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Vol. V.

No. I.

NATIONAL

BEE JOURNAL



A MONTHLY MAGAZINE
DEVOTED EXCLUSIVELY TO BEE CULTURE.

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

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JANUARY, 1874.

DES MOINES, IOWA:
HOMESTEAD AND WESTERN FARM JOURNAL PRINT,
313 AND 315 COURT AVENUE.

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NATIONAL BEE JOURNAL

VOL. V.

JANUARY, 1874.

No. I.



WINTERING BEES.

I have said considerable on this subject already, but perhaps it will bear repetition. Much more ought to be said, and some things repeated and examined in the strongest light to be found. The cause of the dreadful calamities of the past two winters should be understood as far as possible.

A *post mortem* investigation often discloses the immediate cause of a person's death. It may prove tubercle of the lungs; and then unless the inquiry goes further and finds the cause producing tubercle, but little is gained. When bee-keepers find the cause of the death of so many bees to be dysentery, it behooves them to look further and, if possible, ascertain the cause of *that*. When we are not positive on any subject, we are apt to decide according to evidence that makes theory, or some pre-conceived notion of our own, probable,—allowing it to take the place of direct testimony. Now our hope is, by thorough and intelligent investigation to find the cause and remove it. Among the many investigators that have acknowledged dysentery as the cause, some few have gone further and decided that the malady is produced by the quality of their stores—impure honey; and, to prove that honey is not healthy for them, claim that the syrup of su-

rup, when fed, exempts them from the disease. Having fed the syrup somewhat extensively, I am pleased with the result, when fed as a substitute for honey, but have no faith in it as a preventive of dysentery. Because I have fed stocks with nothing but that, and had them affected with it seriously. Lest some may think I mention this case to support a favorite theory of my own, I will give the statement of Mr. Elwood, of Herkimer County, in this State, who is a candid man and close observer of facts, and has no theory to bias his judgment. One year ago he fed several stocks with syrup alone and every one had the disease as badly as those that had no syrup. These cases, even if there were no others, would show very clearly that the cause is not in the food. It is further proved by the case related by Mrs. Tupper, where from a row of stocks that gathered their stores from the same field, each alternate one was taken and removed to a cold, exposed situation, while the rest were kept warm. The first perished with dysentery, while the latter wintered well. It appears to me the only way to get rid of this conclusion is to impeach the testimony so abundantly given us. More than twenty years ago I became satisfied that cold weather produced dysentery. Actual experience gave me the idea. I had some stocks left on their summer stands till late in winter in a cold, bleak, corner of the yard. Snow covered the ground. Late in January they became uneasy;

hundreds would leave the hive on a cold day, discharging their fœces the moment they left it. I put them into warm quarters, and such as were left in the hive were quiet and came out all right in the spring. Here is a case where they were cured of what the cold had produced.

Food consumed by beasts generates heat, and they take it generally in proportion to the severity of the weather, to keep themselves warm. Bees seem to act on the same principle. But being, probably, natives of a warmer climate, their structure is different from many animals. Being small, one alone cannot generate heat enough to keep it in life in a cold atmosphere. A compact cluster can only maintain it, and then not without an abundance of food. Bees do not, when in a cold situation, seem to digest or burn their food in keeping up warmth, as the larger animals do. It is exemplified when they have worked in the surplus boxes till late in the season. Take off these unfinished boxes some cool morning before the bees have all gathered into the hive: most of them will fill themselves with honey before they can be got out of the boxes. The result is that the honey swallowed is not digested and warmth created, but discharged as fœces from such as are scattered before they regain the warm hive. When bees are very quiet in the hive in very cold weather, some must be on the outside of the cluster,—I mean the cluster inside the hive between the combs,—and, of course, colder than those inside. In ordinary winter weather it is mild enough on many days to enable them to generate sufficient heat to change places with those inside. But when the weather continues cold for months, as was the case the last two winters, these outside bees, stiffened with cold, are unable to change their position for a warmer one, their food is not digested, their bodies become swollen with fœces, and they must leave to discharge it. If

the weather continues cold, the colony continues to grow smaller in proportion to the length of time and size of colony. Some colonies maintain the proper warmth by having the honey distributed so that they can have empty cells near the center into which they can creep for mutual warmth, being more compact. Bees cannot exist but a short time in cold weather when between combs of sealed honey. They will, when properly clustered, endure any degree of cold for a time. When made warmer, don't think them safe unless they are made warm enough, and remain so long enough to enable them to change places with those on the inside; otherwise, the result is fatal. If this is correct, it will show those who have housed their bees, and lost them, that they were not warm enough even then. I am aware that some will say that they have thus successfully wintered bees many times, proving to themselves beyond doubt that they were warm enough, not considering that the place that was warm enough in 1870 was not so in 1871-2, because of the steady cold. This is proved still stronger by not finding a single case in the past two winters where the bees came out right, and a few, only, were housed together unless they had the advantage of artificial heat. In discussing this subject before, I have said: "Try the experiment of keeping them warm." I would now say that just this has been tried, and success has followed. M. QUINBY.
St. Johnsville, N. Y.

INTERESTING CORRESPONDENCE.

The following correspondence will explain itself:

Hon. Fred'k Watts, Commissioner of Agriculture:

DEAR SIR:—The North American Bee-keepers' Society holds its third annual meeting at Louisville, Ky., on Wednesday the third day of Decem-

ber next, and continues three days. This Society has a membership in 26 States, Territories and Provinces of Canada, and the interest increases each year, but it is not commensurate with the interest it represents. All other branches of agriculture have been fostered by the government to a greater extent than bee-culture. With the exception of fruit-culture it is perhaps the only branch of rural industry that is spread over the whole country and can be pursued with success everywhere. For the capital and labor necessary there is none that brings a larger return. It is not difficult to realize 100 per cent., and in single instances ten times that much has been accomplished.

Until lately little was known of the instincts and physiology of the honey bee. Scientists, on account of the inconvenient construction of hives, and perhaps from a want of interest in the subject, had paid but little more attention to them than to the thousands of other insects that came to their notice. By a new arrangement of the hive by which every sheet or piece of comb could be taken out and handled at any time, this difficulty was obviated, and some German naturalists soon made such observations as led to discoveries in their habits that gave a new impetus to the business. The new form of hive was introduced by Rev. Mr. Langstroth, in 1852, and much light thrown on the subject by him in a book he published about that time, and also by the new editions of Mr. Quinby's book published afterward. But up to this time no American of scientific eminence has made original investigations or added anything to the knowledge imported from Europe. They have been so engaged in catalogueing and naming the thousands of species and varieties of insignificant insects that swarm around, that they have found no time to attend to investigating the only one, with the exception of the silk worm, that has been domesticated in our

country and whose culture is profitable.

They cannot tell you whether the *Apis mellifica* is indigenous to the United States. They cannot tell you whether we had distinct varieties of them before the introduction of the Italian bee. They know nothing of the parasites of the bee peculiar to the country. The bee "cholera," or "bee disease," which has been raging since 1868 over a large part of the country, has never been investigated by them. Whether their honey was infected with poison, or infested with fungus, or animalculæ, and when eaten by them generated in their intestines, or whether the disease was malarial, has had no investigation from them. The bee-keepers have lost more bees, in value, than the owners of horses have lost by the horse disease, or the cattle owners by the rinderpest; than the grape-growers by mildew and rot, or the potato growers by the Colorado bug and the *Cantharis*,—yet no investigations have been made to discover the cause, either by the government or competent scientists.

Until about 1859 no new breed of bees had been introduced in the country, when an unsuccessful effort was made by the Government of the United States to introduce the Italian bee, and not renewed; but in the following year private enterprise succeeded, since which we have had numerous importations of this variety, greatly to the benefit of bee-culture, and also several importations of Egyptian bees (*Apis fasciata*), which amounted to nothing from the fact that they were impure.

There are numerous varieties and species of honey-producing bees in the world, to which the attention of the bee-keepers of Europe and America has not been turned, from the fact that they were inaccessible to individuals, and the government has not considered the importance of introducing them. The bees of the Malay-*an Islands* (*Apis Testacea*), which are

numerous in the Island of Borneo, and of several varieties, might be found valuable. Of the species *Apis faciata* there are varieties peculiar to Africa that are no doubt desirable, as those indigenous to Egypt and Northern Africa are the best honey gatherers. Besides these are the *Meliponæ*, indigenous to America, extending as far North as the borders of Texas, and numerous in the tropics, of a great number of species, from a size smaller than a house fly to larger than a bumble bee (*Bombus*), most of them without stings. The several species *Urussu* are the largest, and if they could be domesticated would be able to gather the honey from the red clover, which produces more honey, perhaps, than all the other honey plants of the country, but is inaccessible to the bees we now have. There would be probably no difficulty in introducing these bees in the extreme Southern States, and such of them as inhabit hives, like our *Apis*, could no doubt be cultivated even in the Northern States, when we learn enough about them to know how to manage and care for them.

