rights and models should address

DR. JEWELL DAVIS,
Charleston, Ill.

PURE ITALIAN QUEEN BEES.

AARON BENEDICT, importer and breeder of Pure Italian Queen Bees Queens and Full Stocks constantly for sale. Bennington, Morrow County, Ohio.

All orders promptly filled. Satisfaction guaranteed. Send for Circular Price List of Queens and Bees.

AGENTS!

Great inducements offered to agents to sell Italian and Egyptian Queens. Address,

LITTLE BEE MAN,
Springfield, Ohio.

ITALIAN QUEENS.

Italian Queens, of the brightest colors, reared and tested in full colonies, and selected with special reference to the wants of those wishing to get the choicest mothers to breed from. Sent by mail, at my risk, at the following prices: Queens shipped in June, \$8. From June to the end of the season, \$5.

J. L. McLEAN,
Richmond, Jefferson Co., O.

ITALIAN QUEENS AND BEES.

Pure Italian Queens for sale during summer,—Price \$5, sent by mail when I think it safe to do so, if not, will send by express. Full Colonies of pure Italian Bees for sale in the fall, winter and spring,—price \$20, delivered at the Express Office in Anderson. Money to accompany all orders, which may be sent at my risk, either by Express and directed to me at Anderson, or by Post Office money order on Anderson, Madison County, Indiana, and directed to me at Alexandria, Madison County, Indiana. Purity and safe arrival of Queens and Colonies guaranteed to nearest Express Office to purchaser. Address,

G. BOHRER,
Alexandria, Madison Co., Ind

P. S.—I can furnish you with one or two Colonies of Bees if you come at once. **G. B.**

Farming as a Profession;

OR,

HOW CHARLES LORING MADE IT PAY.

BY T. A. BLAND, Editor "North Western Farmer."

Loring, Publisher Boston, 1870.

This work of Dr. Bland's is a novelty in literature, being a most thrilling and romantic story, and practical essay on high farming. The most devoted novel reader will find it perfectly facinating, while the staid old farmer declaes it one of the best essays on agriculture he ever read. There is such a blending of the real and ideal; the romantic and practical, as to attract and inspire the old and young of every station in life.

The book is as romantic as a love story; as practical as an essay on agriculture, and as a tribute to farm life, it is about the best thing we have seen. A capital selling book.

It contains 87 pages; paper covers; price 30 cents. Sent post-paid on receipt of price. Address,

NORTH WESTERN FARMER CO.,

Indianapoli-, Indiana.

QUEENS, BEES AND HIVES.

Italian Queens of the brightest color, warranted pure.....\$5 00
Full Colonies of Italian Bees in McClellan Hives.....20 00
McClellan Hives, best and cheapest Movable Comb Hives made,
(no patent).....4 00

Address

HIRAM MCCLELLAN,

Cable, Champaign County, Ohio.

MITCHELL'S BUCKEYE BEE-HIVE.

Persons desirous of purchasing Farm, Township, or County Rights, for Mitchell's Buckeye Bee-Hive or Moth-Trap, or procure Italian Bees or Sample Hives, in the State of Pennsylvania, will please address

D. H. LINTNER,

Bee-Keeper, Lancaster, Penn.

THE OFFICE OF J. H. CROPPER

Is removed to No. 52 Corner Union and Cherry Sts., Nashville, Tenn.

For the sale of Farm and County Rights, in the States of Tennessee, North and South Carolina, and Florida, for N. C. Mitchell's Patent Buckeye Bee-Hives and Moth Trap. Farm Right and Sample Hive, \$20; County Rights from \$300 to \$1,500. Also, State Rights for sale for Dr. Knaffl's Artificial Bee Comb. Send for Circulars;

\$4. ITALIAN QUEEN BEES. \$4.

