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Vol. V.

No. 2.

NATIONAL

BEE JOURNAL



A MONTHLY MAGAZINE,
DEVOTED EXCLUSIVELY TO BEE CULTURE.

EDITOR & PROPRIETOR
MRS. ELLEN S. TUPPER,
DES MOINES, IOWA.

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FEBRUARY, 1874.

DES MOINES, IOWA:

HOMESTEAD AND WESTERN FARM JOURNAL PRINT,
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NATIONAL BEE JOURNAL

DEVOTED EXCLUSIVELY TO BEE CULTURE.

VOL. V.

FEBRUARY, 1874.

No. II.



Correspondents are especially requested to write on one side of the sheet only. Many of our readers doubtless have valuable practical ideas on bee culture, who feel incompetent to write for the public press. Send them to us in your own way, and we will "fix them up" for publication.

THE DISASTERS OF THE PAST WINTER.

I agree fully with you and with Mr. Quinby in regard to the loss of bees experienced by the bee-keeping community these two last winters, but cannot see any disease in that mortality. Permit me to relate here my views on the matter:

In the summer of 1871, bees had too much honey in their hives, and the queens had been for months unable to find empty cells to lay a quantity of eggs sufficient to replace the loss of bees dying in the fields. The result was that when honey became abundant in September, the population of the hives, being mostly old bees, *i. e.*, gatherers, dwindled away very fast; the more so as the cold of the evenings kills always a considerable number of bees in the fields. The next result was that the honey gathered late in the fall remained unevaporated and unsealed, for there was too small a number of workers to raise the heat of the hives to a sufficient degree for such evaporation.

Now, I think that nobody will con-

tend that the unevaporated honey gives the dysentery, unless the bee, cannot go out of the hives to empty their intestines.

In a small book on bees, published in France, a few years ago, the Rev. Father Bolay relates that, having fed bees outside of the hives with sugar and water, in the ratio of twice as much water as sugar, he saw his bees discharge a small shower of water between their hives and the spot where the food was given. This fact shows conclusively that, if the bees had been unable to go outside of their hive after sucking their feed, they would have suffered in keeping that water for a long time in their intestines.

It is, therefore, unsafe to feed bees in winter with sugar more diluted than is necessary to melt it. The convenient proportion is two pounds of sugar for one pound of water, and not two measures of sugar for one of water as I have read lately in one of our bee papers; for one pail of water weighs sixteen pounds, while the same pail of sugar weighs but ten pounds.

Such is my understanding of the mortality of bees in the winter of 1871-2. The proof that I am correct is found in the fact that bees died in cellars and rooms as much as on their summer stands. On the other side, every bee-keeper has noticed that the unsealed honey was more abundant than fall than it was generally the preceding year.

Let us, then, set down the unevap-

orated and unsealed honey as a first cause of mortality.

But the bee-keepers who contend that there was a disease oppose that bees were going out of the hive unable to fly, and to discharge their foeces. Such was the case, indeed; but that is not a symptom of dysentery. I have noticed the same accident in three colonies of my apiary this fall.

On account of the scarcity of honey, I have fed some fifty colonies this fall. It was a heavy disbursement, and I delayed it as much as it was safe, hoping to see my bees gather something in the last flowers. The stock that received the syrup last were slow to bring it down to the comb on account of the cold at nights. Every bee-keeper knows that feeding induces the bees to go out in search of honey. When the weather is warm, there is little inconvenience, but in October the nights are cold and the weather very inconstant. Therefore, many bees that started from the hives did not return, and the stocks fed were greatly diminished in population. One day I saw in front of a hive many bees with the abdomen very much distended. They were unable to fly, and crawled everywhere around the hive. I opened that hive. The queen was nearly alone; the bees had gone out one after another. While I was inspecting this case the queen took wing and did not return.

Two more colonies did the same a few days after. I am sure that they had enough bees to winter before I gave them the sugar syrups; and it is evident to me that the bees perished on account of my late feeding, which stimulated them to go in the fields, where they wearied and numbed themselves to death. Then, during the first cold nights the few remaining bees produced the heat necessary to their life by over-eating; and, as soon as the weather became milder, they hurried out of the hive. But the weather was too cold for them to discharge their foeces, and they perished before the

hive. I know that such is the case, for having taken several of them in my hands I saw them fly as soon as they were warmed; consequently, there was no disease in these bees, and their inability to fly came only from the cold of their hive.

The same mortality that I have produced in feeding my bees on their stands late in the season can be produced also by natural causes. The summer of 1871 had been very dry. The bees remained idle here from July 15th to September 1st, and the queens did not lay of any account for these six weeks. Of course, nearly all the bees in the hive were old, and when the fields offered plenty of honey in September, as was the case that year, all or nearly all, the bees, being no longer nurses but honey-gatherers, the hives were soon full of honey; but the queen having only a few empty cells the brood was too scarce to replace the old bees, perishing by hundreds every day. When the crop of honey ended there were very few old bees left, and few young bees. Yet these bees could not find room to gather together *en masse*, as it is usual, the comb being too full; and all those outside the main group perished; the others eating unevaporated honey in great quantity to keep warm were soon in the same fix as those that I had killed by feeding late. Then the bee-keeper, seeing his bees dying in front of the hive, was ready to call that unusual mortality a bee disease.

The only means that I can imagine to prevent such a danger is to see that there is room enough in the hives in August, and to feed the bees, in order to have the queen laying regularly.

Last year the causes of mortality were not similar. The bees had little unsealed honey. They were strong in numbers, but the winter came very soon, and ended late. Every year in the last fortnight of November, I put dry leaves inside of my hives. All

my hives have double walls for outdoor wintering, and I leave them on their summer stands. Last year it was impossible to open the hives between the 16th of November and the 8th of December, on account of the cold and bad weather. On the 8th of December, and the following day, I hurried to fill the dead spaces with leaves. Many stocks had already lost plenty of bees, but they were yet strong, and I was pretty sure that nearly all would come out in spring in good health. From the 9th of December till the 16th of January there was not one day in which one could see the snow melt in the sun. On the 25th of December the thermometer marked 32°. That awful cold would have made very little havoc in the hives if the following days had been warm; but the twenty days which followed were regularly cold, and the bees were unable to move. On the 16th of January I examined several hives. The bees were greatly diminished in numbers; several colonies had the dysentery, and I found that I had but one stock dead out of 180.

There was snow one foot deep on the ground, and all the bees that alighted on it perished. I saw some dead bees as far as five hundred yards from the hives. Many stocks—probably the most reduced in number—did not take advantage of the two days of that relatively warm weather; yet they were alive, and I did not disturb them, hoping to see a succession of warm days, and fearing to see them perish on the snow. But my hopes were far from being realized; for the cold came back worse than before. On the night of January 28th the thermometer descended to 35°, and, as before, a succession of cold days followed.

Then I discovered that all the stocks that had not flown were dead, and how many of the others were sick with dysentery?

When I opened them I saw in many hives a small ball of bees squatted in a corner, far from their brood—for

there was brood in many hives. Furthermore, I saw dead brood in two different places in some hives. That proves that these stocks had brood killed by the dreadful cold of December 25th and January 28th.

In March, when I made my full account, there were nearly fifty stocks dead, about 25 per cent. of the whole number.

There was no disease but cold—a frightful cold which penetrated the hives in spite of my double walls, well filled with leaves; in spite of the warmth produced by living bees, and which chased them far from their brood.

“But there was disease,” say some; “for many bee-keepers who had put their hives in winter repositories fared the same fate as you, and even worse.”

In order to get the bees through winter in cellars, or in houses expressly constructed for that purpose, it is absolutely necessary to maintain in the repository a temperature of several degrees above the freezing point. But the last winter was so cold that the best protected hives were penetrated by the cold. It is quite probable that during the coldest nights the bees suffered with cold in their repositories, and that the bee-owners were not aware of the fact; for the bees, in eating more, had, in a few days, raised the temperature above the freezing point. But it was at the expense of their health.

Yet, if the stocks had been put out of their winter quarters a few days after each of these two extreme colds, I am convinced that the bees would have had no dysentery. That remedy was impossible here; for, between the 9th of December and the 15th of February, we had but two days warm enough to melt the snow. Therefore, we are bound to look after a better plan to ward ourselves against a similar loss. That plan is to take great precautions in building our winter depositories. Instead of eight inches of straw or sawdust, let us put

at least one foot, and also proportionate the size of the building to the number of colonies, their population, etc.

I conclude by saying that it is not necessary to look for a bee disease in the losses of these two winters; for we can prevent it, and protect our bees against a return of similar accidents.

CH. DADANT.

Hamilton, Ill.

EXPERIENCE WITH THE BEE DISEASE.

MRS. TUPPER:—As I have been a reader of bee journals for several years, and a bee-keeper twice as long, will you give me space in your most valuable journal for a few words?

In the first place, I have seen so much speculation and theory on this vexed question by our great lights, that I presume some of your readers will wonder at the boldness of a common farmer. Doubtless some will say, "How dare you, when you know every word will be seen by 'Novice;'" and, bless my soul, he has told us how to keep them safe so often?" He says in the fall of 1872 the honey was black, thick, and of very poor quality, but don't say where. Now, Friend "Novice," in that same fall there was the greatest fall honey harvest in these parts ever known. Hives crammed so full that I had to use the honey-slinger every other day for about three weeks. This honey was gathered from golden rod, fire-weed, and many other fall flowers that abound here, but positively no honey dew. My hives were very populous the 1st of October, and had the most brood I ever have seen for that time of year; yet every hive that I left on summer stands well protected I found dead in the spring, while all that I had buried out of the reach of frost came out in splendid condition. Now, I want to know how many of your readers remember the smoky fall of 1856, which killed the fish in our lakes and rivers, and many cattle were suffocated with smoke in

this part; and you remember the cold winter following. Well, good friends, there were hardly bees enough left here for seed the next spring; but, luckily, the next winter was a very mild one, giving bees a chance to fly often, which brought them out all right. If this winter continues warm, and we get an early spring, and our bees are all alive next spring, who will be the first to say, "Bless my soul! I knew it would be just so; all we wanted was a mild winter and an early spring to put a stop to such work."