All this by way of bringing the subject to your notice, and in conclusion I would say on the part of the North-American Bee-keepers' Society, that they would be pleased to have your Department honor them officially by sending a delegate to their next meeting, or at least recognizing them by a communication.

The Government, through its consuls and officials in different parts of the world could easily have sent home all the different species of bees in sufficient numbers and placed in the hands of competent bee-keepers, to be designated by this Society, or otherwise, to be experimented with, and however divergent their instincts, American ingenuity would like'y be able to manage them and devise hives and other appliances by means of which their labor could be utilized,

and a lasting benefit conferred on the country. Yours respectfully,

D. L. ADAIR,
Cor. Sec. N. A. Bee-keepers' Society.

DEPARTMENT OF AGRICULTURE,
WASHINGTON, NOV. 4, 1873.

Mr. D. L. Adair, Corresponding Secretary North American Bee Society, Hawesville, Ky:

I have your letter of the 23d ult.

It is not because of any want of interest felt by this Department in the subject of bees as a branch of agricultural industry that no active measures have been taken for the introduction of new species, or the improvement of those we have, but because of the intrinsic difficulty of dealing practically with the subject through the means possessed by the Department. I feel that bee-keeping is a branch of industry that well deserves the attention of and investigation of men of science who can devote themselves to its increase and development, because it contributes so largely to domestic productions.

This Department has neither the means nor the authority to make practical experiments or observations on the subject. All we can do is to aid private enterprise by giving such encouragement to it as to learn and and mark the result of their enterprise, and give effect to it through the medium of the annual and monthly reports. Respectfully,

FRED'K WAITS,
Commissioner of Agriculture.

NOTES FROM SOUTHERN INDIANA.

THE CONVENTION.

I have just returned from my first attendance upon the North American Bee-keepers' Convention. I was much disappointed in meeting so few of the bee-keepers of the country, but my disappointment did not seem to be any greater than that of the older members of the association. The money panic, or some other panic, seems to have chilled pretty thorough-

ly the bee fever of the country, at least so far as attending national conventions is concerned. The half day I had the privilege of being present was spent very pleasantly and profitably to me in listening to the experiences of veteran apiarists. I regret that I have not been able to attend former conventions, and that I could not be present at all the sessions of this. I trust that I may be more fortunate in the future. I would suggest the holding of the conventions in the spring or summer. The bee-keepers would then come up fresh from their apiaries, their minds crowded with experiments and queries, and all alive upon the subject of apiculture. December, and even November, generally finds our bees asleep in their winter quarters, and ourselves correspondingly torpid on apicultural questions. An earlier season would also furnish more pleasant weather for holding and attending conventions,—an argument that can be appreciated by those present at Louisville.

THE NATIONAL.

I am glad that Mrs. Tupper, the acknowledged Queen among bee-keepers, has taken hold of the helm of this journal; but being a Hoosier "to the manner born," I am sorry she felt it necessary to remove its headquarters from the Hoosier State. Yet I know of no reason why this removal should render it any less valuable to any part of the country. The department of "Notes and Queries," as presented in the November number, I consider of special interest and importance. Elaborate essays and long-winded communications are well enough in their place; but what practical bee-keepers want, and especially the less experienced, is some medium through which they can obtain ready and reliable solutions of the mysteries with which they meet in the apiary. It will not be deemed flattery toward the editress of the *National*, or detraction from the just merits of other veteran apiarists,

to say that on all apicultural subjects, the long experience and close observation of Mrs. Tupper entitle her to be considered *an authority*. Long may the *National* live and richly may it prosper under its present *regime*.

MY BEES.

My success in bee-keeping the past season has not been the most flattering. My queens did not get over their *panic* till late in the spring. By that time my stocks were reduced from about fifty, the number I sat out in March, to less than twenty, and part of these were queenless. The weather was cold, and they were slow in building up their colonies. The flowers did not seem to secrete the usual amount of honey, or, at least, the bees did not collect the usual amount of stores. The months of May and June, our ordinary honey season, closed, and I had not then over twenty-five pounds of honey. After that they did not make enough honey to supply the wants of the hives. When the frosts of autumn came, they had consumed all the stores laid up in the early part of the season, and had little or nothing upon which to winter. I don't think they had an average of one pound to the hive. Several of the most populous stocks literally starved to death before I discovered their condition. I should state that I had increased my stocks since spring to about sixty. These I reduced in the fall, by sales, uniting and losses, to twenty-seven. These I fed up in the first part of October on good sugar syrup. The queens again went to laying, and by the first of November, the time I housed them, they all had young bees. The twenty-seven hives are now stored away in my cellar, piled up one on top of another, and are perfectly quiet, no symptoms of disease appearing among them. I have strong hopes that I will get the whole lot safely through the winter. Next season I shall abandon the queen-rearing business, except for the pur-

poses of my own apiary, for there is no money in it at current sales; shall divide my stocks as little as possible, and shall expect a little better success in the honey line than I have had in the last two years.

AN UNUSUAL YIELD.

Last spring I sold Harry Goodlander, of Kosciusko County, Indiana, two small hives of Italian bees. This last fall he wrote me he had taken from one of those hives over five hundred pounds of honey. As a practical proof of his superabundance of honey, he recently returned me, gratuitously, one of the hives I had sent him, packed full of jars of beautiful extracted honey. Friend Goodlander has certainly found the El Dorado of the honey bee.

M. C. HESTER.

Indiana.

NOTES FROM CONNECTICUT.

MRS. E. S. TUPPER:—I am wintering twenty-three swarms of bees on their summer stands. The honey boards were removed, a quilt laid over the frames, and about three inches in depth of fine cuttings of woolen cloth spread over the quilt. Some of my hives hold sixteen frames. From these I removed four frames from each side, leaving eight frames in the centre for the bees. Division boards were then inserted, and the spaces thus formed at the sides were filled with the cuttings also.

Bees do not gather near as much honey here as in the West, but I think they pay pretty well here in Connecticut if properly managed. Mine have given me an average of 55 pounds surplus honey per hive each season for three years past.

I have never known or heard of a case of foul brood, dysentery, or any other disease in this or adjoining towns.

Our surplus is chiefly gathered from white clover, though I have some seasons taken some apple blossom and sumac honey. We generally get a

good yield from golden rod, from which the bees lay up their winter supplies, as they seldom get any from buckwheat.

Bees are kept on the old plan—box hives and brimstone being the order of the day in this *bee-nighted* land.

I am the only one, in this or any of the towns near, having Italian bees, movable comb hives, or honey extractors, and until one year since was the only subscriber to a bee paper.

But there is a good time coming. I was visited almost daily the past season by persons desirous of seeing my bees, hives, extractor, etc., asking questions about making swarms, raising queens, extracting honey etc. Extracted honey sells readily at 20 cents per pound, comb 20 and 25, box 30 and 40, extra nice white clover in box 45 and 50 cents.

Please send me a sample copy of your paper, and oblige

S. W. STEVENS,

Fairfield County, Conn.

GRAPES AND BEES.

In conversation with a very intelligent man, he informed me that for three years he had his sweet, tender-skinned grapes sucked dry by the Italian bees, and also some of his friends suffered the loss of their grapes from the same cause. One year he saved part of them by covering the grape vines with cloths, mosquito netting, I think he said he used. The bees would light on top of the netting and not reaching the grapes would fly off. He was very sure they were not punctured first by any animal insect or fungus.

A. J. P.

NOTES FROM KANSAS.

I purchased one hive the spring of '72 for Italians which turned out hybrids, swarmed the last of May and left for parts unknown to me. I then divided the remainder which each cast a swarm and all filled up. I sold \$10 worth of honey, and

kept as much for use at home. Last spring I had more than a half bushel of bees leave me for the woods, and yet I have eighteen good stands that have more honey in them than they ought to have to winter well. Being sick I was prevented from taking it in proper time.

JACOB EMMONS.

Pottawattamie County, Kansas.

MY EXPERIENCE AS A BEE KEEPER.

In Alleghany county, Penn., when a lad of fourteen years, I found a swarm of bees hanging by the wayside, on a small bush. I procured a box, put them in it, and commenced the business of Apiculture on my own account.

Four years after the above my father removed to North Bend, eighteen miles West of Cincinnati just in the corner of Indiana, and of course I was compelled to sell out my stock consisting of 18 stands or boxes, for one hundred and two dollars, which turned out to be my bees but father's money.

My next trial commenced in Indiana, June 1842, by being called to the fact of the swarming of the bees of one of my new neighbors on Sunday, while the folks were at church, and by the time they returned from church I had boxed three swarms, one of which the proprietor gave me for my trouble, from which I accumulated so many that I killed several boxes for the honey. Having supplied our family during all these years, until 1852, when in order to go West I again sold out what I then had for \$178, since which time I have not had any bees at all.

My manner of keeping, was to put them in common box hives and once a week during warm weather to look for and remove the moth, and to shelter them from rain, and from the north and west winds of the winter, and to feed the weak swarms when I thought they required it, by putting a

saucer of molasses in the inside of the box containing the weak swarm.

WM. N. GREER.

NOTES FROM MINNESOTA.