I will furnish a limited number of Italian Queen Bees, bred in full colonies, at the following price: One Queen, and the *Illustrated Bee Journal* for one year, for *four dollars*. Purity, fertility, and safe arrival guaranteed. Address, for circular, etc,

T. G. McGAW,
Lock Box No. 64,
Monmouth, Warren County, Illinois.

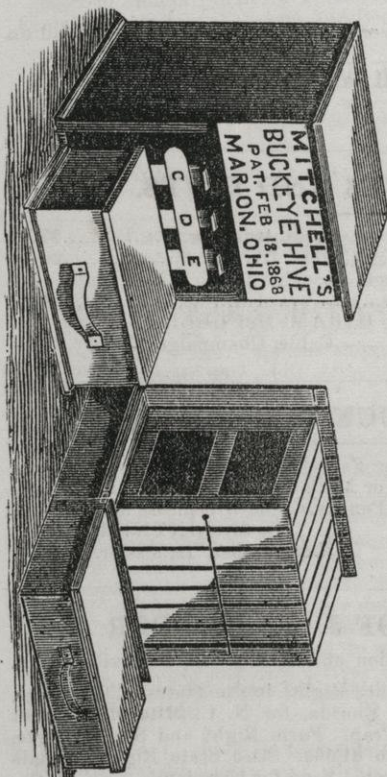
ITALIAN QUEEN BEES.

Purity and safe arrival guaranteed. Circular free. Address,
G. H. BOUGHTON,
Illioopolis, Illinois.

TESTED ITALIAN QUEENS.

Shipped to May 15, \$8.00; shipped to May 31, \$7.00; shipped after June 1, \$6.00. Safe arrival guaranteed. Circular sent free.
Address

R. M. ARGO,
Lowell, Garrard County, Ky.



Patented February 18, 1868.

MITCHELL'S BUCKEYE BEE-HIVE.

Persons desirous of purchasing

FARM,
Township or County Rights
For Mitchell's

BUCKEYE BEE-HIVE

AND MOTH TRAP,

Or procure
Italian Bees or Sample Hives
In the

STATE OF MICHIGAN,

Will please address

DAVID CADY,
Indianapolis, Ind.

The North Western Farmer.

A SUPERB MAGAZINE OF RURAL LIFE.

Devoted to Agriculture, Horticulture, Rural Economy, Home Culture,
and Family Reading.

ITS OBJECTS: The Education of the Working Classes, and Promotion of Rural Interests.

ITS MOTTO: Educated Labor the Hope of the World.

This Magazine is Royal Quarto in form, and containing twenty-four three-column pages to the number. It is beautifully illustrated, printed on fine book paper, and bound in tinted covers.

TERMS.—Only \$1.50 a year. Each new subscriber gets a copy of the Farmer's Annual and Rural Companion for 1869 (price 25 cents) free; also, two or three extra numbers of the FARMER gratis. Now is the time to subscribe and make up clubs. Sample copies sent free.

Address,

NORTH WESTERN FARMER CO.,
Indianapolis, Indiana.

BUCKEYE BEE-HIVE,

Manufactured and sold at Des Moines, Iowa.

Bee-keepers residing in the State of Iowa wanting to purchase farm or county rights, for the use of the well known Buckeye Bee-hive, should address

JACOB KLINGENSMITH,

P. O. Box 654, Des Moines, Iowa.

BUCKEYE BEE-HIVES FOR SALE IN OHIO.

John Miller, of Pierce, Stark County, Ohio, has purchased the Counties of Cuyhoga, Medina, Portage, Stark, Summit, Tuscarawas. Bee keepers in these counties would do well to address as above, or address,

REV. ELI MILLER,

Canton, Stark County, Ohio,

FOR SALE.

The genuine Alsike Clover Seed—80 cents per pound by Mail, or 65 cents by express, where ten pounds or more are ordered at one time.

Address,

COL. JOSEPH LEFFEL,

Springfield, Ohio.

P. S.—Send for my Poultry Circulars of all kinds of Pure Breeds of Poultry.

COL. JOSEPH LEFFEL.

BROCKLESBY'S COMBINED HAND TRUCK,

FOR SACKING GRAIN AND MOVING THE SAME.

A Great labor Saving Machine. Patented April 13, 1869.



The above is a convenience that every Farmer, Miller, and Warehouseman should have; it saves a hand for holding sacks, besides the convenience of having the sack already on the Truck for conveying to the place desired. The above cut shows two positions—one with adjustable braces and foot-board, which may be used to advantage when in a stationary position, such as sacking grain from a threshing machine, &c.; the other stands without the aid of braces, and is more convenient when it is desired to sack and convey grain from one part of a barn (or other building) to another. It will be readily seen that the braces and foot-board fold up in such a position as not to interfere with the working of the machine. Every person that has grain to handle should have one, and would, if they knew the convenience of them, and the amount of hard lifting they save. A Farmer can sack and load up his wagon with grain without ever lifting a sack, by merely having a plank from the granary door to the wagon.