H. M. R.

Monteal Co., Mich.

HINTS FOR BEE-KEEPERS.

Well, I have not yet seen the December number (December 27, 1873). The November number is—well, the old proverb says that "speech is siilver, but silence is golden;" so, I send gold.

Bee-keepers should in January examine all their bees, and those that are queenless should be united with those having queens, and then commence feeding slightly, to make them commence breeding by February 1st. No odds if they have plenty of honey; use the extractor a little, and then give it back to them. Remember that November and December are the two fatal months on queens.

In looking for your queens, first look among the dead bees on the bottom board; look very carefully. Failing to find her there, you may conclude that she is in the cluster above, all right, and act accordingly until you find out differently, which you can easily do by a few days' feeding in a warm room. Failing then to find queen or eggs, and not yet satisfied that your queen is gone, give them some brood and eggs from some other colony, and if there is no queen, the bees will start queen cells. But don't understand me to say that to find queen cells in the winter is always a sign of queenlessness. I have two colonies now that will persist in building queen cells, yet they have good,

fertile queens. There is one sure sign of queenlessness, and that is *fertile workers*.

Sometimes bees are induced to build queen cells in winter by not having winter passages through the combs. The cluster becomes divided, although just one comb between, and the queen may be on the opposite side; yet, for want of a passage, they cannot communicate with her, and suppose they are queenless, and will try to raise another, which they sometimes do from eggs found in the comb. I have known eggs to remain in the cluster for two months, (December and January), and then hatch. And right here let me ask bee-keepers, How comes it that a queen may lay hundreds of eggs, and yet they will remain in the cells so long, and will not hatch until the workers are ready for them? It is a mystery to me that I have been unable to unravel. What process do the bees put them through to prevent hatching, and what process then to hatch them? Simple warmth will not do it — then, what is it that hatches the eggs? The habits of the bee in winter quarters are just as deep a study to me as they are on their summer stands, although not quite so profitable.

One more question: Bee-keepers, how comes it that a queen will raise three-banded workers part or all of the first season, and then after that raise blacks, or else hybrids? A queen that was raised by pure Italian workers I never saw do it, while a queen raised by black nurses will sometimes raise blacks. After the first season, there was no supercedure, or I would have discovered it, (or the queen was hatched with wings already clipped). Cannot this be traced to the hatching of the eggs?

In using the extractor, if the honey harvest is good, extract every day, but never extract the comb on which you find the queen; if you do, you will endanger her life.

I find cold water far more prefera-

able to put the knives in than hot; the knife does not then heat the edges of the cells. Of course, the water gets very sweet. Well, pour it into the vinegar, or place in shallow pans, and set it in front or in the top of your hives, and let the bees have it. Do not turn only fast enough to throw the honey out. If you do turn faster, you will throw out young brood. I always give what remains in the strainer to the bees; for if there should be any living brood, the bees will take care of it,—provided that honey is plenty in the field; though don't understand me to say that they will always take care of broods. Queenless stocks are better for that purpose than others. It must be put on top of the frames, for I never had them carry brood into the hive. How long brood will live out of the cell, I don't know. For every hour, or oftener, I would empty the strainer and put it down on top of the frames. HARRY GOODLANDER.

Leesburg, Ind.

NOTES FROM MINNESOTA.

MRS. TUPPER:—We received a copy of your valuable BEE JOURNAL a short time since, and are very much pleased with it. If the times are not too hard, we will try and get up a club for you.

In reading the different experiences of bee-keepers in your JOURNAL, the thought occurred to us that we might give our experience, too. Perhaps it might benefit somebody, and, if it did not, there would be no harm done.

There are quite a number of bee-keepers in this vicinity, and most of them have had very good success so far.

We commenced keeping bees one year ago last spring. We knew nothing about it except what we had learned from the text-books. The season was a good one. We had no natural swarms, but from three we increased to ten, and got 160 pounds of honey, mostly from the three old swarms. When winter set in, the

hives were all heavy with honey, and had plenty of young bees. We did not put them in the cellar until after three days of severe cold weather; consequently the combs and inside of the hives were covered with frost. We removed the honey-boards, (they were in the American hives), and left the entrances the same as during the summer. The thermometer, the most of the time, ranged from 20° to 28° above zero. We had many vegetables in the cellar, and frequently went to our bees with a light, to see how they were getting along. They all wintered well, and there was but little moldy comb. From the 26th of October to the 1st of April our smallest swarm had eaten eight pounds of honey, and our largest fifteen pounds. When we set them out, the 1st of April, they all had brood in all stages, except one that was queenless. We did not hear of any bees dying in this vicinity last winter of dysentery.

Now, some writers claim that we must put each hive on its own stand, when we put them out in the spring. Well, we put ours out on the warmest side of the house—hap-hazard, as you may say. They all flew freely, but none went back to their old stands. When they had done flying, we moved them to their summer stands, and the next time they flew none went back to the place where we first set them. This shows that bees mark their location more than once when they come out in the spring.

Last season was a very poor one, especially the month of June. There were flowers enough in blossom, but no honey in them. I examined a great variety of flowers in June and the fore part of July, and found all of them infested with small gray lice, which seemed to eat the honey as fast it was secreted. Our bees increased rapidly through May, but from the 1st to the 20th of June I don't think there was an egg laid in any of the hives. They killed their drones and those that were not fed, uncapped the

worker brood and dragged it from the hive; consequently, when the linden harvest commenced,—the middle of July,—they were not more than half as strong as they should have been. In ten days after they commenced gathering from basswood, they had some capped brood, very little larvæ, but no eggs. Every cell not occupied with brood was filled, or partly filled, with honey, even the queen cells. Now, why did they cease breeding in July the past season, while the year before, although honey was still more plenty at that time, they were increasing rapidly? We extracted eleven gallons from the nine swarms, and during the month of August they raised considerable brood. But by the middle of September the hives were all full of honey, with but little capped brood, and no larvæ or eggs. Right here I will say that the great honey resources of this country, basswood and golden-rod, seldom, if ever, fail. We consider the golden-rod honey the best, as it is thicker and of fine flavor.

We made six new swarms last season, and this is our plan of artificial swarming: Take six or seven frames of brood and honey; put into an empty hive; remove a strong stock, and set the new hive in its place. In about an hour all the bees in the hive we move will be gone, except those that are too young to work. We then open it, take out the queen, and put her on the old stand, and give the young bees the new queen, or queen cell—which ever it be.

This is our plan of introducing queens: Let the hive remain queenless a day or two; then take the queen by the wings and put her on the platform among the bees. She will immediately enter the hive, and be kindly received. We have introduced both fertile and unfertile queens this way, and have never had one destroyed yet. But this plan might not work well in introducing Italian queens into black swarms.

Our bees went into winter quar-

ters this winter weak in numbers and but very few young bees; but up to this time they are doing well, and there are very few dead ones. They were perfectly dry when we put them in the cellar, and we removed the honey-boards and put on the honey quilt as you directed; but in three weeks after the observation glass and combs were covered with moisture. About a week later the combs were molding badly. We then turned the quilt back half way, opened the entrance a little more, and the combs are now dry again. This was the case only with the American hives. We had part of our bees in a new hive, patented last summer, and on those we have not only the honey-quilt but a woolen blanket, four double, laid outside of the quilt, with the entrance contracted so as to admit of but one or two bees at a time. This is all the ventilation they have, yet the combs and observation glass are perfectly dry. I don't know the reason of this, unless it is because they are open top frames. We like the open top frames much the best in many respects.

We have two swarms in one of these hives, which we propose to leave there until it is well filled with bees; then take away one queen, make a new swarm with her, take out the partition, let the bees together, and have one mammoth swarm ready for the linden harvest. The hive has eighteen frames with thirty-six small ones on the top, holding from one to two pounds each, so arranged that as fast as one is filled it can be removed, and an empty one put in its place without disturbing any of the others. Don't you think that amount of room will prevent their swarming altogether? The hive has a double-hinged cover, which makes it very convenient for handling bees, as we open but one side at a time, and by blowing in a little smoke the bees will hustle to the other side out of our way. Last summer they kept their brood in one side and surplus honey

in the other, which makes it very convenient for the extractor.

We were greatly annoyed by robber bees last season, especially when honey was plenty; when it was very scarce, and the bees all at home, they would defend themselves, but when it was plenty they were so busy they did not appear to notice the robbers. We contracted the entrance, which only made matters worse; for the robbers would crowd themselves in to the exclusion of the other bees, which piled upon the platform in great confusion. The best preventive we found was to take a board three inches wide and as long as the width of the hive, and lay it over the entrance one-fourth of an inch from the floor. The robbers did not like to crawl under this board, because if attacked they could not get away so easily.

I would like to ask a question in regard to the theory put forth by H. A. King and some others, that the queen lays two kinds of eggs, and that the drone eggs are those that are laid without coming in contact with the drone sperm. If this be true, why is it that drones reared from a fertile queen live several weeks, while those from a virgin queen die on coming to maturity? And why does not a pure Italian queen fertilized by a black drone raise pure Italian drones? Now, will the advocates of this theory please to make this matter plain, so we may all understand it? The most reasonable solution of this question to us is this: that the eggs are all alike; that drones and queens are made by the difference in feed; and the reason why bees always make drones of the egg of a virgin queen is, because they are anxious for her fertilization, and when she is old, and nearly barren, they know that they must have a new one; consequently what few eggs she lays will be made into drones.