MRS. EDITOR:—Some one says that ninety out of every one hundred bee keepers entirely fail to succeed and that nine out of the other ten are only partially successful. Why is this so? Some say that it is on account of poor seasons, but I do not believe there was a year so poor but there was some time during the season when there was a few weeks of good honey weather. Nor do I pretend that bee keepers can make any flower secrete honey at his will, or that he can control the weather; but I do believe he can raise such plants as will produce honey every season, and more, he can keep his hives of bees in such a condition that they will be ready to gather the honey when the yield does come, and if he does, he will very seldom, if ever, fail to get a good surplus of honey. But if bees are kept to their own way they will rear some bees when there is honey to be gathered. If there is a dearth they will soon run down again to a very few bees, and when there comes one, two, or even three or four weeks of first-rate honey weather, they will be unable to gather any for want of workers, as what bees there are in the hive will be employed raising young bees. By the time it is all over—say if it does not last more than four weeks—the hive will be again filled with bees and nothing for them to gather, and the bee keeper will be heard to say that this is one of the poorest seasons, when in fact the fault is entirely his own. When Mr. Novice said "The brain work required to properly manage bees might be greater than that required to teach school, etc.," he was nearer right than will generally be admitted, especially by those who have long kept bees in the old way, and have come to the conclusion there is not much to be learnt about bees

that they do not know. Such bee keepers will often have poor seasons, and bad luck; their neighbor's bees will rob them, and the country will be overstocked with bees, etc., etc. There are too many who go to keeping bees who do not think it requires much talent or study to ensure success, but when they try it, they usually soon fail. Now, when we find one that is really successful it will be one that when he does have a loss will *never* give up until he finds out exactly what was the cause, and in nearly every case he will find the loss, however severe, to be a very small price for the knowledge gained.

In regard to poor seasons, this has been regarded by most of the bee keepers in this part of the country, as very poor indeed. Some have not got any surplus hardly; others have had almost their entire apiary starved to death, while others in the same localities have secured a splendid surplus.

Now is this attributable to Providence, luck and poor seasons, or is it the management of the bee keeper?

A. B.

Minnesota, Dec. 22, 1873.

WHAT AND HOW TO FEED AND WINTER BEES.

MRS. E. S. TUPPER:—Please permit me to communicate to the readers of the NATIONAL BEE JOURNAL a statement of what and how I feed and winter bees, etc. It is the result of several years' experience.

To each quart of sugar add one pint of hot water, heat to the boiling point and skim, or, to every three pounds of sugar add two pounds of hot water, stir, heat, and skim as before stated. As soon as cool enough it is ready for the bees. For feeding in the spring, summer, or early in the fall, common grades of good sugar do very well, but for late fall or winter feeding, use the most refined grades. Feeding for winter should be done during warm weather soon after the first killing

frosts and as fast as the bees can store away the syrup, and until the brood combs are well filled. Molasses, sorghum or the poorest grade of sugar should never be used. Good sugar is the cheapest and is also healthy for the bees, while honey made from other sources in many parts of the country often proves fatal to them while confined to their hives, when too cold for them to fly. When bees are fed late in the fall, or during continued cold weather, place their hive at an only window in a room kept constantly warm where the bees can crawl back into the hive after flying. Keep the room warm until they have stored *evaporated* and *sealed* over enough syrup to do them until spring. With my hive I keep the bees confined to the hive by placing a screen in front of the hive, securing a place for the bees to fly in. A frame of empty comb filled with syrup poured into the cells from a suitable height may also be placed between the screen and the end of the hive which, being exposed to the light and open air, will cause the bees to remove the syrup to the interior of the hive. By this means the bees may be kept in a parlor or any other suitable warm room while being fed and at any season of the year. When feeding bees in the spring or any other time, care should be taken not to give them much more syrup than they will consume in preparing food for the young larvæ and for building combs necessary for the brood until there are more bees than are necessary to rear all the brood the queen is capable of producing. In judicious feeding lies one of the great secrets of success. Plenty of flour should be given the bees as early and as late in the spring as they will use it. It may be protected from robber bees by means of the screen arranged as already pointed out. In the sunshine is the most favorable place for the flour, which may also be made of different kinds of grain. A cool, still, dry and perfectly dark place with thorough

ventilation to the hive is the most favorable place and condition in which to winter bees. They should be kept as quiet and free from disturbance as possible. To prevent the accumulation or retention of dampness or water in the hive it must be well ventilated and should also be so arranged and protected that the bees can economize their animal heat to the best advantage. Proper conditions will ever secure success in wintering bees. The required conditions may be enumerated as follows:

1st. A productive queen with bees enough to rear a brood.

2nd. Suitable combs stored with wholesome food.

3d. A pure atmosphere of a suitable temperature, about from 40° to 50° above zero being the best.

4th. No disturbance of any kind, with a proper exclusion of light, total darkness and stillness being best for keeping the bees quietly confined to their hives.

A good method of out-door wintering, particularly with my hive, is to set up and tie a shock of corn fodder around each hive, enough to break the winds and keep the hives dry, at the same time packing plenty of straw or hay around and over the frames, after properly ventilating the hive and protecting the bees from the mice, and also securing the bees a small and suitable passage to and from the external atmosphere. The straw and fodder will absorb the moisture collecting around the bees carrying it to the external atmosphere and also more fully protect them by confining their animal heat to the hives.

I hope that the foregoing may enable some of my fellow bee keepers to be more successful in feeding and wintering their bees than heretofore. With that hope I remain a friend to bee-manity.

S. T. WRIGHT.

Illinois, December, 1873.

REPORTS come from various quarters that bees are wintering well so far—no appearance of dysentery reported anywhere. The favorable weather has something to do with this, no doubt, but bee-keepers have learned by experience to avoid many of the causes of the disaster hitherto. We hope to hear through our correspondents reports from every section of the country. Those who hear of losses, if any, will report them, and also give the condition in which the bees were wintered. Some complain that the convention at Louisville "took no action in the matter of the losses of last winter, not even entering into a discussion of the subject." We think they were wise. The matter has been sufficiently ventilated, so far as opinion goes. What we now want is full reports of losses and the facts connected with the condition and manner of wintering bees that have been affected. Theory in this matter is worthless unless supported by facts.

IN answer to inquiries we say: *Clubs for the JOURNAL* may be made up from different postoffices. We received forty subscribers sent by one woman yesterday—*JOURNALS* to be sent to *eighteen* different postoffices. A little work like this will help us, and we pay for it liberally.

REMEMBER that the *JOURNAL* is not published until the 15th of the month, instead of the 1st. We choose this time that those who take other journals may have this at a different time. It will be mailed promptly. All who do not receive it will confer a favor by notifying us.

DIERZON watched a queen bee when laying, and noticed that she laid eighteen worker eggs in three minutes. She appeared to dispatch business still more expeditiously when laying drone eggs.

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JAN.

DES MOINES, IOWA.

1874.

HIVES—THEIR HISTORY.

The home of the honey bee was originally in the hollow of a tree or the cleft of a rock, and in these natural hives honey was found in great abundance. Trees containing hollow parts filled with honey and bees, were appropriated and sections of them sawed off and removed to the homes of those who found them, and allowed to remain as they were. Honey was cut out without regard to waste and the empty space refilled. Round boxes were made to contain new swarms and when the number increased more than was desirable, the fumes of burning brimstone were used, and the bees killed and their stands used. The next advance made in this country was that of the neat box hive, upon top of which wooden and glass boxes were placed and entrance holes made to them from the main hive, so that pure honey was obtained in a nice form. The Greeks seem to have had, from time immemorial, strivings after more rational methods of bee keeping. Very early they adjusted bars across their hives to which the comb was attached. These bars were used long ago in both Germany and England, but with no understanding of the advantages with which they might be used.

Huber had a glimpse of important ends to be gained by obtaining control of the interior of the bee hive, when he constructed his leaf hive. Morlot saw the advantages of the plan, but never obtained his object, though he modified Huber's leaf hive.

Several other attempts at control of the comb were made about the same time, but in 1851 a Russian, Propokovitch by name, invented a hive where the combs were to be built each on a separate frame, and so placed as to be taken out at pleasure. His hive was to be turned upside down at will, an operation he alleged to be of utmost importance in the management of bees. But the bees wilfully interfered with all his plans, and his hives are unmanageable save for himself.

Dyerion, of Germany, in 1855, publicly announced his movable bee-hive which he had fully tested in his own apiary there, and has since contrived to use with very little change. Several years after, M. Deleauvoys, of France, introduced a similar hive into his own country with an evident conception of the value of a movable comb principle in a hive. Some time after this, movable comb hives were made in this country,—first, by Langstroth, in a greatly perfected form, and from that time until the present we have been subjected to a constant succession of patent movable comb bee hives, in all shapes, forms and sizes. We know of one desk where fifty-six patent bee-hive rights are stored away, and "still they come."