The Truck can be used for conveying other heavy substances if desired—the hopper and braces being adjustable can easily be removed. This invention is highly commended wherever introduced. The undersigned has for sale the whole United States, except a few counties in Ohio, which are disposed of. Territory sold very low. A Model furnished to each purchaser. For further information, address

WM. BROCKLESBY, JUN.,
Caledonia, Marion County, Ohio.

ADAIR'S SECTION BEE-HIVE.

PATENTED AUGUST 27, 1867.

Frames close fitting and forming a hive of themselves, that can be handled like a solid box, and shipped any distance. No unnecessary draft of air through the hive, as in open side frames. No surplus room around the frames to be occupied by idle bees. Can be enlarged or contracted at will in a few minutes. Is the most perfect queen nursery; as the brood chamber can be broken up into NUCLEI of any size, and reformed when desired. It can be arranged so that queens can be fertilized without leaving the hive. Several queens can be kept in the same hive during the winter, and it is believed it can be done all the year, so that each hive may have the services of one or more queens. It needs no winter protection; but if housing is preferred, four times as many can be stowed away in the same space that other hives occupy. Box room unlimited. Supers or laterals, or both, can be used. It is a perfect observing hive. Bees can be fed in it, in the center of the cluster, in any weather, without disturbing them, with both meal and honey; and brooding kept up all the year. It can be built of wood, stone, brick, adobe, concrete, lath and plaster, paper, straw, iron, and other materials.

The "OUTLINES OF BEE CULTURE," which gives full description, with illustrations, and much other valuable information, sent for ten cents.

Rights and territory for sale. Competent agents wanted on liberal terms. Send for circulars and terms to agents. Rights free to ministers of the gospel who buy a sample hive. D. L. ADAIR,
Hawesville, Kentucky.

ITALIAN QUEEN BEES

From Mothers, directly from the highlands of Italy, and purely fertilized. Safe arrival guaranteed. Also, small swarms to build up or raise queens.

Address, A. SALESBURY,
Camarge, Illinois.

ITALIAN QUEEN BEES.

Queen shipped in June, for \$2.50; after July 1st, three for \$7, or five for \$10. Queens sent by express. Purity and safe arrival guaranteed. Send stamp for Circular.

Address, H. ALLEY,
Wenham, Essex County, Mass.

Speciality of Importing Queen Bees exclusively from Upper Italy.

For one Queen in May, \$14; in June, \$13; in July, \$12; in August, \$11; in September, \$8 to \$10. The money to be remitted in the month previous to the date fixed for the reception. The Queen will be sent from here *genuine*, and safe arrival guaranteed.

CHAS. DADANT, Hamilton, Illinois.

PRICE OF BEES AND QUEENS, FOR THE YEAR 1870.

Full Colonies of Italian Bees, with tested pure Queens of last summer's raising, in a Langstroth movable comb, full of comb, and honey enough to last until May 20th, I will deliver at the express office at Jefferson station, for \$15 each.

6 colonies for \$14 each; 10 colonies for \$135; 20 colonies for \$250; above 20 at \$12 each; any number above 50 \$11 each.

I will sell 100 colonies for \$1000.

Parties that wanted such a large number of stocks, would have to order them under their own risk, and would do well to oversee transportation.

Italian Queen Bees, whose worker progeny has hatched in my Apiary, and shows by its marking that they have met with an Italian drone I, will sell at the following prices:

If sent from April 20th to May 5th, \$8; May 5th to June 1st, \$7; during the month of June, \$6; during the months of July, August and September, for \$4. If from 10 to 20 queens are ordered, a reduction of 10 per cent. will be made; if above 20, a reduction of 20 per cent.

All queens will be sent by mail post-paid. The box or boxes in which the queens are sent must be opened in presence of the Post Master or another witness, and a certificate from one of them must be sent by return mail. If one or more of the queens should have died during shipment, on receipt of this certificate from the Post Master or other witness, another queen will be sent or the money refunded.

Young Swarms of Italian Bees, medium sized with a tested pure Queen of last summer's raising, sent in a common shipping box, with feed enough to stand the journey, if sent before June 25th, will be sent for \$9; between June 25th and July 10th, for \$8; from July 10th to August 1st, for \$7; and after that time for \$6. If a colony with a queen reared from an imported one, or queens of that kind are ordered, one dollar extra will be charged. Express charges to be paid by purchaser.