We are told, also, that bees move eggs. If so, why is it that when a queen is taken away from a hive containing a number of half-finished

queen cells instead of moving eggs into them, they always build new ones over the eggs?

There are a great many questions I would like to ask, but this communication is already too long. A word about the honey-plants in this vicinity, and I have done. I shall mention only those that yield an abundance of honey or pollen. First, in April come the willows, in May, wild gooseberries, currants, plums, and cherries; in June, red raspberries; in July, milkweed, wild snowdrop, basswood, and sweet anise; in August, wild rice, sweet anise, and the asters; in September, golden rod and asters. All of these plants grow extensively in this region. Also, wild grape, but I don't know whether it yields honey or not.

There are a great variety of other flowers, as well as numerous lakes filled with a variety of fish, such as white fish, pike, pickerel, bass, and suckers. Game in abundance, such as deer, three varieties of wild geese, thirty or forty varieties of ducks, besides prairie chickens, grouse, partridges, and pigeons.

As for the climate, it is generally so healthy that somebody has to be killed or frozen to death in order to start a burying-ground. This is all I have to say about Minnesota this time. If anybody thinks I don't tell the truth, let him take a trip up here and see for himself.

The best way to get moths out of a comb is to rap gently on the side of the frame with a knife. Try it and see how quick the moths will pop out.

We sold our extracted honey in jugs for twenty cents per pound; box honey is thirty cents. At Sauk Center, honey is forty cents per pound.

MRS. M. E. CHANDLER.

New London, Minnesota.

NOTES FROM NEBRASKA.

MRS. ELLEN S. TUPPER:—This is New Year's day, and a beautiful day it is, too—warm and sunny; the bees

are flying very freely. This is my first letter for 1874, and, although a stranger to you yet, I will venture to wish you a happy New Year. I wish to give you a word of encouragement in your new enterprise:

I am very much interested in bee culture, and have read the JOURNAL for several years, but have never taken it. Now I propose to take it, and also try to get a few subscribers for it. By the appearance and contents of the last few numbers, I judge that it has at last fallen into the right hands. Without wishing to flatter, I must say that I am better pleased with it now than ever before; and I have always looked for the JOURNAL anxiously about the time it should appear.

It has been a very poor season for bees this year, in this part of the country;—yes, I may safely say, the poorest year since the settlement of the country. Bees have not accumulated honey enough during the season to winter on, and I have to depend on feeding, which I do when the days are warm. How I shall come out, is a matter of considerable uncertainty with me. My bees are standing on their summer stands, for the want of a better place, if there is one. Bees have usually wintered well in this way, but when they are short of food, and rather weak in numbers, and have to be fed from time to time, I do not know how they will come out.

JAMES B. JUDD.
Pawnee Co., Nebraska.

NOTES FROM KENTUCKY.

What is the largest comb in a simple four-sided frame that it has been found safe to handle?

Will Mr. Adair please tell us how he winters his sixty-frame hives? It seems to me that so large a hive would be very inconvenient for indoor wintering. Such a hive might, however, be made in sections, so as to be enlarged or diminished in size at pleasure. For working with the extractor

a single story is preferable to two stories, but must be so arranged that we can give plenty of room when honey is abundant. The extractor has considerably modified our ideas of what a complete hive should be. Extracted honey seems to be growing in favor, and the time may come when box honey will be in little demand. It does not pay me to get box honey, and I shall continue to sell extracted alone until the market is supplied, or box honey commands a price four or five times as great as extracted.

Some of the members of the North American Bee-keepers' Society condemned Mr. Langstroth's grooved entrance blocks as moth-breeders. That, I think was unnecessary, inasmuch as Mr. L. especially warns the careless and inattentive that they had better not make use of the grooves. The blocks should be examined at least once in seven or eight days. I made use of them on several hives of black bees last summer, and by that means killed about five worms per week for each hive, during the season. Now, I do not think the bees would have been much troubled in putting out that many intruders; but it was some satisfaction to me to kill them, nevertheless.

I never had a colony injured by moth, that I can recollect, and but once had them breed much in a hive containing bees, and that was in the second story of a small colony that had accidentally been left full of comb. In it there were many perfect moths, thousands of worms, and tens of thousands of eggs; but, although all the holes in the honey board were open, the bees had kept all worms out of the main hive.

So far, we have had an unusually mild winter, and bees in good condition, apparently, both out doors and in. It is too soon yet, however, to begin to crow over our success in wintering.

GEX.

January, 1874.

OUR SECOND SEASON IN BEE-KEEPING.

We had wintered safely two colonies of Italians—one in the cellar, the other protected on its summer stand. Spring found both colonies in good condition as to bees and stores. But they had not a superabundance of comb, one having but eight combs, and the other seven, in American frames. With a rapacity which I blush to confess, we had appropriated for the table the contents of three well filled frames,—removed on preparing the hives for winter,—a proceeding but half excused by the fact that we had then no extractor.

During the past season, these two colonies increased, by natural and artificial swarming, to seven, and, besides making ample provision for winter, gave us one hundred and seventy-four pounds of surplus honey, of which ninety-six was extracted and seventy-eight comb honey.

As they had no help in the shape of empty comb, and were fed not to exceed four pounds of sugar during the whole season, we think we may safely claim for them the credit of a pretty good summer's work.

But if to be anxiously watched, and lovingly "fussed over" through the spring and early summer; to be snugly "tucked up" in cool weather, and carefully shaded in hot; to have their own plans often interfered with,—not always successfully, however,—and their household arrangements continually subject to inspection and criticism—if this was any *help* to them, then, perhaps, a trifle of the credit belongs to ourselves, for all this they had.

Perhaps it is only fair to say that one of our seven colonies is queenless. This colony was, however, our strongest and best; it is still strong, and we hope to be able to give it a queen in the spring in time to save it.

Our surplus honey consisted of basswood and fireweed, principally the

former. Our extracted basswood has sold readily for twenty-two cents per pound; but our customers have seemed somewhat puzzled that we should ask eight cents more for that in the comb. They have courteously left us the beautiful comb honey for our own table!

As to the disposal of our fireweed honey, we are in somewhat of a dilemma—not wishing to give to our neighbors, at any price, what we do not like very well ourselves. To have given our bees sugar syrup for wintering, removing from their combs some two hundred pounds of fireweed honey, would have thus much increased our perplexity.

Only in the event of being obliged to report of our bees next spring: "Died, of disease induced by unwholesome food"—can we admit that for us sugar syrup had been cheaper. *Nous verrons.*

CYULA LINSWIK.

"Our Clearing," Jan. 7, 1874.

BEES DESERTING THE HIVES.

MRS. TUPPER:—I see you had quite a lengthy talk at convention on the above subject, and, as I have had some experience in the matter, I will give my theory as to cause and remedy.

Some three or four years ago an old schoolmate of mine sent for me to come to "doctor" his bees,—had about forty hives—said they were deserting the hives, leaving honey, etc.

I went and found his bees in a very weak condition as to numbers—all in box hives. I went to work and transferred and doubled up, putting two, three, and sometimes four together.

While I was at work transferring, several swarmed out and tried to enter other hives. I found they had sufficient honey and bee-bread and some brood in all stages, laid regular.

When I had done, all went to work, and did well.

My theory is, that the bees were so few in number that they could not generate heat sufficient to increase as

rapidly as they wished to, or as fast as the queen laid eggs, and so became discouraged and left to seek a warmer climate, or a house with a larger family.

I have had desertions in my own apiary frequently in spring, but found all to go well after "doubling," and usually cage one of the queens till time to divide, and then used her, but never discovered any "unhealthy" or diseased queens; all laid their full share of eggs, and lived out their natural lifetime. Some had "clipped" wings, and some had not. I have not been able to discover any difference in the fertility of those "clipped" and those not "clipped."

If you think this little item will benefit any one, let them have it; if not, throw it aside. H. NESBIT.

Cynthiana, Ky.

HONEY PLANTS OF THE WEST.

Cleome integrifolia,—also called the great American bee-plant. This is a hardy annual introduced from the Rocky Mountain country several years since as a flowering plant for the garden. But it was soon discovered that it possessed qualities which rendered it very valuable for bee forage, and, for the last five or six years, has been grown almost exclusively for that purpose. The plant is a strong grower,—from three to six feet high; in habit of growth something like the common mustard; its flower-heads are numerous, large, and showy, of a bright purple color, and very ornamental; commences to bloom in July, and continues until hard frosts. So far as tried, it grows well on the very poorest soil, even on high and dry hillsides; in fact, it will flourish where almost all other kinds of vegetation fail. The honey produced from this plant is white and dense, and of a very fine flavor.

Lophanthus anisatus.—This is another Rocky Mountain plant, and is also a fine ornament for the flower

garden; but its qualities for that purpose sink into insignificance when we take into consideration its great value as a honey-producing plant. I will say here that this is my favorite honey plant, being a hardy perennial, and, when once started, is much less trouble than those sorts which we have to plant every year. It grows two feet high, each root throwing up many flowering stalks, blooming from May until October. The whole plant has the odor of anise to a great degree, and the honey from the plant is also somewhat tinctured with the same fragrance, and is very pleasant to the taste. The seed of this plant is very small, and is difficult to collect, which causes it to be high-priced as yet.

Both the above plants will self-sow, and many plants of *lophanthus* may be collected near where the old plants grew the previous year.

A chromo of these plants may be found in the first number of the *Bee-Keepers' Magazine*, published by Messrs. H. A. King & Co., New York.