The danger is that in the annoyance this patent hive business brings, we condemn all. This is unwise. Bees will work no better in the very best of them, it is true, than in the old hollow log,—hives are not for their aid, but for that of their owner, in caring for them and obtaining most

profit from them. In the log and the box, without the movable combs, though they may do well for a time, it is impossible to give them aid or to ascertain the trouble when it occurs. With every comb built on a frame which can be removed at will, we can keep each hive in a healthy working condition. Whatever is wrong we can apply the remedy. If the hive becomes queenless, the trouble is at once apparent, and a new one can be given. If they have too little honey, they may be fed; if too much, it is easily taken away. We, therefore, after long experience, say that movable combs are indispensable to obtaining best results with bees. The plain-er the hive in which these frames are used, the better. We prefer the frame nearly twelve inches square; others like it longer and more shallow. If the desire be to obtain the most surplus honey possible, a large hive containing ten, or even more, of these frames, should be used. If a rapid increase of stocks be desired, eight of them is sufficient. All slides, and moth traps, and drawers are objectionable and unnecessary. The simpler the hive, the more easily it is managed. The drawers, and slides, and doors may open very nicely in a model hive, *empty*, but with a colony of bees in it, the matter is changed. We want our bee-hives so that they can be opened and closed with ease, whether they have been examined the day before, or not for six months. It pays to paint hives thoroughly and neatly.

We think that much remains to be learned about bees and their management. Much has been learned the past two years, but it is not in the direction of improvement in hives, and if the many who are every year spending money and time in patenting hives to do the work no hive will ever do, would spend the same time in patient care of the bees, learning how best to increase, how to keep them strong under all circumstances, how

to obtain honey even in poor seasons, and how to avoid loss in wintering, most rapid progress would be made.

NATURAL HISTORY OF THE HONEY BEE.

[Concluded]

There is much ignorance with regard to the sources from which bees obtain honey. Many seem to suppose that they find it only in flower gardens and near at home: but they go miles in search of it, and obtain it from the blossom of nearly every tree and plant. From the time hazel buds appear in the spring until frost kills the blossoms of the buckwheat and the golden rod in the fall, there is, in many places, a succession of honey-producing flowers. The blossoms of the soft maple, the elm, the willows of various kinds, the locust, sugar maple, all fruit bloom, wild and cultivated, yield either honey or pollen, and many of them both. Later in the season, the clover, linden and buckwheat, with many wild flowers, furnish supplies.

Though bees go miles for honey, they do not store much, if any, when obliged to go over a mile for it. But very few locations are found where honey is not abundant within the radius of a mile in all directions.

Again: Though flowers abound, the secretion of honey in them depends much upon atmospheric causes, which are not fully understood, and our good and bad honey seasons are the result of these causes. In some years, like the summer of 1872, though bloom of all kinds may be abundant, no honey is secreted in anything. A hive of bees on a square mile would fail to gather any surplus at such a time, while one hundred could do well as soon as the weather favored the secretion of honey. A fact often referred to by writers upon bees may be mentioned here. It is easy to put sheep enough on a section of land to take off it all the herbage, and once eaten off time is required for it to

grow again before they can find supplies; but when the weather is favorable and honey abounds in the blossoms, so soon as a cup is emptied of its honey nature refills it. Long before the bee can return to the flower, after taking its load to the hive, the tiny cup is filled to overflowing. Knowing these facts, some leading bee-keepers assert that it is hardly possible to over-stock any section of country with bees in a good season, though in a poor one a very few colonies would not live without feeding.

The natural way in which bees increase the number of colonies is by swarming. The question, "Why do bees swarm?"—so often discussed—has no practical value, but any one to be successful with bees must know *how* they swarm. Hives from which every comb can be taken out and examined, have enabled us to understand this fully. In the spring, very early, the queen increases her laying, occupying every cell within reach of the circle which the bees can cover. These eggs hatching by the warmth of the cluster of bees become larvæ. These worms are fed by the young worker bees until eight days old, and then are sealed over and remain in the chrysalis state until, at the end of twenty-one days, the young worker bee emerges. Under favorable condition, this brood-rearing increases until all empty cells are filled with bees in different stages of growth, and the hive is overflowing with bees. Drones are raised in greater or less numbers, requiring twenty-four days for development, and then the bees build royal cells, as they are termed, and numerous young queens are reared.

About the time that some of these are sealed over in their chrysalis stage, the larger part of the bees—young and old, workers and drones—come out of the hive with the old queen, and "swarm," as we term it, to found a new colony, in a hive, if its owner has been thoughtful and watchful enough to provide one, or to leave, if

neglected, for parts unknown in search of a hollow tree. This, in brief, is nature's way of increasing colonies of bees, and upon our knowledge of this, and our control of it, depends in a large measure the success of the bee-keeper. We find that although to be successful in our management these instincts must be borne in mind, yet we can greatly improve upon nature's way by adapting our methods to the immutable laws which govern bees.

One reason why the majority of patent bee-hives are so worthless for the purpose for which they are constructed is that they are made with reference to what the builders would like to have the bees do, instead of in accordance with what they *will do* invariably, in spite of them.

We shall try to make this matter so plain in our directions that a novice, even, will find it easy to secure a healthy increase at the same time he obtains a good yield of honey.

WE notice that several agricultural papers have copied articles from the NATIONAL BEE JOURNAL without giving credit. We hope they will not neglect this. We are willing to furnish them all any matter they select, but desire proper credit. *We write hereafter for no other paper than our own.* We have secured the best and most practical bee-keepers in the country as contributors to the JOURNAL, and their articles are also free to all papers who choose to use them—*if they give us credit.* We really trust our friends will not force us to the necessity of copyrighting our journal.

THOSE who are canvassing for the JOURNAL will please send on names and money just as fast as possible, without waiting until they have the whole number. We are revising our lists, and hope to hear from *every* present subscriber before we mail the February number. While we are taking many new names, we are specially grateful for renewals of old friends.

AND Notes and Queries

Why do you not put the JOURNAL at \$2 a year to every subscriber? It is well worth it. Do away with all club rates, premiums, etc. Then, too, why do you keep that old-fashioned, straw hive on the cover? Why not put on something more modern?

G. SCOTT.

Luzerne County, Pa.

We agree with you in thinking we are making the JOURNAL worth \$2 to each one who takes it. We repeat what we have said before: that the premiums and club rates are to be considered as payment for those who work hard in obtaining subscribers. We pay liberal cash commissions, when preferred.

As to the straw hive: it seems the only form which has any poetic associations, and everybody knows what it is. Talk of putting a patent hive on the cover! Whose shall we put there? and how shall we make peace, after doing it, with the 999 whose hives we cannot exhibit? We think it safest to keep the old straw hive where it is. There is room in our advertising columns for pictures of all the others in turn.

I received an Italian queen in September by express. I had good luck in introducing her, for we went according to your management. I watched for Italians all the fall, but I don't know why I could never find any. The swarm seemed to be active, no appearance of being queenless. The workers seemed to be numerous, but no difference in their appearance from those in the other hives. Seemed strong and heavy when put in the cellar.

We have had a poor year for honey, but good for increasing swarms. I have now forty-eight put away, with plenty of upward ventilation.

Mrs. S. A. HILL.

Fayette County, Iowa, Dec. 10.

Your queen, no doubt, was killed or lost in some way, and a black queen reared in the hive from the brood she left. This sometimes happens in this way: The bees start queen cells while the queen is in the cage, and

when she is released, though they do not hurt her, they seem to have the swarming fever, and in a short time go out with the Italian queen. This may have been the case with yours, or she may have been injured while in the cage. It is certain she is gone. Even if she were not pure, you would see some Italians by this time.

I am very anxious to raise bees. I hope to be able to make it pay me something. Am fond of out-door work; am getting old; am a widow; am obliged to support myself, and am not able to sew much. Have read several works on the subject, but have not had much experience. Have had the old box hives, and now have movable comb hive, but don't know if it is a good kind. Please inform me which is the best of bee-hives. My means are very limited, still I hope to do something in the bee business. I transferred four colonies in the summer into movable comb hives, and lost two of them; the other two hives seem to be in good condition.

Bees need very little protection here during the winter. I keep the few I have on the stand. This winter I shall put straw around the hives. The weather here is never very cold for any length of time.

I wish to subscribe for the BEE JOURNAL. I have read several articles from your pen in the BEE JOURNAL, loaned me by a friend.

There is no lack of flowers here. Strawberries blossom in March or last of February. There are plenty of wild bees in our vast forests, and wild honey is often brought to sell. The small black bees are most common. There is a larger bee with a yellow ring, more amiable than the black bee.

If I can do anything with bees, I hope to be able to get the Italian, in time, of which I have read a good deal. Are they worth the money charged?

Mrs. LUCY WILSON.

Talladega County, Ala.

We are sure you would do well with bees, especially in your section of country. A plain, simple, hive, with movable combs, such as any carpenter can make, is all you need. We can send you description or sample hive.

You will find it easy to transfer bees and to take care of them, after a little experience, and you have gone to work in the right way in getting bees and going to work with them. We give advice to beginners in this and last number of JOURNAL.