In some cases, where claims are made on account of losses incurred during shipment, I will demand an affidavit setting forth the facts in the case before I will satisfy the claims.

Safe arrival and purity guaranteed in every shipment. The cash must accompany every order or it will not be noticed.

Jefferson, Wis., February 1st, 1870.

ADAM GRIMM.

ITALIAN QUEEN BEES FOR 1870.

In order to prevent too close breeding, I made two importations of Italian queens last fall—one importation from the celebrated apiary of Dzierzon, the other from Italy. Queens from these importations, at the usual orders. Those wishing queens will do well to patronize my apiary, both for pure queens and promptness in filling orders. Send for Circular.

Riley, Butler County, Ohio, April 1, 1870.

A. GRAY.

QUEENS AND ITALIAN BEES.

Queens reared from queens imported from Italy. Also stocks of Italian Bees for sale. All orders promptly filled. Purity of stock guaranteed. Send for Price List. Address, J. WHEELDON,
Greensburg, Ind.

INDIANAPOLIS, CINCINNATI & LAFAYETTE RAILROAD.

THE GREAT THROUGH EXPRESS AND MAIL ROUTE

From Indianapolis to and from all points East and West.

CINCINNATI TRAIN.—Three Trains Daily from the Union Depot for Cincinnati, and connecting at Cincinnati with all the Great Eastern and Southern Railroad Lines and the Ohio Steamers.

LAFAYETTE AND CHICAGO TRAINS.—Two Through Express Trains Daily for Chicago, with the most direct connections in Chicago to and from all points in the North-West.

LAFAYETTE, QUINCY & ST. JOSEPH TRAINS.—Two Through Trains Daily, via Lafayette for and from Springfield, Quincy, Keokuk, St. Joseph, and all points in Iowa, Kansas, Nebraska and the Gold Regions.

CINCINNATI DIVISION.

Trains Leave Indianapolis.

Trains Arrive at Indianapolis.

Express	4:00 a. m.	Express	2:10 a. m.
Mail	11:50 a. m.	Mail	11:30 m.
Express	7:30 p. m.	Chicago Express.....	7:05 p. m.

LAFAYETTE DIVISION.

Toledo and Quincy Accom	4:10 a. m.	Chicago Express	2:50 a. m.
Chicago Mail.....	11:50 m.	Toledo and Quincy Express.....	11:30 a. m.
Chicago and Quincy Ex.....	7:50 p. m.	Chicago Mail	7:05 p. m.

MARTINSVILLE DIVISION.

Accom.....	1:50 p. m.	Accom.....	9:50 a. m.
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Terre Haute & Indianapolis Railroad.

FOUR PASSENGER TRAINS DAILY EACH WAY,

BETWEEN

TERRE HAUTE AND INDIANAPOLIS,

Making close connections at Indianapolis with

Trains for Boston, New York City, Philadelphia,

BALTIMORE, WASHINGTON CITY, CINCINNATI, LOUISVILLE,

And at Terre Haute with Trains for

ST. LOUIS, CAIRO, VINCENNES, EVANSVILLE,

And all points West, South-West and North-West.

Trains Leave Indianapolis.

Trains Arrive at Indianapolis.

Fast Line Express.....	3:05 a. m.	Fast Line.....	3:50 a. m.
St. Louis Express.....	12:00 m.	Mail and Express.....	9:25 a. m.
Ev. and Cairo Ex.....	2:55 p. m.	Accommodation.....	6:10 p. m.
Night Express.....	7:20 p. m.	N. Y. Express.....	6:45 p. m.

PITTSBURG, CINCINNATI & ST. LOUIS RAILROAD.

Trains Leave Indianapolis.

Trains Arrive at Indianapolis.

Day Express	4:05 a. m.	Western Express.....	2:20 a. m.
Mail Express.....	9:40 p. m.	Richmond Accom	11:15 a. m.
Night Express	7:20 p. m.	Day Express	4:15 p. m.
Sunday Express.....	7:20 p. m.	Sunday Express.....	2:20 a. m.

INDIANAPOLIS, PERU & CHICAGO RAILROAD.

Trains Leave Indianapolis.

Trains Arrive at Indianapolis.

Toledo Express.....	1:35 a. m.	Chicago Express.....	5:40 a. m.
Mail & Chicago Express.....	12:50 p. m.	Mail and Tol. Express	9:20 a. m.
Chicago and Tol. Express.....	8:00 p. m.	Chicago Express	5:00 p. m.