H. A. TERRY.

Crescent City, Iowa.

BEE PASTURAGE.

Undoubtedly the linden or basswood produces the most honey of all other trees we have in this country. This tree should be largely propagated. It is hardy, easily transplanted, and should find a place among our ornamental trees, about our dwellings, fence-corners, and other places where shade trees are wanted. This tree, if transplanted, will bloom profusely when quite small—much sooner than if not transplanted. The best time to transplant is just as the frost is coming out of the ground.

The next best is the whitewood, or poplar. This tree is not so easily propagated, and would not pay to cultivate for honey alone. But wherever it grows naturally bees gather large quantities of honey.

The soft maple is another very desirable tree to propagate, for ornament

or shade, and it produces both pollen and honey early in the season. On this account, it should be reckoned one of our best trees to cultivate for bees.

Willows of all kinds produce both pollen and honey early in the spring. The common yellow willow, in particular, should be cultivated for the honey and pollen it produces. This tree can be set along river banks to prevent the water from washing away the banks, and can be set on opposite sides of runs to hold the flood-gates. The willows are grown from slips, and should be extensively propagated.

Currant bloom of all kinds produces honey if the atmosphere be favorable when in bloom. The English or black currant is far the best variety for producing honey. I have frequently seen bees light on a single cup of this flower, and fill their honey sacks before leaving it, and yet there would be enough left, apparently, to load another bee. I would recommend bee-keepers to cultivate largely of this variety, as it produces honey early, and of the very best quality. It is readily propagated from slips.

Alsike, or Swedish white clover makes the very best bee pasturage, equally as good as common white clover, and should be cultivated largely. It makes excellent honey and the very best pasturage for all kinds of stock. Stock of all kinds will leave any other herbage to graze on Alsike.

Buckwheat, in districts where it produces honey, is a very desirable crop for later pasturage. In my locality it yields no honey.

I would say to my brother bee-keepers, procure and set out largely the coming spring, for ornament or shade, basswood and soft maple. They both make beautiful shade trees. Mix a little white and Alsike clover seed with all grasses sown on the farm. It will add much to the quantity, as well as quality, of the hay.

Bees are wintering finely so far this winter. No appearance of disease in

this section of the country. I predict "a good time coming" for our little friends, the honey bees.

N. BENEDICT.

Ohio.

A BUDGET OF CORRECTIONS.

MRS. E. S. TUPPER:—I regret to learn that I failed to make myself fully understood in what I had to say at the meeting of the North American Bee Society, held at Louisville, Kentucky, December 3, 1873.

Instead of saying that I had "found queens laying eggs about in the hive, but not in the cells," I said, or meant to say, that I found a queen trying to lay, but left no eggs in the cells. This was a queen that I bought of S. B. Parsons, in 1861. I changed her from one hive to another a few times for the purpose of propagating queens; but, upon opening the hive to remove her the last time, I found her busily at work trying to lay eggs, but there were no eggs in the hive—only sealed and hatching brood, including several young queens nearly ready to hatch. This queen, when removed, had the appearance of being prolific, and in a healthy condition. I removed her to a nucleus hive. The next morning I found her a few feet from the hive apparently dead from cold. After reviving I returned her to the hive; but a few hours later she was gone again. This I mentioned as an instance in which I thought the queen had left the hive on account of a diseased condition, but in that I think I might have been mistaken, as, the queen having been cropped, the bees had probably swarmed out and returned unobserved, leaving the queen to perish.

I did not say what kind of a screen I used to confine bees to the hive. Wire cloth may be used, but I prefer a screen made of perforated metal plate, regarding it as the safest and best for that purpose.

In addition to adding two pounds of boiling water to every three pounds of sugar for feeding, I also meant to say,

Heat to the boiling point and skim. The sugar would then be thoroughly melted.

I also meant to say that in transferring combs I had generally found more moth worms in the combs of common bees than of Italians.

Also, that from inattention in the summer of 1866 I propagated thousands of bee moths, and that without any attention to catching the worms or moth millers either, I could not discover that my bees were troubled any more by them than when I did not rear any.

As the best means of protecting the combs of brood, or honey, etc., during warm weather, I either use plenty of bees, or the fumes of burning sulphur, keeping the combs in a cool place, properly protected from the bee moth and all other vermin.

A. T. WRIGHT.

Kokomo, Indiana.

ARTIFICIAL SWARMING.

Thinking it might not be uninteresting to the many readers of the JOURNAL to learn my mode of making artificial swarms, I will say that I prefer the drumming process, no matter what kind of hive the bees are in. If movable comb, I remove the cover and surplus boxes, return the cover, and drum the bees, with their queen, up in the cover. As soon as I find the queen, I let her, with a suitable quantity of bees, go in the new hive, and place it on the old stand, removing the old hive to a new stand. The next day give the old colony a young, fertile queen. If the old hive is well stored with honey, and I wish further increase in stocks, I go through the same process again in eight or ten days, drumming out the introduced queen. The next day give the old hive a fertile queen, as before. If in common box hives, turn bottom up, and drum out the queen and bees, and proceed the same as with the movable comb hive.

I like this plan of making colonies

the best I ever tried, as the drumming process will cause the bees to fill themselves with honey, and we get both old and young bees. In these respects it comes as near natural swarming as bees can be divided, and, by keeping a laying queen in the old hive all the time, we have the advantage of two to three weeks over natural swarming, for the reason that the old hive is kept full of brood.

A. BENEDICT.

THEORY vs. PRACTICE.

MRS. EDITOR:—Almost every paper that has been published on bee culture has forbidden its contributors to give any theory through its columns. Now, I believe that we, as bee-keepers and readers, are far behind what we might have been had we had the chance to have heard the new and undemonstrated ideas of others. Very few of the most valuable discoveries would ever have been made had not the discoverer first got the rough and unfinished idea from some other mind. Many persons have valuable ideas that they cannot complete, and very often more than one valuable idea is obtained from the same starting point, by different minds, and are of great value, when if they had smothered them in their own minds, simply because they were not able to complete them, then all would have been lost. I think we often get valuable ideas from others, by conversing with them, that the author never had any real knowledge of. Hence, the great value of our social conventions; nor does their value all consist of able speeches delivered by the eloquent and learned; but often those that seem to be the most ignorant advance some of the most valuable and new ideas. I have often thought that I never talked with a bee-keeper so ignorant that I could not learn something new to me from him. Even false theories have some good points in them.

Now, I want to theorize a little, and you, Mrs. Editor, need not publish it

unless you think best, and I shall not feel a bit hurt if you don't, for I know that it is against the general rule to do so.

I will first state what I suppose to be an admitted fact, and that is, that bees swarm much more in the Western than in the Eastern States—say from two to five times as much. Now, the question is, Why is this so? The answer, or theory, is this: The swarming commences at or nearly the same time in both sections; but in the East it generally ceases as soon as the pollen that is gathered from the early plants is consumed; then the white clover, linden, and buckwheat come, and do not furnish much, if any, pollen, and breeding is contracted, if not entirely stopped. In the West they have the same, or nearly the same, chance to get pollen in the spring, and at, or about, the time that it was short in the East our prairies bloom and furnish pollen until frost comes; and our Western forests are also filled with pollen-producing plants far in excess of those of the Eastern States.

My theory is that the cause is to be found in the supply of pollen; and that the remedy is by raising such plants as will produce pollen the longest possible time, and among those I have found the common hemp and the Rocky Mountain bee-plant to excel.

J. W. HOSMER.

Janesville, Minn.

WINTERING BEES.

ELLEN S. TUPPER:—I have your circular stating that you assume the entire control as editor and publisher of the NATIONAL BEE JOURNAL. We, the bee-keepers of this vicinity, congratulate you and wish you success in your new enterprise.

I commenced bee-keeping in the spring of 1872, with two swarms in the American hive. My bees did very well. They gave me two natural swarms that I saved, and one went to the woods. I made four swarms arti-

ficially. I equalized them up before fall, so the eight swarms averaged 35 pounds, clear of the hive, weighed the 10th of November. I did not put them in the cellar for some ten days afterward, and not until there was a good deal of ice and snow in the hive, which blew in through the movable side. I carried them in the cellar, let them set over night, and then took off the movable part and cleaned out ice and dead bees, closed them up, and set them on the shelf, where they remained until spring. I left the top of the hive off, and left one row of holes open on top of the frames. I did not use a honey quilt. My cellar is both dry and warm, and does not freeze. My bees came out all right, and on weighing in the spring they had eaten on an average eleven and one-half pounds per hive. I commenced feeding them rye meal, which they took readily, commenced rearing brood, and by the last of May the hives were full of bees and commencing to make queen cells and had several capped. I expected they would swarm, but in a short time noticed them killing their drones. I examined them and found they had, or the queen had, destroyed all of my capped queen cells, and from that time through the month of June they did not gather honey enough to live on. I fed my bees some, but not enough to keep them from killing their drones, and they stopped raising brood, and were not as numerous the 1st of July as they were the 1st of June. There were millions of lice on every kind of blossom that seemed to take all the sweet from the flowers. They began to gain as soon as the basswood bloomed, but that was of short duration. Our bees did well on the golden-rod and other autumn flowers. In the latter part of July we commenced nucleus swarming, and myself and my neighbors have managed to double our number.

I have put sixteen swarms in my cellar this fall, and I followed your instructions on wintering. I found on

examining that my bees had no brood in their hives this fall. I expect to have some very weak swarms in the spring—if I don't lose some of them.

C. J. SPERRY.

Kandiyohi Co., Minn.

WINTERING BEES.