We know the Italians are much

better than the black bees, but have no experience with the other variety you name. We advise you to get the kinds you can purchase near home, and then improve your stock by changing queens, rearing others from such as you find most prolific, and purchasing Italians when you are able.

Long ago I would have reported how I got along with the queens you sent me, had I not been disabled with rheumatism.

I received both of them in good order, although they were five days and over on the road, introduced them successfully, and had seen the progeny of both, when, to my utter consternation, I found, about three months ago, one of those queenless. No swarm had issued, and now a black queen reigns supreme in the same hive. How is this? The other is doing first-rate, and shall try next season to Italianize all my black bees from her.

Is it injurious to bees to have the apiary near a stream (the Wabash) which they have to cross in search of food?

Which soil is best adapted to Alsike Clover, and what time must clover be sown? I have tried Alsike Clover, twice, without any gratifying result. My land is sandy soil, with gravel underneath.

H. A. ESON.

Indiana, Dec. 6.

We have no doubt that your queen went off, even though you did not know it, as in the preceding case.

We think in a windy time, some bees may be lost in a stream like the Wabash, but not enough to do much harm. In other respects, near a stream is a good location. The bees are sure of water, and there are flowers on the banks usually.

Alsike Clover does best in moist land, not too rich, but we have seen it do well on the prairie. It ought to do well in your soil. It is best sowed in spring, on ground well prepared the fall previous, but it does well, also, sown between rows of corn, when it is plowed for the last time—"laid by," as the farmers call it. The shade of the corn helps it to a good start, and it roots well before winter.

I find in looking over the *Bee-keepers' Magazine* for December that you discard honey boards entirely. Would you, in putting boxes on, set them

on the frames, or have the same air space between that was between the honey board and frame? And in putting small frames above would you hang them so there would be a space between, or set them on top of the box in the hive.

GAIN R. SMITH.

Ontario County, N. Y.

We do not use the small glass honey boxes now to any extent, preferring when we have honey to sell in the comb, to secure it in small frames, holding two to three and a half pounds each. These are hung in plain cases which fit the top of the hive. We have about one-third of an inch space between the bottom of these small frames and the top of the frames in the main hive. We leave this space because it prevents the queen from going into the boxes and depositing eggs.

If we used boxes should set them on the frames directly, though there are some objections to this: The queens will occasionally find them, and the bees in summer glue them fast; but on the whole it is better than to have the honey board between.

"The wintering of bees in the prairie country is perhaps one of the most important questions to the small farmer who keeps bees in order to supply his own family with honey. The bee journals occupy much space with this subject; but the majority of the writers, being commercial bee-keepers, overlook the thousands of farmers who do not make the business a study or pursue it on a large scale."

I find this paragraph going the rounds, and I want to know if you call me a "commercial bee-keeper?" I sell bees when I can spare them. I sell honey, and sometimes sell plain hives (no patent). Now if I am one of this class, I do not see how it disqualifies me for advising a prairie farmer how to winter his bees.

I have good success with my bees, and have never had any losses in wintering, and the very fact that I have bees to sell makes me anxious to help "prairie farmers" take care of their bees. Now, I say that there are no farmers so poor that they cannot shelter their bees in winter. Many have cellars, or caves; if not, they can bury them. I have tried all these ways, with success, but I do not wish to sell bees badly enough to advise any one, on the prairie, to leave them on their summer stands, even with "leaves and hay under them." If they cannot give them shelter, I, for one, don't want them to buy of me. If any of the other commercial bee-keepers want their custom they are welcome to it.

CHASE.

Wisconsin.

We have said so much on this subject of late that we will only say now that we cannot see why a "commercial bee-keeper" is not the one most interested in bees being kept successfully on the prairie. When we convince those farmers they can be so kept, we can better persuade them to buy.

See Mr. Quinby's article in this number for sound ideas on the "bee disease."

According to my calculations I arrived in this valley in due time, and spent several weeks viewing around the foot-hills and mountains, and made a specialty of visiting apiaries. There are but few advanced from the old box hive yet, and still they take enormous quantities of honey. It is from here that much of the celebrated orange-blossom honey is obtained, but is made from the White Sage and Artamisia, which grows on foot-hills and mountains.

Dr. Montgomery showed me one stand from which he had taken 404 pounds in a Langstroth hive, two stories. I examined and found it all packed full again, containing about 140 pounds,—in all, over 500 pounds of comb honey, beside enough for their supplies.

I succeeded in getting my four Italian queens through all right.

GEO. B. WALLACE.

San Bernardino County, Cal., Dec. 7.

I want to make my hives for this season with as little expense as possible, and yet have them of approved form, and as good as the bees need. Therefore, please answer me these questions:

1. Is an observation glass of any special benefit?
2. If we are to use the Extractor only, why is it necessary to make more than a cover to the hive? Is all the large cap necessary?
3. Is it any better to have a tight bottom board? Does painting pay? Are honey boards necessary?

C. D. H.

Cass County, Mo.

The observation glass is of no practical use whatever, and in cold weather, and even in fall and spring we consider it a decided disadvantage. When we winter bees in it we always put a piece of roofing paper, or old woolen cloth, between the bees and the glass. We do not use any glass in hives that we make now.

Every hive may be made so as to set on top of any other, and a simple lid is all that is necessary.

Sometimes a tight bottom board is

best, as, for instance, when hives are to be shipped or moved about, but in spring we like to have the bottom board loose. The last lot we had made we had the bottoms screwed on, so that we could remove them easily when we wished. There is much to be said in favor of both sides of this question.

Painting hives always pays.

We make no honey boards, using a quilt or carpet on the frames most of the year, and find this course far preferable.

Here is more about bees and grapes:

I would say in regard to bees destroying grapes, that I had the following varieties: Catawba, Clinton, Concord, Delaware, Isabella, Rogers' Hybrids Nos. 4 and 15, and Salem, in bearing last season within from ten to one hundred feet of one hundred strong stocks of Italians, yet not a grape was disturbed, so far as I could see, and that notwithstanding the drouth and grasshoppers had used up nearly everything in the shape of honey-yielding flowers. One of two things is very evident—either that my bees are more forbearing in regard to destroying grapes than bees are in some localities, or else those who charge them doing so in some places are mistaken, even if they have Professor before their names.

JAMES BOLIN.

Ohio, Dec., 1873.

As you wish bee-keepers to write for the JOURNAL, I will give you a little of my experience, and ask you a question or two. I commenced bee-keeping about twelve years ago, with one colony of bees. I now have four. Three hundred per cent. in twelve years, or twenty-five per cent. per annum, to say nothing of surplus honey. Who says that bee-keeping does not pay? I have all my life taken a deep interest in "the little busy bee," and am bent on making bee-keeping a success.

In October I received a premium Italian queen. I introduced her to a small colony (about Hosmer's number) on the 13th day of October. At that time there were nothing but mature bees in the hive, neither eggs nor larvae. According to authority, those bees should nearly all be dead by spring. On the 9th of March I took them out of the cellar. To my great surprise I found most of them alive, with a small sprinkling of Italians, I should suppose about one in twenty. Supposing, however, that their first flight would be their last, I felt like saying good-bye to them as I saw them take wing. Was surprised again to see most of them return, and it was well along in July before the black bees had entirely disappeared from the hive. I thought to feed them

along in the early spring, and placed drone comb in the middle of the hive, thinking to raise early drones, in order to Italianize my other colonies. But they would not eat worth a cent, neither would the queen deposit eggs in drone cells. I came to the conclusion that she knew drone comb as well as I did, and that she had no notion of raising drones until she expected to need them. Breeding went on slowly on account of their being so few in numbers, as I supposed. I watched them with a good deal of interest. When they began to gather pollen, I noticed that but very few of the Italians carried pollen for some weeks. This settled the question, with me, as to which bees carry it. Whether the young bees take it from them and pack it, I leave for future observation. About the 20th of May I noticed that they were raising several young queens. Think I, they are preparing to swarm; but, on looking further, I found that they had become queenless and were repairing their loss. In due time a nice looking queen was hatched, and, I believe, mated right. This set them back so that they did not get strong enough to do much until buckwheat time; but they made it up then. I never had bees work as industriously as these. I never had anything to do with bees that were as docile. In all my handling of them, which was not a little, I never smoked them once, and never got a sting except I squeezed one in my fingers. All went well with them until the cold spell we had in October. After it got warm, some of the family told me the Italian bees were dying. I went to see, and found as much as a quart of dead bees laying around the entrance and on the ground, and the living were busy carrying out the dead. Dysentery, was the first thought, but could see no traces of it. I examined them, found the comb full of honey, except a very little around the edges of the combs. I knew they were full when frost came, but as it came early, I supposed they would eat out enough to winter in before cold weather, but they did not. I took two full combs out of the center, and put two empty ones in their places. They are now in winter quarters and are doing well. Was the want of empty combs the cause of their dying?

I have no Extractor, but must have one next season. I believe it is particularly necessary to use an Extractor with the Italians. They are such workers that they will fill their combs with honey, and leave no place to rear brood.

One more question, and I am through. Is it best to keep the entrance closed while in the cellar?