Cleveland, Columbus, Cincinnati & Indianapolis RAILWAY COMPANY,

(Formerly Cleveland, Columbus & Cincinnati Railroad, and Bellefontaine Railway)

GOING EAST THEY RUN

Three Express Trains Daily from Indianapolis.

Over the "Bee Line," on arrival of trains from Louisville, Evansville, Lafayette and St. Louis.

Direct Connection at Crestline with the Pittsburg, Fort Wayne & Chicago Railway, to Pittsburg, and through that line with the Pennsylvania Central Route, to Harrisburg, Baltimore, Washington, Philadelphia, Allentown, New York, etc.

Each and every train also has direct Connection at Cleveland with the Lake Shore Railway, to Erie, Dunkirk, Buffalo and Niagara Falls, and through that line with the New York Central and Erie Railway Routes, to Albany, Troy, Springfield, Worcester, Boston, Providence, Elmira, Great Bend, New York, etc.

Trains Leave Indianapolis.

Fast Express.....	11:25 a. m.
Accommodation	7:45 a. m.
Eastern Express.....	4:20 a. m.
Night Express	7:30 p. m.

Trains Arrive at Indianapolis

Western Express.....	2:30 a. m.
Night Express.....	6:40 a. m.
Accommodation.....	3:20 p. m.
Day Express	5:55 p. m.

Jeffersonville, Madison & Indianapolis RAILROAD.

Direct Route to LOUISVILLE, NASHVILLE, CHATTANOOGA,

MEMPHIS, MOBILE, AND NEW ORLEANS,

AND ALL POINTS SOUTH & SOUTHWEST.

Three Trains Daily, Morning, Evening and Night.

Trains Leave Indianapolis.

Jeff. and Mad. Exp.....	3:55 a. m.
Seymour Accommodation.....	5:00 p. m.
Jeff. and Mad. Mail.....	7:15 a. m.
Express.....	7:15 p. m.
Sunday Train.....	7:15 a. m.

Trains Arrive at Indianapolis.

Night Express	3:00 a. m.
Seymour Accommodation	9:30 a. m.
Jeff. and Mad. Mail.....	11:25 a. m.
Jeff. Mad. and Chic. Ex.....	7:05 p. m.
Sunday Train.....	7:05 p. m.

Cincinnati, Connersville & Indianapolis JUNCTION RAILROAD, VIA RUSHVILLE, CONNERSVILLE, OXFORD & HAMILTON, TO AND FROM CINCINNATI.

This Road is completed from Rushville to Indianapolis, running

Two Passenger Trains each way every Day,

BETWEEN CINCINNATI AND INDIANAPOLIS.

Trains Leave Indianapolis.

6:45 a. m.....	Morning Express.....
2:05 p. m.....	Accommodation.....
3:45 p. m.....	Mail
2:05 p. m.....	Rushville Accom.....

Trains Arrive at Indianapolis.

8:45 a. m.....
1:15 noon.....
11:15 p. m.....
8:45 a. m.....

MINER'S WEEKLY.

A New Illustrated New York Paper.

Six months for one dollar and a Splendid DOLLAR ENGRAVING FREE!—less in clubs.—To appear June 20th.—*Histories, Travels, Adventures, Tales, etc.*—No trashy matter.—To be sold by news dealers at four cents!—Will open with *Thrilling Travels in Africa*.—*Splendid Engravings*.—No other Weekly like it.—A delightful paper for young and old.—*Magnificent Premiums* to Club Agents, who are wanted every where.—Ladies can obtain an elegant *Gold Watch*, or other valuable article, by acting as agents.—Boys and girls can have the paper *free* one year, or any *dollar book*, for one or two hours' work in obtaining subscribers.—We publish that old, popular Agricultural paper the RURAL AMERICAN—the best in the United States—Will send it to Jan., 1871, for only *two* subscribers to the new WEEKLY! Sample of Weekly and Premium list *free* to all who will get up clubs.—Five cents to others, or two stamps. Editorial Office at New Brunswick, New Jersey, where all letters must be addressed.

T. B. MINER & CO.

ITALIAN QUEEN BEES.

My customers are hereby reminded that I have removed from Walpole, N. H., to this place, where I shall continue to raise Queen Bees at moderate prices. Spring commences very early here, giving me an advantage of several weeks over my former location. I send by mail, having sent hundreds in that way. Satisfaction given. For Circulars address,

J. L. HUBBARD,
Bricksburg, New Jersey.

STILL AHEAD.