How to winter bees successfully, is the subject that now agitates the minds of bee-keepers. Can they be wintered successfully? I answer, they can, with as much certainty as cattle, horses, or sheep, by the following methods:

Every stock should have at least 20 pounds of honey, or its equivalent in simple syrup, made by dissolving, with heat, two pounds of white sugar in one pint of water. The twenty pounds will last them from the 1st of October to the 1st of April. In the Northern States, bees do not usually gather honey between these months. In October, remove the honey boards, and in each comb cut a hole about two inches below the top. Remove one of the center frames of comb, and in its place insert an empty frame. Take an empty frame, on it tack a quilt, or piece of carpet; lay this on top of the frame. This will give a space for the bees to cluster in. Where one has neither quilt or carpet, use corn cobs. On the approach of cold weather, put the hive in the cellar or bee-house, which must not admit a ray of light. If stocks are strong, leave six to eight inches of the entrance open; if weak, leave about one inch. Keep the caps on the hives, but have at least two one and one-half inch holes in them covered with wire cloth. Keep the temperature from 30° to 40° by opening the door and windows at night. I have kept the temperature rather higher—42° the most of the time, and once or twice up to 46°, and then as low as 36°; that is, I have let the outside temperature regulate the temperature of the cellar. At this time, (Jan. 20th) the bees appear all right. At

the higher temperature, I think they consume more honey. I have never been troubled with damp or moldy combs, and I have never lost a stock on the plan given.

Some writers (Mr. Andrews, also Mr. Burch) claim that a space at the bottom of the hive is quite an advantage. I think it is. I have one hive fixed on this plan: Place over the rabbets a two or three inch piece, and let the ends of the frames rest on it. This will give a space at the bottom. I have in use two Buckeye hives. They have about a three inch space at the bottom, and I never saw bees winter better than these have done. I would not advise any one to use the Buckeye hive. I do not know of a single stock in this section wintered in the cellar last winter that died. Of those wintered out doors, fully nine-tenths were lost. One man lost eighteen, all he had. His had gathered honey from the same fields mine did. When bees are confined and warmed with artificial heat, their bodies become distended: they cannot fly, neither can they discharge their foeces. What is the matter with them?

You are making a vast improvement in the NATIONAL. May continued success be yours.

T. G. McGAW.

Monmouth, Ill.

NOTES FROM CALIFORNIA.

MRS. TUPPER:—It seems strange to me, after residing in Southern California for four years, to hear, or rather see, in the journals so much said about wintering bees in cellars, using quilts to cover the frames, and so many other appliances, and so much expense gone to, to keep them from freezing, especially when we look at the thermometer and see it stand on an average from 80° to 90° in the shade at noon, and see our bees just as busy—especially the Italians—as in midsummer.

There are at this time several honey-producing flowers in bloom. I had

two queens come out in December. One of them was fertilized, the other was not, owing to a whole week's rain just after she came out. My colonies breed here all the time; consequently, they keep strong without any trouble. I use the Langstroth hive, but increase the size by putting on story after story until my hives average 6,000 to 8,000 inches. I have an extractor, but did not use it last summer, on account of my health being so poor I could not be in the apiary but a little while at a time once in ten days or two weeks, when I would go at it and cut out all the comb down to the brood box, and, as we cannot ship comb honey from here, I would have a man carry it to a large sun extractor, where it was let stand in the sun and melt.

I had one stand from which I took from May 17th, the day they were put in, to October 8th 402 pounds of comb honey, and to-day they have a hive of 5,000 in capacity full. If you can beat this, let us hear of it. We get from twelve to fourteen cents for honey here in cans of sixty pounds each. We have as yet no enemies to the bee in this region, unless it is the moth, which, if the bees are given a fair chance, is no enemy worth mentioning.

This is the natural climate for the bee, and if any one is determined to follow the bee business for pleasure or profit, I would advise him to come to Southern California.

J. W. MONTGOMERY.
San Bernardino Co., Cal., Jan. 1, 1874.

BEES ABOUT ST. LOUIS.

The few stands of bees that are left in the vicinity of St. Louis did exceedingly well the beginning of last season; but toward the last part of the season the drouth dried up their supplies, and nothing was done by the industrious little fellows. So far we have had no winter in these parts, the weather being very soft and mild, and those bees that were left on their sum-

mer stands will be very liable to perish before spring sets in. w.

The readers of the JOURNAL are respectfully informed that the chap with the auburn hair and underscrubbed name has not given up the ghost—not by a jug full; nor has he given up keeping the marvelous little honey-bee; and if his Faber No. 2 can do anything, while in his fist, toward helping along practical bee-culture, it will be at their service. w.

HONEY AS FOOD.

MRS. E. S. TUPPER:—There is a very common impression that honey is a mere luxury, and has nothing to do with the realities of life, or the life-giving principle; consequently, we often hear it spoken of as one of the nick-nacks, and no more to be thought of than candy or any other mere pleasure-giving article.

Now, this is a great mistake. Honey, like sugar, is food in one of its most concentrated forms; too concentrated to be taken into the human stomach in but small quantities at a time, but as part of a meal, mingled with less nourishing food, it is highly desirable. It is of the class of articles called carbonaceous, and, consequently, does not add so much to the growth of muscle as beefsteak, but it imparts other properties no less necessary to health and vigorous physical and intellectual action. It gives warmth to the system, arouses nervous energy, and gives vigor to all the vital functions. It gives strength to the laborer, and mental force to the man of business. Not like wine, tea, opium, etc., which are mere stimulants, and arouse only to depress, and that too often at the expense of healthy moral action, but its effects are healthy, peaceful, and permanent.

I have often thought of the prophecy in regard to our Savior: “Butter and honey shall he eat *that* he may know to refuse the evil and choose the good.” (Isa. vii: 14-16). Taking for

granted that our translation is correct, I think we may readily infer that His diet when a child, of which honey was an important part, added something to the sweetness of His disposition as a man, to the early development of His intellectual faculties, so as to be able, at the age of twelve years, to argue, and successfully, too, with the learned doctors.

Honey is also a sedative of no ordinary power. A friend of mine, whose habits of observation were seldom equaled, having one of his knee joints badly broken by the kick of a horse, the pain and anguish being very severe, his daughter asked him if he would have some wine, which he declined. “Will you have some black tea?” “No; but you may give me a little honey.” My own experience justifies the wisdom of his selection. Try it.

DOCTOR W. A.

BEE-KEEPERS EXPECT TOO MUCH.

MRS. E. S. TUPPER:—I have often thought that new beginners in bee-culture frequently meet with disappointment by expecting to do as well as Hosmer and a few others that get very large yields of honey. I have kept bees ten years, and am quite enthusiastic, but have not succeeded in getting such large yields. I have had my bees pay as high as \$31 per colony, in swarms and honey, for one year. The last year, about \$16 was the average; and one or two years there was no profit, especially in 1869, when I not only got no increase nor honey, but lost more than half of my bees the ensuing winter and spring. I have had none but black bees till 1872, since which time I have Italianized my entire apiary, and am well pleased with the change.

J. L. DYER.

ITALIANS VS. BLACKS.

I am glad to know that our favorite writer on bee-culture has become the editor of our favorite bee journal, and

hereafter its columns are to be filled with matter pertaining to bee-culture.

I have kept bees in Illinois for seventeen years, and this has been the poorest season of all. I went into winter quarters with eighty stocks; lost six. One-half were wintered out of doors, the other half in the cellar. Had seven natural swarms, and took one hundred pounds of box honey. Extracted none, the season being to poor to use the extractor. My bees are Italians. Black bees, both old and young swarms, commenced starving out in October, and I think they will nearly all die this winter, they being mostly in box hives, and in the hands of careless bee-keepers; so, I will have but little trouble in keeping my Italians pure.

The difference between the Italian and black bees as honey-gatherers is very striking here, this season,—the Italians having plenty of honey to winter on, while the blacks commenced to starve in the fall.

S. H. BLACK.

McDonough Co., Ill.

RANDOM NOTES.

Correction.—On page 17, January number of the NATIONAL, my name appears to a series of notes that I never noted. I presume the editress was unable to decipher the true name of the writer of those notes, and concluded, from the fact of its illegibility, that it must be mine. This was a very reasonable conclusion, as all will concede who have experimented on my hieroglyphics. But I would not ask to have this correction made were it not that I don't like to see my name to quite such a *big one* as the last of the notes referred to. I have never yet been able to prevail on my Italians to produce me "one swarm and over *seven hundred* pounds of honey." I fear the readers of the NATIONAL will think I am getting rather hyperbolic if this error be not corrected.

Criticism.—I take and read three bee journals. I do this to learn all I can

on the subject of bee-keeping. I have been much interested and edified in the reading of all of them. But I occasionally feel a little vexed on finding the same article published as an original contribution to each in two or three journals. Some very kind brother bee-keeper gets up a paper on "Feeding," or "Wintering," or "Baggage Smashing," or some other important subject, occasionally referring—incidentally, of course—to the peculiar qualities of "my hive," or "my" something else, and after duplicating or triplicating it and labeling his copies "For the NATIONAL," "For the American," and "For"—some other journal, puts them off by the same mail for simultaneous publication in all parts of the country. No doubt those writers think they are doing the public a favor in giving them, gratuitously, the benefit of their wisdom, and especially in informing them of the superior value of their wares. I am disposed to give them credit for their disinterested benevolence; but, after reading their articles over two or three times in as many different journals, it strikes me that it would be a little more appropriate, as well as more profitable to the publishers, for them to do the *puffing* of "my" wares under the head of "Advertisements."