J. C. ARMSTRONG.

Iowa, Dec. 23.

We think the bees died from cold, there being no comfortable place for them to cluster in. They would all soon have died, but for your timely aid.

We agree with you fully as to the benefit of the Extractor for Italians.

We never close the entrance to

hives in the cellar entirely. It makes them uneasy to be confined to the hive. Avoid a draft through the hive, and the entrance may be very small.

I have read with pleasure and profit your contributions to the *Bee-keepers' Magazine*, published by H. A. King, New York, and you will say so if I tell you how bee-keeping has progressed in this part of Ontario. All bee men here say it was a poor season, some of them getting neither swarms nor surplus honey, and but few got any surplus.

I commenced with three stocks in the Quinby Hive. This is my second season with the little pets, and have increased to seven by artificial swarming, and taken 180 pounds of surplus of clover and basswood honey, with the Extractor, all of which I have sold at from 20 to 28 cents per pound. The old fashioned bee men do not credit me.

This season I have Italianized five of my stocks but the bees are dark and show the third stripe but faintly, and that only when full of honey. Is it pure stock?

J. B. H.

Woodstock County, Ont., Dec. 22.

The majority of imported queens produce workers that are dark, as you describe, and show the third stripe only when full of honey. We think the stock pure, as you describe it, but it is hard to decide at this distance. It may be that another season your bees will grow lighter colored, and the queens reared, if purely mated, produce lighter workers.

My bees are all right to-day (Nov. 13). I see no signs yet of the dreadful bee disease.

Yesterday I received a little work on bee culture, from Ellen S. Tupper, which was all right. I have read it, and like everything else I see or read, I find something new.

My bees are a little contrary, and will not always do just as it is laid down in the book. Let me review Ellen's book:

Page 4 (impregnation). "Except for this purpose she never leaves the hive, unless when she goes with a swarm."

My queens are contrary, for I have frequently seen them out playing on the alighting board, and suppose they would have taken a little fly had they found it convenient. (My queens are all cropped.)

Page 24. "Colonies also, while queenless from any cause, invariably build drone comb, if any."

My contrary bees have built just as good worker comb without a queen as with one. Bees are less apt to build drone comb in the fore part of the season.

Page 9. "Careful experiments," etc.

The best ever I did with black bees was, one swarm and fifty pounds of honey. With the Italian, one swarm and over seven hundred pounds of honey.

M. C. HESTER.

Let us hear from all who differ from us on this or any other point. Some very sensible thoughts were given on this head by Mr. Adair in December number (proceedings of Convention). They were new to us. We hope to hear from any one who has different views from Adair. We intend to experiment another season, and know for ourselves if he is correct.

We have sometimes seen queens in the cluster hanging outside the hive on a very warm day. We know that if the hive is properly arranged, neither they or the workers will be outside.

I have my bees in very shallow frames, and some of them are wintered out of doors. Do you think they will live through? I hear that they are not as likely to do well when in hives with shallow frames. Please answer through the JOURNAL.

Minnesota.

We have little experience in this matter, and do not use very shallow frames, so we give in answer to this question an extract from a letter received from Mr. Salisbury, which is just to the point. He, it seems, succeeded, but his climate is very different from that of Minnesota.

My bees are wintering very finely, so far, and I have suffered but little from loss of bees in wintering. I winter mostly in a good repository, but wintered some on their summer stands last winter, for experiment, and seldom have wintered bees better, and these in seven-inch frames. They were ventilated at top through a muslin cloth covered with seven inches of straw and leaves, and the hive under-pinned with straw to gain the advantage of the warmth of the earth. And the brood which was in one of these in the month of January did well when the mercury fell 32° below zero, Fahrenheit.

A. SALISBURY.

As you kindly told me last winter to ask you any questions I needed to know, I do so, thankfully. I told you last winter that my boy bought me a swarm of bees in a box hive. I knew nothing of them or their ways. In June they hung out for three weeks. Owing to the cold nights then I lost two swarms. The second left me in five days. If I had had a frame of brood and

honey to give them, I now see by the magazine, they would not have done so. Eight days after swarming I thought it time to see if they (my first) were all right. I found almost every comb built crosswise the frames, all full of honey and comb. I tried to straighten them, but the comb was so brittle that they would not bear their own weight, and I gave it up in despair. I am sorry to tell you some miscreants—for whom hanging is too good—came one night and stole the box hive and killed the bees. I afterward found the hive and considerable honey, though broken.

I wish you to tell when will be the best time to fix the combs in my frame hive, and if the honey would not be good to feed my bees, as I wish to increase my number of stocks next summer by dividing as far as I can safely.

I hope this summer has been a good one for you.

PHEBE LINTON.

Ashtabula Co., Ohio, Oct. 14, 1873.

We agree with you that no punishment is too severe for those who destroy bees just for the sake of a little honey. We have had several of our best hives taken in this way; at one time a choice imported queen was in the stolen hive.

The best time to strengthen the combs of your hive is in spring, when they will be comparatively empty of honey. Cut them out and put them in straight, just as if you were transferring.

The right way is, to watch the bees every day or two when they are building comb, and if they incline to go out of the straight way, a little pains will turn the new soft comb into the right way. It is much easier to get the combs built straight at first than to change them afterwards.

The broken comb and honey is just what your bees need.

Hoping you will be kind enough to answer me a few questions, I therefore submit the following: Can it make any difference to the bees whether the combs in a hive run from front to rear, or from side to side? And also, can it make any difference whether the combs in the surplus arrangement run in the opposite direction from the combs in the brood chamber?

WITTINGHAM BRYAN.

Prince George Co., Ind.

We prefer to have the entrance to the hive at the ends, rather than the sides of the combs, but we do not think it makes any material differ-

ence to the bees. We generally arrange the combs in the chamber so that they run in opposite direction from those in the main hive, but cannot say that this is important.

Will some one else give their views in this matter?

I would be glad to know something about the Rocky Mountain Bee Plant, where it can be had, and at what price; how much it takes per acre; when to sow, and how; what kind of ground it requires. I want some of it as soon as I can get it.

JOHN S. LINGLE.

Owen Co., Ind.

You can buy the seed of M. H. Terry, Crescent City, Iowa, at 25 cents per large package.

We have never cultivated it to any great extent, but think it does best on good rich soil, sowed very thin.

Mr. Terry will give all instructions necessary. He advertises it in the JOURNAL.

1. Is pollen, or bee bread, which was broken out of a hive last spring suitable to feed bees with next spring?

2. Is there any way to cleanse comb where the bees died with dysentery? I have had many pounds of comb made into wax that was otherwise good.

A. WILSON.

Marcellus.

1. The bees will not always take the old pollen. If they do, it is safe to feed it; better, however, to give them rye flour.

2. The comb may be washed well with a soft brush or cloth and hung up in a warm room, or in spring in the shade, till dry. It is then as good as ever. We have put it out of doors in a heavy shower, and had it perfectly cleaned. We bought a quantity of comb where the bees had died, two years ago, and by this means made it very valuable. Would never melt such combs.

I have purchased two hives. They are in the common box hive. I have got them up chamber in a dark room, but they keep flying out of the entrance and ventilation holes and dropping down and dying. My father used to keep bees in the State of New York, the old fashioned way, and had very good success, but yet I don't know

much about bees. The room is 7x12 in which I have my hive. It is right over the cook room, and, as it has been a very moderate winter so far, I don't know but it may be too warm for them. Please tell me how I had better ventilate them. I have got a dark, dry cellar, but as we have to keep our vegetables in that I don't know as it would do.

Could I do anything with a queen bee this time of the year?

MARY A. G.

Kalamazoo Co., Mich., Dec. 27, 1873.

If the room is perfectly dark it must be that the room you speak of is too warm. We would advise leaving the door open a few nights when the weather is warm, closing it before light in the morning. The cellar would be the better place for them, in spite of the vegetables; but we would not move them now.

You cannot use a queen until spring, nor could she be sent you with safety.

I have been wishing to raise bees for some time. I have been culling agricultural papers for information on the subject, but have been afraid to venture until the present. I am a farmer's daughter, without means, and will have to begin on the lowest round of the ladder. Papa raises fruit, and we are troubled with other people's bees to such an extent that I know our place furnishes pounds of honey for our neighbors which we might keep at home if we knew how. My father is a minister, whose health failed in Wisconsin, and he is trying to make a living on a small fruit farm, which is yet an up-hill business as he knows nothing about hard work and his health will not permit him to be exposed. I am a young woman of twenty-five, quite old enough to accomplish anything I undertake. If you will help me with your advice I will be very much obliged, and will follow it to the best of my ability. I want to start with one hive of Italian bees. When can I have them brought here? I suppose some time during the winter.

M. H. M.

Alexandria, Va.

We advise you to try bees by all means. Perhaps you can procure some subscribers to the JOURNAL to help pay for them. If you cannot get Italians near you, begin with black bees. They can be sent best in early spring.

You will see articles in the JOURNAL telling you how best to begin. We send the JOURNAL to ministers of the Gospel at half price.