The "*Jolly Young American*" is the best, neatest and spiciest paper out. Chuck full of jolly stories, jokes, sketches, poetry, witty sayings, matrimonial and spicy advertisements; in fact everything jolly. Subscribe and sleep well of nights. No humbug. Established 1867. Only 16 cents a year. Ten copies with a 20 picture Photograph Album as a premium for \$1. Specimens for stamp. Address "The Jolly Young American, Wadsworth, Ohio."

PEABODY'S HONEY EXTRACTOR.

Send to J. L. Peabody, Virden, Illinois, for circulars. Extractors sent on short notice. Expressage low. Weight of machine, only 40 pounds, all packed ready to ship.

THE ILLUSTRATED BEE JOURNAL.

RATES OF ADVERTISING.

One square, ten lines, one month.....	\$ 1 00
One square, ten lines, two months.....	2 00
One square, ten lines, three months.....	3 00
One square, ten lines, six months.....	6 00
One square, ten lines, twelve months.....	10 00
One-fourth page, one month.....	5 00
One-fourth page, two months.....	10 00
One-fourth page, three months.....	15 00
One-fourth page, six months.....	25 00
One-fourth page, twelve months.....	35 00
One-half page, one month.....	8 00
One-half page, two months.....	15 00
One-half page, three months.....	20 00
One-half page, six months.....	35 00
One-half page, twelve months.....	60 00
One page, one month.....	15 00
One page, two months.....	25 00
One page, three months.....	35 00
One page, six months.....	60 00
One page, twelve months.....	100 00

Advertisements on cover pages will be charged double rates.

Names of Parties Owning Territory for the Buckeye Bee-Hive.

Any one wanting to use or purchase territory in the following named States, should address the owners as follows:

- Southern Indiana, Robert Dunavan, Indianapolis.
- Missouri, D. H. Chase, St. Louis, Mo.
- Kansas, William Barnes, Topeka, Kansas.
- Michigan, David Cady, Indianapolis.
- Iowa, Simon Klingensmith, Indianapolis.
- Kentucky, D. B. Helm, Antioch, Ind.
- Pennsylvania, D. H. Lintner, Lancaster, Pa.
- Alabama and Georgia, H. J. Shirk & W. W. Constant, Peru, Ind.
- Wisconsin, Minnesota and Nebraska, Joshua Webb & James Calvert, Indianapolis, Ind.
- Virginia, U. P. Fobes, Peru, Ind, or D. B. Helm, Antioch, Ind.
- Tennessee, Florida, and North and South Carolina, J. H. Cropper, Nashville, Tennessee.
- Texas, J. M. Hicks, Indianapolis.
- Massachusetts, E. H. Barber, Indianapolis.
- Arkansas, W. A. Scofield, Indianapolis.
- Louisiana and Mississippi, W. W. Constant, Peru, Ind.
- New Jersey, H. J. Shirk, Peru, Ind.
- West Virginia and Maryland, District of Columbia, and the two south counties in Delaware, U. P. Forbes, Peru, Ind.
- Illinois and Ohio, Wm. T. Gibson. See his card on inside of back cover.

50 Papers and 25 Magazines at Club Rates for Single Subscriptions.



1000 bushels Norway Oats: We are Ramsdell's General Agents.
500 bushels Surprise Oats: These Oats weigh 45 lbs. per bushel.
200 bushels Alsike Clover Seed: Western Grown and Imported.
50 bushels Early Rose Potatoes: From D. S. Heffron's stock.
100 Honey Extractors; *Wood or Metal*: New styles for 1870.
750 Colonies Italian Bees in Langstroth Hives.
1000 Langstroth Hives: Improved for 1870.

Descriptive Catalogue, Illustrated, 10 cents. Price lists free; SECOND EDITION, Illustrated, just issued. Write for it as soon as you read this, then you won't forget it!

Address,

NATIONAL BEE-HIVE CO., St. Charles, Ill.

Read what is said of

THE FARMER'S GAZETTE AND INDUSTRIAL INDEX!

FARMERS, ATTENTION!—The Richmond Whig asks, "Are you subscribers to the Farmer's Gazette, published by S. Bassett French, Richmond, Va., for one dollar per annum?" and adds, "It is beyond doubt the very best Agricultural monthly published for one dollar in America. Try it one year." A correspondent from Dauphin, Pa., says: "I think your Gazette is not only equal but superior to anything of the kind, North or South."