No Disease Yet.—Up to this time, I have not heard of any cases of dysentery among the bees in this section. The winter has been unusually mild. This, Mr. Quinby would say, is the reason of the absence of the disease; but I can't subscribe fully to his theory on this question. The winter can not have much effect on my bees, for they are in the cellar, where I have kept them for three winters past, and in which the temperature is little affected by that outside. They are now all healthy, while many of them died during the two past winters with the dysentery. The only reason I can assign for the difference in their condition now and then is that now they have *nothing but sugar syrup*, while

the two previous winters they had more or less of *late-gathered stores*. On Christmas Day, which was as pleasant as a May morning, I set out my hive containing my imported queen that the workers might have a cleansing flight. They swarmed out as lively as on a summer afternoon, but I could not discover that they discharged any feces, although they had been confined in the cellar over six months. I opened the hive and could barely miss the syrup they had consumed. I am thoroughly convinced that good sugar syrup, fed late in the fall, is not only a very safe, but also a very economical, winter food. I expect to bring my twenty-seven winter stocks thro' the winter on less than one dollar's worth of sugar to the hive.

M. C. HESTER.

Charlestown, Indiana.

NOTES FROM ILLINOIS.

MRS. E. S. TUPPER:—Allow us to congratulate you on the *very great* improvement you have made in the JOURNAL. We have been taking several bee papers, but the JOURNAL now is all the literature of the kind we need.

Our bees are yet doing very well, having lost since they were put in the cellar, two months ago, about two and a half pounds to the hive. No sign of disease. Temperature from 33° to 60°.

WILKINSON & SMYSER.

Windsor, Ill.

HOW HE DIDN'T GET THE HONEY.

A boy sends us the following account of how his father went for and didn't get any honey:

"Having had the same grub right straight along, the 'old man,' like the rest of us, thinking that something good would go nice, determined to have some honey for Christmas, and the day before Christmas he fixed up a brimstone match, lit it, and with a bucket went for an old gum that stood in an adjoining lot. All of us young-

sters watched his movements, and smacking our lips, thinking of the delicious treat that was in store for us. The day being warm, the bees were on the wing, but the 'old man,' being hard of hearing, and not seeing the 'little cusses' around, lifted up one edge of the gum, and thrust the brimstone match under. Our yellow dog had followed the old man, and, thinking he was after a rabbit, began smelling around the gum. The first thing he knew, a bee left its stinger on his tail, and he began howling like forty; and, in trying to find out what hurt him, he upset the old gum. You ought to have seen those bees go for every mother's son of us, including the 'old man' and the dog. The 'old man' had thirty-six stingers on his bald head, and over twenty on his face. The other boys got any number, while I got off with only ten, and one of them hit me in the eye, which prevented me from going to see my girl for over a week. After taking out the stingers, and sticking on soft mud, rubbing with hartshorn, coal oil, and a thousand other things, the 'old man' said that he reckoned we would keep at the same old bill of fare. Our faces were swollen as big as mountains, so to speak, and the worst of it is the bees got off scot free, all on account of our yellow dog. Had he not tipped the old gum over, the bees would have gone where the woodbine twineth, and we would have had some honey for Christmas. I set the old gum up that night, and intended to put some powder under them and blow them up; but the 'old man' says that would have spoiled the honey, so I let them alone. When it gets right cold, the 'old man' says he will chain the dog up, and try it on again. If he succeeds, I will tell you how much honey we get.

W.

WHAT is termed "luck" with bees, is only another name for careful and skillful management.—*Rural Register.*

Editorial Department

Mrs. ELLEN S. TUPPER, Editor.

CORRESPONDING EDITORS:

L. C. WAITE, St. Louis, Missouri.

A. J. POPE, Indianapolis, Indiana.

Mrs THOMAS ATKINSON, Leesburg, Florida.

FEB.

DES MOINES, IOWA.

1874.

SPRING MANAGEMENT.

Upon the management of bees in spring really depends the prosperity of the business for the whole season. Many good colonies, seemingly, in March are worthless when the flowers appear, while others that are weak and poor in March may be nursed, with little care and expense, into a strong working force by May and June. Every hive should be carefully examined the first warm day of spring, their combs taken out, and their state as to question of supplies be ascertained. In all hives where there is a supply of honey on hand, brood rearing will be commenced. To encourage this to the utmost is now the object, that the workers in every hive may be numerous when the honey harvest comes.

It is now the instinct of the queen to deposit eggs rapidly, and the workers will cherish all eggs if there is food. We advise to take away all empty comb that the bees cannot cover,—saving it to be returned in the future—and to protect the combs by a piece of quilt or blanket laid over the top and at the sides. Then close the hive snug and tight, leaving entrance for only a few bees at a time. Whether they have abundant honey or not, we would feed them either sugar, syrup, or diluted honey, placed in shallow dishes in the hive or cap, *not outside*, for fear of robbers.

As soon as brood is deposited freely in the combs left in, put in others, one empty one between two full ones. If this is continued, and food be given

them, they will fill the combs rapidly. One hive so treated may be compared with another; left in the usual way, with what honey they may happen to have, and the air admitted freely, and the one will have five or six sheets of comb filled, while the other has barely commenced brood rearing. Those hives will be the profitable ones which are full of bees during the season. Many colonies remain with little or no increase until flowers are abundant, and then build up rapidly, just to gather honey for their own winter use, but not in time to store any surplus.

The grub of the moth miller, known as an ugly worm, must be sought out and killed wherever found. If these are all killed now, this enemy to comb can all be exterminated. From the few carelessly allowed now to remain four generations may come. The miller is only the dread of careless bee-keepers, for others take it in season.

No scraps of honey should be left about, or fed to bees indiscriminately in the open air. This will promote robbing.

If bees are in box hives, they can only be judged by lifting as regards weight, or by watching to judge as to the number of bees. If they are light, and bees are few, we would feed hem on the top under the cap, and build them up as described for movable combs.

There must always be guess-work about their condition. If immature bees are noticed on the bottom board, it is proof that they have a queen, al-

though it also indicates the presence of the worm. If it is desired to take the bees from the box hive and transfer with the combs to movable frame hives, we advise to do it when the fruit trees bloom and honey is abundant—not before. At that time the bees rapidly repair any broken comb, and are little affected by their change of dwelling. Ample directions for doing this are given in the books upon bees, and, as every one should own one of these books, we will not give the details here. The matter is a simple one; even a novice can do it successfully, and we have known women undertake it who had never seen it done, or been accustomed to bees, and yet succeed perfectly. In doing it, every scrap of good worker comb should be saved, and used. The drone comb is fit for nothing but wax, unless it be clean and new enough for surplus boxes. The cells are larger than those of the worker comb, and can be distinguished at a glance. The less of this we have in the main hives the better. One piece two inches square is sufficient for any hive. This suppression of drones is one of the greatest economies of the hive. We have seen hives where more drones were reared than workers. They consumed all the honey as fast as it was gathered, while the unconscious owner wondered why "his bees would not work in boxes," and "allowed they were strong." The way to prevent this state of things is to have every hive full of good worker comb, and then no surplus drones can be reared.

The office of the drones is to fertilize the young queens as they appear. The quantities of them that are reared are purely accidental, and if but few are reared, the purpose of their creation is attained.

WE formerly kept our bees in a cellar until the weather was settled and there was something for them to gather. Of late years we have learned by experience that the sooner we can

bring them out the better it is for them. If a warm, pleasant time comes in the latter part of February, we get them out, even if we are obliged to take them back again; the advantage of a good flight more than repays for the trouble of taking them in again. It is not, however, necessary to return them because one or two cold days occur. If the hive is tight, and small entrance allowed, and the bee quilt on, it is better to leave them out. It is only long continued cold weather that injures bees when they are warmly covered. Last year, in February, many bees that were taken out perished; but the weather was very cold and continued for three weeks without moderating. We saw bees that died during this time that perished of starvation, because the honey was all gone near the cluster, and they could not get to the distant parts of the hive without freezing.

With this experience in mind, we still advise all to take advantage of warm weather and bring their bees out. *Do it in the night*, when a warm day seems coming. Close the hives so as to retain all warmth; put quilts or blankets or straw mats on the top carefully. As soon as prudent, ascertain the wants of each colony, and if they need feeding, do it while it is warm in sufficient quantity to give all hands a "good square meal," and a little over. Then, if the mercury goes below zero, they will not suffer for a day or two. If the cold continues, carry them back until it moderates, then bring them out to stay.

Feeding bees in spring is a very different thing from doing it in the fall. The syrup now should be given regularly in small quantities, and the bees allowed to carry it from the cap of the hive, or from one side of it to the other. This stimulates the queen, and brood-rearing commences rapidly.

All empty comb may be taken away now with advantage, and the bees only allowed as much as they can protect

by their clusters, parts of it being returned to them from time to time as they increase.

REVIEW OF THE 12TH MONTH NUMBER.

The first article by that veteran but innovator on all old practices of bee-culture, Hosmer, is, to my mind, good—yea, very good; hope bee-keepers will remember its teachings and improve by them. The assertion made of the number of eggs that a queen will lay in a good season will do for all of us to prove or dispute the coming season.

The article from "Gex," of Kentucky, rings of the right metal, and I feel sure that success must attend such determination and pluck; but he does not get such favors from bee-keepers who read the journals on interests.

S. Hoagland certainly shows a greater per cent. profit in bee-culture than in any other agricultural occupation.

"An Appeal to Bee-Keepers," by that great bee shipper, Chas. Dadant, should draw the attention of all bee and honey shippers to our sufferings in that line, and we should use all honorable means to stop such destruction and waste.

The design of the editorial department is significant and good. The old lady at her desk, with lamp burnidg by her, speaks loudly for her determination to give all her readers the fruits of her almost unceasing labors; but I feel like giving a word of caution: that all work and no recreation is very destructive to the human organization, and we would rather that she would not tax the system too much, because we all would like to have her teachings for many happy years to come. Her editorial in this number is worth more than a year's subscription to any one just beginning the care of the honey bee.