I received a queen safely and in fine condition. I introduced her in two or three days after she

was liberated, but for some cause there has been no brood raised up to this date (Sept. 18). The colony she is with is weak. I have given them two cards of brood. I was looking through them to-day, and found eggs in all the empty cells in the two cards I gave them. Have examined the hive each week since I introduced the queen, and find eggs but no brood in the larvæ state. I have seen the queen quite often. She is much larger than when put in. Can you give me any light on the subject, as I never saw the like in all my experience with bees?

We had severe drouth last summer, and the season was unfavorable. Do not think my bees made honey enough to winter on.

J. W. SPERRING.

Humboldt, Iowa.

We have never seen such a case. Will some one who has answer Mr. S.?

GIVE not only your postoffice, but your State and county, plainly written, when subscribing for the JOURNAL. We receive some letters with no postoffice address, thus:

"Send me December number of the JOURNAL for sample copy. "JOHN BROWN."

No other direction. John Brown does not get his JOURNAL, and blames us.

Then, again, some one who has written to us before, neglects a second time to give his postoffice address, supposing we remember it. As we have answered some 500 letters the past month, it will be seen how impossible it is to remember all, and although we may hunt it up, it takes time.

WE SEND this number to some who have not yet renewed their subscription, but whose terms expired with December number. Want of time has prevented the perfect revision of the list of names. We hope that all such who receive this will at once remit or write to us concerning it. It costs only one cent to do this by postal card, and that is the most satisfactory way.

We are in receipt of several numbers from persons who return them without giving any clue to their names, merely marked "returned."

We are grateful to those who are making efforts to secure subscribers.

Send on names as fast as possible, that we may know how much to increase our edition for February number. Let every one who receives this JOURNAL try to obtain at least one new subscriber. We will do our part to improve the JOURNAL, but to succeed as we wish we must have help from the workers.

ALL old subscribers who will send us a new name with three dollars, during the next month will receive the JOURNAL for themselves and the new subscriber, and two works on bee-keeping. Those who send in three new names, with six dollars, will receive their own JOURNAL for 1874 free, and three copies of bee books. These liberal offers will, we hope, induce all old subscribers to work for us. Send names and money to Ellen S. Tupper, Des Moines, Iowa.

WE WOULD ask those who are working for premiums, or cash commissions, to send on all names as soon as they obtain them: registering letters, or sending postal orders, at our expense. Due credit will be given for the amount. Any one sending names who is not able to secure the whole amount necessary to obtain a desired premium, can, when he pleases, remit the remainder in money, when the premium will be sent. Thus, any one desiring to secure a colony of Italian bees, and obtaining only ten subscribers, will be credited one-half the price, and can send the balance at his convenience; or, three subscribers will secure three dollars toward a premium of a tested queen, and the remaining two dollars be sent in money.

All persons indebted for advertising or past subscription to the JOURNAL must make payment to Mr. Wm. R. Leopold, No. 8 and 9, corner of Washington and Delaware streets, Indianapolis, Indiana, with whom all accounts are left for settlement by the old proprietors.

Miscellaneous.

WHY DOES A QUEEN BEE PUT HER HEAD IN A CELL BEFORE LAYING IN IT?

[The following letter was received after our Correspondence Department had gone to press. We therefore give it place here.—Ed.]

When a queen is ovipositing, she puts her head into each cell in which she is about to lay, and remains in that position from one to three seconds. She then raises her head out of the cell, moves forward the proper distance, and curving her body into the cell drops back until she touches the bottom with the tip of her abdomen. She then turns until she gets in the proper position (which is generally with her head above the cell) and after a slight quivering movement, withdraws, leaving an egg.

It has been universally stated by writers describing the actions of the queen, that she puts her head into the cell for the purpose of examining whether it is in suitable condition. I have watched the queen under such circumstances for hours and have seen her lay thousands of eggs, and conceive that such is not the case. One fact would seem to me to be sufficient to disprove such a conclusion, which is that she never puts her head into a cell without laying in it. She has evidently decided to place an egg in the cell before putting her head in it, and therefore the act must have a different meaning. Very likely she does it for two reasons and accomplishes two objects by it:

First—By so doing she gets the location of the cell, with her body so placed relatively to it that in moving forward a given distance centrally over it, when she curves her abdomen and drops back she is certain to place the egg in the right cell. A fact in proof is: A queen, by some accident, had lost a part of one leg, so that in walking over the comb she did not

travel in a line parallel with her body but had a sidewise motion. I observed that she would insert her head into a cell as other queens do, but in moving forward the tip of her abdomen would be brought over an adjoining cell, into which she would sink and deposit her egg. The consequence was that some cells had a large number of eggs in them, for when she again returned to the cell she had attempted to lay in and found it empty, she would repeat the effort with the same result every time. All of the cases reported in the BEE JOURNAL and books, where defective queens deposited more than one egg in a cell, could doubtless be accounted for as resulting from some defect or injury (often temporary) which prevented them from moving forward in a direct line over the selected cell. It might be such a slight deviation that they would only occasionally miss the proper cell. The crippling of only one wing of the queen may occasion such irregularity, by destroying the perfect balance of the queen.

Second—It will be noticed that after the queen puts her head in the cell she pauses for a second or more. There would be no necessity for this if her object was the one generally supposed, nor for the purpose above suggested, for either of those would be accomplished without the pause. I have heard it suggested that while her head was in the cell she deposited in the bottom of it a glutinous saliva to stick the egg fast, but as it is well known that the egg is emitted covered with the fluid that fastens it to its place, it cannot be for that purpose. If she does nothing in the cell, the pause must have some reference to the act of laying. The eggs are produced in the ovaries of the queen, and have to pass through the lateral oviducts and the main duct, and in passing through the latter, they are fertilized by receiving the spermatazoa as they pass the mouth of the sperm sac, if they are to produce female bees or

to be laid in worker cells. I am of opinion that during the pause this takes place, and that the bowing of the head is occasioned by the effort she has to make to force the egg to the mouth of the oviduct and to impregnate it. In confirmation of this I would state that I never saw a queen lay in drone cells but once, and then only five or six eggs, but she did not in laying them make any pause. She merely bowed her head into the cell as she passed over it. Dzierzon states that the queen lays eggs in the drone cells *far more rapidly than in worker cells*, but does not seem to have noticed whether she paused at each cell. Nor have I seen that the attention of any one has been drawn to it. The fact that she laid drone eggs faster would seem to confirm my limited observations, and if on investigation it proves true that she does not make the same pause, it would go far to prove that it was by an effort thus made that fertilization is effected, and would give grounds for a new theory as to how the sex of the egg is determined.

BEGINNING BEE-KEEPING.

[From Brain and Muscle.]

Mr. Editor, I clip the following from the agricultural department of a popular weekly newspaper:

"An inquiry comes from Norwood Park, Ill., as follows: 'My wife is going into bee-keeping. Wants to know the best kind, where to get them, and the price.'

"Answer—The Italian bee is acknowledged to be the best for securing a large amount of honey, but requires a more careful treatment, and will be more frequently lost than the common black bee. The Italian bee requires, on account of its usual weakness in numbers in the fall, more protection through the winter than the black bee, and unless you have had considerable practical experience in bee-keeping and management you had

better take the black bee and not meddle with the Italian."

This may be wisdom, but we fail to recognize it in this locality. What the writer says of the superiority of the Italian bee as a honey gatherer is undoubtedly correct. What he says of their greater liability to loss as compared with the black bee is more than doubted. It may have accorded with the limited experience of some novice in bee-keeping; but the reason, viz., *weakness in numbers in the fall* appears to be based upon a gross misconception of facts, and is calculated seriously to mislead. *The Italian stock cannot, as a rule become weak in autumn except by inexcusable want of attention on the part of the bee-keeper to its crowning excellence; neglect may bring it about.*

The superiority of Italian bees as honey gatherers is not so much in the individual bee as in the multitude. they may fly somewhat more swiftly: they may be able to work upon a class of flowers in which the honey lies too low for the black bee; but the prime excellence lies in the superior fertility of the queen which keeps the stock much more populous. In consequence not only are two bees at work instead of one, but by reason of the higher temperature in the hive, kept up by the superior numbers, the colony gets an earlier start in the morning and returns later at night, since the presence of workers is not needed to keep the brood warm; for the same reason they work in cooler weather than the black bee, and withal, numbers seem to inspire courage among bees as well as men.

Now then, with the acknowledged advantage in point of fertility, in favor of the Italian queen, how comes it about, *if at all*, that the stock is weak in the fall? *Plainly the honey crowds the queen.* In some favored week of honey harvest, *e. g.* when the Linden blossoms are overflowing, or later, when the buckwheat yield is especially abundant, the greater numbers of

the Italian colony enables them to fill suddenly every available cell. And new comb cannot be built fast enough—even though in their hurry they construct only the large drone comb—to store the stream of honey that is pouring in. At such times you will often find cells only half built filled to the brim. Under such circumstances it is simply impossible that the normal amount of brood should be reared. Consequently, when the summer workers die as they do in the fall, and young bees are not forth-coming in sufficient numbers to take their places, the stock may become weak. In such cases robbery to save life is a bee keeper's virtue. The remedy is a timely removal of the honey; not, however, by cutting away the comb, but by emptying it. Give the queen ample room during the last of August and the first of September and you need not fear weak stocks on going into winter quarters.