ILLINOIS AND OHIO.

BUCKEYE BEE-HIVE AND MOTH TRAP.

WM. T. GIBSON, an old and reliable resident of the city of Indianapolis, has purchased of myself and others the entire right of my "Buckeye Bee-Hive and Moth Trap" in the following counties in the States of Illinois and Ohio:—

ILLINOIS—Alexander, Bond, Boon, Brown, Bureau, Calhoun, Carroll, Cass, Christian, Cook, Clark, Clay, Coles, Crawford, Cumberland, De Kalb, Du Page, DeWitt, Douglas, Edgar, Effingham, Edwards, Gallatin, Green, Grundy, Hamilton, Henderson, Hardin, Jasper, Jersey, Jo. Daviess, Johnson, Kane, Kendall, LaSalle, Lawrence, Lake, Lee, Livingston, Logan, McHenry, Macoupin, Marshall, Mason, Massac, Menard, Mercer, Marion, Montgomery, Moultry, Ogle, Peoria, Piatt, Pike, Pope, Pulaski, Putnam, Richland, Rock Island, Sangamon, Schuyler, Shelby, Stark, Stephenson, Saline, Scott, Tazewell, Union, Vermillion, Wabash, Wayne, White, Will, Whiteside, Winebago and Woodford.

OHIO—Adams, Ashland, Ashtabula, Athens, Clark, Clinton, Darke, Delaware, Fayette, Gallia, Geauga, Green, Highland, Hocking, Jackson, Lake, Lawrence, Madison, Mahoning, Meigs, Morgan, Noble, Pike, Sciota, Vinton and Washington.

Persons wishing to purchase County, Township or Farm Rights, procure model or ordinary Hives, or gain information relative to bees in the above named counties, will do well to address,

WM. T. GIBSON,

5 Odd Fellows Hall, Indianapolis, Ind.

FOUR MONTHS FREE OF The Bee-Keepers' Journal and National Agriculturist.



It is a large Illustrated, double quarto, eight page paper, containing five different Departments, viz: Bee-Keeping, Agriculture, Home and Fireside, Ladies' and Youths' Departments, making it the cheapest and the best family paper in America, for only \$1 a year. One sample copy **Sent Free** to every applicant and to all enterprising Bee-Keepers. Address

H. A. KING & CO., 240 Broadway, N. Y.

EARLY ITALIAN QUEENS.

The advantage of climate enables me to furnish *Italian Queen Bees* much earlier in the season than parties further north can do. My early raised queens will supply any deficiency in drone brood, and if introduced in colonies of black bees before preparations are made for swarming, will, without doubt, supply drone brood for that purpose in proper season.

PRICE. Queens from first of May to first of July, \$5 each. Purity and safe arrival guaranteed.

DR. W. McK. DOUGAN,
Randolph Co., N. C.

ITALIAN QUEEN BEES.

Italian Queen Bees taken from full colonies. Purity and safe arrival guaranteed to all parts of the country, sent by mail or express.

A premium sent free to every customer. Send in your orders early, as my list is rapidly filling up. No money required until queens are ready for shipment. Send for Circular. Address, HENRY NESBIT,
Cynthiana, Kentucky.

I NDIANAPOLIS, CINCINNATI & LAFAYETTE RAILROAD. E

CHANGE OF TIME!

On and after Monday next, February 21, trains on the above line will leave and arrive at the Union Depot, as follows:

Trains Leave.

Trains Arrive.

CINCINNATI DIVISION.

Express.....	4:00 A. M.	Express.....	2:10 A. M.
Mail.....	11:50 A. M.	Mail.....	11:30 A. M.
Express.....	7:30 P. M.	Chicago Express	7:05 P. M.

LAFAYETTE DIVISION.

Toledo and Quincy Accom.....	4:10 A. M.	Chicago Express.....	2:50 A. M.
Chicago Mail.....	11:50 A. M.	Toledo and Quincy Ex.....	11:30 A. M.
Chicago and Quincy Ex.....	7:50 P. M.	Chicago Mail.....	7:05 P. M.

MARTINSVILLE DIVISION.

Accom	1:50 P. M.	Accom	9:50 A. M.
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W. H. L. NOBLE, Gen'l Agent.

A. E. CLARK, Gen'l Ticket Agent.