I agree with the editor in opposition to "Novice." I have attended three

of the five meetings of the N. A. B. K. Society, and in all cases have I been well paid for the time and expense. Thy notice of all other bee journals in the NATIONAL BEE JOURNAL meets my very cordial approbation, and I think it is a step in the right direction.

In that section in the article on the natural history of the honey bee, speaking of the producing of a queen from a common worker egg, there is a difference of opinion among bee-keepers about the *quality* of the feed being any different from that fed the other bees. In reference to what bees gather, is there not one small thing overlooked—that is, the material of which the queen cell is composed and capped over with? According to my observations, that is a different substance from anything mentioned in the article. It is more like what the hornet uses in making its nest. In all other respects the article meets my approbation.

"Notes and Queries" is a part that may and should be one of the most valuable clauses in the NATIONAL BEE JOURNAL, and all subscribers should feel themselves not only permitted to ask questions but a duty both to ask and answer all such questions as they have experience or knowledge about, and thereby assist our editor in her labors for our good.

Is rye meal better than wheat, oats, or buckwheat, and what experience has demonstrated such to be a fact? Is there not a difference in the locality which way a hive should front? In Indianapolis I prefer a north-east front. In central and southern Indiana bees do very well on the locust.

In answer how to keep ants away from hives, I have always been successful by using salt around and under hive and in all cracks and crevices not large enough for bees to enter. It is also good for bees, judging by the quantity they will use if they can get it.

Very glad to hear such cheering news, and can truly say that the

Twelfth Month number is good—yea, very good; only twelve errors marked in my home number; having carefully read it, am delighted with it; my other criticisms are already given. P.

BEE-STING REMEDIES.

As we have different constitutions and temperaments, so must we have different remedies for our ailments. The compound tincture of lobelia; strong solution of aqua ammonia or hartshorn; water, cold or warm, either immersed or covered with wet cloths; equal parts of s. c. soda, or sal soda and salt moistened; equal parts of chloroform and ether; strong tobacco juice, etc., etc.

In all cases of bee-stings, take out the sting *not* by pinching the base of the sting between the thumb and finger, thereby forcing more poison into the flesh, but by the nail, knife, or something that will scrape it out; then moisten the parts stung with either of the above remedies, and by trying the different ones we will find which is the one for each of us. P.

A CORRESPONDENT enquired what plants might be cultivated with advantage for pollen. We submitted the question to Hosmer, who sends us a letter which appears in this number and which, like everything that comes from him, is valuable.

We have never seen a lack of pollen in Iowa but one fall. Then the bees took rye meal greedily, and we thought to their injury, as they stored it too near the center.

In spring there is pollen in our locality by the first day warm enough to allow the bees to fly, from quaking ash, hazel, and soft maple. Still we find that if rye meal is kept near the hives, it prevents much loss of bees in windy weather, and we keep it there long as they will take it.

CORRECTION.—In the “Notes and Queries” of last month, on pages 16, 17, a letter is signed M. C. Hester. It

should have been Harry Goodlander. We are unable to explain how the error occurred, but it was one of those provoking mistakes which will occur in the best regulated business. The last line but one should read, “one swarm, and *both* over seven hundred pounds.”

WE gratefully acknowledge many favors from railroad officials in years past, during the days of “editors’ annual passes,” but are much more pleased with the present system of mileage tickets, some of which have been sent us to be paid for in advertising, at cash rates. Of all the complimentary passes ever bestowed on us we most appreciated one with which we were favored over the Louisville & Cincinnati Short Line, by J. B. Wilder, President. We found the road an excellent one, and the route delightful.

Our visit in Louisville was, in all respects, pleasant, and the attentions shown us there will never be forgotten. We may have fuller meetings of the Association at other places, but none will be held in a more beautiful city, or among a more hospitable people.

THE proceedings of the Central Iowa Bee Keepers’ Convention reached us too late for this issue. We have only space to say that a form of petition to the Legislature was prepared, asking that body to exempt bees from taxation till 1878, and to otherwise afford aid to bee culture. We hope these petitions will be sent up from all parts of the State at once.

WE regret that there should have been a mistake in naming the fees for registering letters in the January number. It has cost us something, as we have been obliged to pay double postage on some letters in consequence. All registering letters will now take notice that the fee is eight cents, *in addition to regular three-cent postage.*

Notes AND Queries

I think my bees are all right, but don't know, and would like to ask a few questions, as I am entirely green at the business, having made my first purchase in the fall of 1872. They came out all right in the spring of '73. I divided twice, having good luck each time, and got some surplus honey in cap boxes, and extracted some.

Question 1. Should not bees be examined at least once in the winter, to see if there are any moth worms, and to clean out the dead bees? It seems to me that they should be cleaned out as much as a pen or a stable. I examined mine yesterday, and found plenty of honey and bees; did not see any queen in either, and no brood in one of them, and some worms in the other, and only a very few cells of brood.

2. Should there be young brood this season of the year?

3. How early can queens be raised and sent in the spring? My bees are in a well-ventilated cellar.

MARTIN RICKARD.

Grinnell, Iowa.

1. Bees are no better for being examined in winter. The less they are disturbed the better. We never go near ours for three months. The advantage of cleansing the bottom boards are more than counter-balanced by the excitement caused. The bees, being disturbed, eat more, and are uneasy because they cannot discharge their foecal matter. There is no comparison to be made between the hive and the stable; for bees are, or ought to be, semi-torpid, while the inmates of the stable are exercising all their functions as usual.

2. It is not usual to find any brood in January; by February there will be some in all healthy hives—not much, however, but it increases towards the close of the month. It is not easy to see the queen at this season, and it is partially injurious to disturb the bees while in the cellar enough to look for her.

3. The time queens can be raised and sent out in spring depends much on the season—not usually before June; but queens can be sent out of the previous year's rearing from full

colonies in May, and often in April, if the spring is early.

My twenty stands of bees made all the honey necessary to winter them, and gave about 150 lbs for family use. I shall divide my twenty colonies and make forty in May.

I wish to Italianize some colonies this season, and you will please to answer my letter and inform me the most proper month to make the change. I use the Champion and Langstroth so far, but in May next I shall use the common box hive and log gum twenty inches high, with movable frames in both. Inch boards, in my opinion, do not make hives warm enough, and I shall use inch and a half lumber for my box hives. I shall make the tops sufficiently broad for four boxes, and cover with cap box. I shall use no more Langstroth hives; they are, in my opinion, too shallow.

Last winter my bees showed some considerable signs of dysentery; as yet I have discovered nothing of the kind this winter. I know of three parties so far that have lost from three to eight stands of bees—starved from want of judgment and care. My aim is to buy some twenty more stands of bees, if I can procure them, in March.

Wishing you great success in your undertaking to spread knowledge throughout our land, that the most ignorant may become skilled in the handling of bees with profit, I am

CAPT. W. W. WRIGHT.

Corydon, Iowa.

We think you will not find that bees do any better in hives made of one and a half inch lumber. We have tried them, but find no advantages, while they are much more clumsy to handle. We do not like the shallow frame as well for our own use, but very successful bee-keepers use them.

During last week two days were very warm, the thermometer standing at 70°. One of my colonies of bees swarmed out, every bee leaving the hive. I was standing by the hive when they came out. When they had all left I opened the hive and found that they had plenty of honey left. The hive was nice and dry. After I had examined the hive, I turned my attention to the bees. They circled about in the air for fifteen or twenty minutes, and returned to the hive. I watched the entrance and saw the queen enter with the rest. This they repeated the next day. Since that time the weather has been too cold for bees to come out. There is no brood in the hive,—or at least I discovered none,—nor did I see any bee-bread. The colony, which was produced by artificial swarming, is middling strong. The queen laid eggs and the bees reared young bees during the fall.

I shall confine them to the hive, which remains on the summer stand, and give them rye meal. They refuse to take sweetened water or syrup,

such as the other bees take. Shall I succeed in keeping them by this course, or will they come out and go away whenever I release them?

G. W. M.

We have never seen such an instance, and cannot even "guess" at the cause. Will some one answer? Notice Benedict's article in this number.

I am wintering my bees on their summer stands—in fact, we never think of wintering them any other way here. On the 24th inst. my bees were quite busy carrying in bee-bread, and are continuing it every pretty warm day. It is very seldom we ever have to feed during winter. There are only from two to three months in the year that our bees are idle. I have the first and only frame hive in this part of the State, and have so far succeeded better than I expected I could do. I have only the black bees, but since I transferred them into my frame hives they have become perfectly gentle, and now I can handle them almost without any fear of being stung.

If you wish, I will send you bee notes occasionally from our favored bee land.

E. T. J.

Texas.

Send us all the information possible about your management, success, and even failures in the South. That seems to be just what bee-keepers who are commencing in the South need now.

I have six swarms of bees in my cellar, and I would like to know whether it is best to feed them in February to stimulate the queen to lay. They have honey enough to take them through. If it is best to feed them, how and what shall I feed them? Some say feed them in the winter; others say not, and, as I am a new beginner, I do not know what to do about it.

FRANK LEMON.

Michigan.

We would not feed in February in your climate. To increase brood rearing by stimulating food, the syrup should be given in season to have the hive populous by the time there is something to gather. The time can be easily calculated by remembering when the first yield of honey comes, and commence feeding about six weeks previously. Within the middle of March is quite soon enough to commence feeding to encourage brood rearing. This fills the hive—if properly done—by the last of April, which

is as soon as our very first honey harvest ever comes.

We would never feed in winter, save for the purpose of keeping them alive, and then we would feed candy instead of syrup. To give them liquid food when they cannot fly and discharge their foecal matter is not wise. Sugar syrup is the best food next to diluted honey, and should be given to them on top of the hive, or at one side in some way, so that the bees must take it a trifling distance to store it. When done in this way it has the same effect on bees as when honey is secreted in flowers, especially if it be given regularly in small quantities, and the queen commences laying rapidly.

We have used a square oyster can, open on the sides, placed up under the cap or at one end of the hive. It makes a good receptacle for the food.

If we were to feed on a large scale, we would invest always in a Harrison bee-feeder. The price of it would be saved by its convenience and absence of waste.

Great caution must be exercised when feeding in spring, or robber bees will be attracted and mischief done. The March number will contain full directions for building up and increasing colonies.

The following may or may not be a remedy, but if I try that kind of nucleus again, I will secure a sound, clean board, drive a single stake into the ground, nail the board upon its squared top, and gird the stake with tar. My impression is that a full stock strong will not be seriously annoyed.

But here comes my neighbor:—has kept bees many years—is now using successfully the American hive,—who says he has had strong colonies actually driven out by these little creatures; has seen the ants fasten upon the legs of the bees, which seemed utterly powerless against a foe protected apparently by its very littleness. His remedy is camphor gum placed upon the top of the frames.

APIS.

Story Co., Iowa.

We have often said that ants did no harm "that we could see;" but we referred to black ants, not to the small red ants. We have never seen these

about a hive, but can well believe they would ruin the honey and greatly annoy the bees. We have used oil of tansy with good results in ridding pantries of red ants.

If any reader has had experience with these insects in his hives, we want to hear from him.

They go where they please in houses. For instance, we once left a trunk over night near the door of a pantry in a country hotel. A package of candy near the center of the contents of the trunk was found by the red ants and completely covered, in spite of "bolts and straps." At another time, a loaf of wedding cake, left on a table in a large parlor over night, was found and ruined before morning, although two rooms with closed doors intervened between pantry and cake.

I have a hybrid queen that I think should be reported to headquarters for her conduct. She continues to lay. To-day there is considerable brood ready to hatch, and eggs just laid. The colony is by no means large, and only has a reasonable amount of honey on hand; has not been fed a drop of honey since last spring. Have you ever heard of a case of the kind? I will keep an eye on her, and report if she continues laying.

W. B. CHEEK.

Buncombe Co., N. C., Dec. 13, '73.

We have never seen but one instance of a queen's depositing eggs in December, though it is quite common for them to begin laying in the latter part of January.

We hope you will report again respecting her, and especially notice if she produces *workers*. A drone-laying queen will lay at all times of the year.

This is the second year I am keeping bees. I had six weak colonies last fall a year. They all died the next spring except one Italian queen. I now have twenty stocks in the cellar; most all in movable comb hives; caps off; quilt on top made of one thickness of sheeting and two thicknesses of woolen carpet, the sheeting next the bees; this is tacked to the under side of a frame the size of top of hive, and made of strips of board five-eighths of an inch by one inch, across the center of the frame a board five-eighths of an inch thick, with an inch hole in the center, and wide enough to set feeder on. The quilt is tacked to the under

side of the frame and board and around the inch hole. Half inch entrance open across the hive; wire cloth over it to keep in the bees. I have the hives setting on a long frame reaching across the cellar; setting on the cemented floor, and touching nowhere else. My object in this is to keep all jarring from the hives. I find that noise does not disturb the bees, unless there is a jar connected with it.

Mercury stands at about 40° above zero. I keep the cellar dark. If I go down quietly and put my ear to the entrance, I can hear a dull roaring or humming noise. I should like to know if this is natural for them when they are doing well, and also if in any particular I could have bettered my hives.

C. KENDIG.

Du Page County, Ill.

We think you have managed your bees excellently well. The "humming noise" is just as it should be, and all is right when you hear it.

We have received proposals by which we can furnish the *American Bee Journal* to subscribers clubbing with the NATIONAL at low rates. We will send both for \$3.00. As one is published on the 1st of the month and the other on the 15th, those sending for both will have semi-monthly reports from bee-keepers. Mr. T. G. Newman, the publisher of the *American Bee Journal*, we know to be an accomplished journalist, and we are sure that while it is in his hands nothing abusive or personal will find a place in its columns, as has sometimes been the case.

Hives should be painted as soon as made, and three or four weeks before being used, as the smell of fresh paint is offensive to the bees. They may be painted every shade of color, for the sake of variety, but red is most apt to be noticed from a distance, while white or clouded looks best near by. To cloud a hive, paint it white, and while the last coat is fresh, place the hive in a horizontal position, passing under it the smoke and blaze of a lamp.

If the clouding be done in a room out of the wind, with a little practice the hives may be made to resemble marble, and are very ornamental, though

costs nothing for material, and can be done in five minutes.

The following recipe is taken from the *Bienen-Zeitung*: "Two parts of fine sand well sifted, one part of best hydraulic cement, one of buttermilk, and one of curd from which the whey has been well expressed. Mix thoroughly and stir repeatedly to prevent hardening. Apply immediately with a common paint brush, and add a second coat in half an hour. In two or three days, if dry, give the hives a thin coat of oil, to which any desirable shade may be given!"—*Bee-Keepers' Text-Book*.

AS THE work of spring in the apiary begins with a large number of our Southern readers in this month, we give our hints on this subject now, though a little in advance for Northern and Western bee keepers.

HAVING used the Willcox & Gibbs for six years, and seen it in operation always side by side with other machines, we cordially endorse the following advertisement:

The "Willcox & Gibbs" excels all other machines, not only in the simplicity of its mechanical features, but also in those points of practical utility which are most sought after. No other machine turns out so useful, durable, and handsome a seam, with so little exertion or painstaking on the part of the operator.

HONEY is not made by the bees, but is simply gathered by them from the nectaries of flowers, and from that peculiar deposit on vegetation during summer, called "honey dew."—*Dr. Kirtland*.

WHAT OTHERS SAY.

NATIONAL BEE JOURNAL.—We have received the December number of this publication. When we learned that Mrs. Ellen S. Tupper had become its editor and proprietor, we confidently expected that it would become in every way worthy the support and encouragement of every one who kept, or who wanted to learn how to keep, bees. An examination of the number before us proves that we were not mistaken. It is filled to the brim with plain, practical, and sensible articles on bee culture, which will serve as a guide to the beginner and an aid to the experienced in this branch.

of industry. Mrs. Tupper is somewhat of an enthusiast on the subject of bee raising, but she is a woman of polished intellect, and her great practical experience in her business and in her writings, so combines this experience with ripe judgment, common sense, and earnestness of purpose, as cannot but make the *BEE JOURNAL* of immense value, and a welcome visitor to every present and prospective apiarist. The periodical is published monthly at Des Moines, at \$2 per annum, with a work on bee culture, and a package of Alsike clover seed to each subscriber. Sample numbers sent free on application.—*Fairfield (Ia) Ledger*.

We were certainly much pleased to receive Mrs. Tupper's *JOURNAL* for November done up in a style so neat, and with such an attractive cover, that we never should have recognized the old *NATIONAL BEE JOURNAL* at all, were it not for the name. We shall have to conclude that woman's taste is certainly equal, if not superior, to that of the sterner sex in such matters. The typography and general appearance of the whole fully agrees with its appearance externally, and the whole work certainly does her credit. We wish her a large list of subscribers. Mrs. Tupper's *JOURNAL* is certainly valuable, it could not well be otherwise; and right here we would ask why it cannot be called "*Mrs. Tupper's Journal*," and thus aid in making it possible to explain to our friends that the *NATIONAL BEE JOURNAL* was a separate institution from the *National Agriculturist and Bee-keepers' Journal*, of New York?—"Novice's" *Bee Gleanings*.

INDIANAPOLIS, Indiana, Jan. 23, 1874.

MRS. ELLEN S. TUPPER:—Permit an old printer and publisher to congratulate you on the very neat appearance of the January number of the *NATIONAL BEE JOURNAL*, as well as the contents of the same.

Not being a bee-keeper, or knowing anything practically about bees except as learned by reading, it seems to me the matter in your *JOURNAL* is just the thing adapted to the wants of those interested in apiculture. A person can gain more practical information in regard to bees and the manner of their treatment by reading the "Editorial Department" in one number of your magazine than in any other manner, and if I were engaged in the business, no money would make me do without it.

Hoping you may meet the success you so richly deserve, I remain,

Yours,
JOHN G. DOUGHTY.

BUSINESS NOTICES.

Bee-keepers in Northern Iowa, Illinois, or Minnesota who are not successful in securing large yields of honey from their bees, or a desired increase, may find it to their advantage to correspond with J. W. HOSMER, JANESVILLE, MINNESOTA, enclosing stamp.

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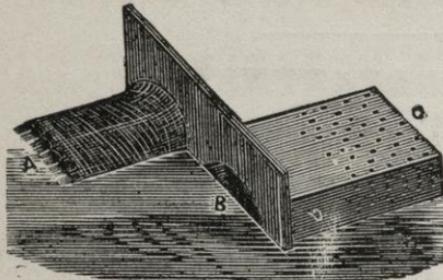
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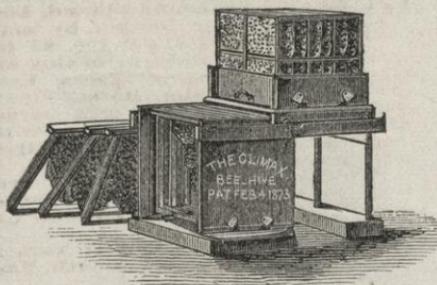
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