My advice to beginners is to buy, not *black* bees, but a honey extractor. It is hard on bees as well as men to persecute for righteousness sake.

Ames, Aug. 28, 1873.

APIS.

REPORT FROM ADAM GRIM.

The hard winter, fearful spring and poor summer had almost ruined my stock of bees. By incessant feeding and doctoring, I have, with the aid of the splendid fall weather, succeeded, not only in restoring my colonies to good condition, but increased them from 485 (I sold 30 and lost 105) to 850 which I will winter. I extracted no honey, but secured 3,500 pounds of box honey, for which I am offered 28 cents a pound. A. Faerbinger, who lost only three colonies during winter and spring, out of 98, got from the remaining 95, 23 young, natural swarms, and 2,700 pounds of box honey, which he sold at home at 24 cents a pound, and 1,400 pounds of extracted, and his bees are in splendid condition. They

are mostly good hybrids. This man makes, estimating his young colonies 88 per hive, clear \$1,000 from 95 colonies in this moderate good season. He is a cooper by trade, but says he will hereafter only make his own barrels, and put all his time into bee-keeping. This is very encouraging, but I will give you another picture. W. Wolf had here, two years ago this autumn, 181 extra good and heavy stocks. He sold in all 17 colonies, and had only \$50 worth surplus honey last year and only \$5 worth this year. He now has 39 colonies. Of course he laments over the poor season, claims that he has no luck, when, in fact, it is nearly all due to his carelessness. If he did not know what to do, I could excuse him for his failure.

* * * * *

We have in this neighborhood 1,428 colonies, that produce 9,078 pounds of surplus box honey, and 2,740 pounds of extracted honey. The above numbers of stocks include the young colonies, which number 550, leaving 873 old colonies, which yielded on an average a little over 10 pounds of box honey and about 3 pounds extracted. But only three bee-keepers extracted honey, and a very little at that. This is a very poor show when compared with the season of two years ago, when my average yield was, to my recollection, 73 pounds to every hive I started with in the spring.—*Gleanings in Bee Culture.*

EGGS OF THE BEE MOTH.

The eggs of the bee moth are entirely round and very small, being only about the eighth of a line in diameter. In the oviducts they are ranged together somewhat in the form of a rosary. They are not developed successively like those of the queen bee, but are found fully formed in the ducts, a few days after the moth emerges from her cocoon. The female deposits them in small parcels or clusters on the combs. If any one desires to witness the discharge of

eggs, he need only seize by the head a female two or three days old, holding it between the finger and thumb. She will instantly protrude her ovipositor, and the eggs may be seen passing along the semi-transparent duct.

That the moth does not deposit her eggs in the pollen of flowers, as some imagine, but on the combs in the hive, is very certain. I have repeatedly found little clusters of eggs on combs which I removed out of hives. —*Dr. Donhoff.*

FROM BURTON'S "LAKE REGIONS OF CENTRAL AFRICA."

The country abounds with honey. Near the villages log-hives hang from every tall and shady tree. Bees also swarm in the jungles. Their produce is of two kinds—one found in the forests and stored in grounds, resembles European wasp honey; it is more than half filled with dirt, and affords little wax; the liquid is thin and watery, and has a singularly unpleasant flavor. The other variety is hive honey, which is very good if not kept too long, and supplies a yellow wax, which is used by the Arabs to mix with tallow in the manufacture of candles. Honey is the only sweetener in the country, except in the maritime and lake regions, where the sugar cane grows.

MR. QUINBY well says in *American Agriculturist*:

I am in favor of urging another class in our community to engage in bee-keeping. I mean the ladies. It has been recently demonstrated that they have the ability to do many things heretofore thought inexpedient, if even it were possible. Many have the strength, and many that have not, have the skill to direct in their management, as is abundantly proved. Some of them lack the courage to begin and patience to learn how, and

boldness to brave the sting. Most minds require considerable discipline to surmount these obstacles. For a fine lady to receive a sting is to be dreaded, yet the smart is no more in a fair face than in firmer flesh. Let us endeavor to learn all we can of the subject, and how many stings may be avoided, as well as how they interfere with the business.

BEE STINGS.

The fear of stings is one of the greatest obstacles in the way of successful bee-keeping. I have had patent hive men visit me to exhibit their hive. I am apt to make up my mind as to the value of his hive by going with the man among the bees. If he wants protection for his hands as well as face, or boasts that bees never sting him and then dodges on hearing a bee flying near, or if one approaches, seemingly disposed to make his acquaintance, he makes a strike with his flat hand or wisp of grass to drive it away, or if his quick motion attracts still others, and he leaves defeated whether stung or otherwise, I am apt to think that a hive of his constructing lacks some essential points, because he has not yet become acquainted with bees well enough to know what is wanted in a hive. If he has some valuable contrivance, it is often purloined from some one else; and it is generally the case when looking at his hive that the only thing new about it is an idea taken from some good hive so changed as to make it worse. But when a man accompanies me into the yard and manifests no fear of stings, and is willing or even anxious to go right into the hive, I predict that he is a successful bee-keeper, or will become one if he gives his attention to it.

Berlepsch thinks that the low and continued humming heard in some hives, in extreme cold weather, is not produced by the action of the bees' wings. He once cautiously opened a hive on such an occasion, when the

thermometer was 24° below zero. The bees were packed in dense masses between the combs. The humming was still heard, though there was no motion of wings perceptible among the bees on the exterior of the clusters; and it is hardly conceivable that those confined in the interior would have room to move theirs. He suspects that the sound is produced by means of their organs of respiration, or results from some action of the tracheal system.

BEES IN SILESIA.

In the province of Silesia 260,000 colonies of bees are kept, representing a capital of more than one million of dollars. These, even in the most unfavorable years yield a profit of ten per cent.; and in propitious seasons, such as the year 1846 was, the yield was fully 100 per cent., or more than \$1,000,000. It is well ascertained that the whortleberry and buckwheat blossoms are much richer in saccharine juices on the poor soil of Silesia than in more fertile districts.

The bees do not deposit in the cells all the pollen they gather. Many of the pellets are taken from the gatherers as they return with laden thighs, and are at once consumed by the greedy workers, to qualify themselves for secreting wax or preparing food for the older larvæ.

GERMAN ADAGE.

He who hath thriving sheep in his fold,
Whose wife is not given to bluster and scold,
Whose bees are aye wont to swarm in due season,
For grumbling and growling hath surely no reason.

We are prepared to furnish seeds of valuable honey plants. A list of these, with common and botanical names, and also description, will be given in next number.

Those who are sending clubs should remember that the postage on registered letters has been reduced to five cents in addition to the regular postage.

WAX AND THE HONEY COMB.

Comb is made of wax, and when new is very white, and pure wax. The wax is a secretion of the body of the bee, and formed only when the bee is richly provided with food, like fat in the higher order of animals, but with this difference, that while fat grows upon the animals without their knowing it, the production of wax is entirely optional with the bee.

It is fully in the power of the bee to make wax, or not to make any. But if they are put into a new hive without any comb before they can store away any honey, in order to produce wax the worker-bee takes in considerable more pollen and honey, both of which constitute their food, than is necessary to appease hunger. These materials are thoroughly digested and pass into the blood, from which it is secreted as wax, in the form of thin white scales, between the segments of the abdomen. As soon as the secretion of the wax has commenced, the bees begin at once to use the wax flakes for the construction of comb. This comb-building always begins at the top of the hive in the center of the cluster of bees, and if it be a frame hive, they will commence at the top bar of the frame, and if they are supplied with guide combs they will usually build the comb straight in the frame.

Now if this swarm of bees is supplied with ready-made comb in frames it will not build any, but only clean out the old comb and repair it, and commence filling it immediately with honey, pollen and brood. By supplying them with old comb, you assist them very much, and they will fill their hive in a short time.

It takes about twenty pounds of honey to make one pound of wax, and according to this rule wax ought to be worth \$5 per pound when honey is worth 25 cents. But wax only sells for 30 cents a pound. I have sold in five years more than 2,000 pounds of

honey, and during the same time not more than ten pounds of wax.

I save all the comb I can and give it back to the bees; if it is white comb I stick it in the boxes. If it is worker brood comb, I fix it in the frames; if it is comb which I cannot use in the boxes or in the frames, I put it in a shallow box and set in the sunshine, and as the sun melts the wax the bees carry it back to the hives, and I have every reason to believe that they use it again for comb-building. I am not prepared to establish this fact to others, though I am certain it is true.

To clean old combs, place them in some vessel that will hold water, laying them flat, one on the other, until the vessel is full, lay on a board and a stone to keep them from floating. Now fill the vessel with water and slacked lime. Let them soak twenty-four hours, then take out one at a time and with a fine broom brush lightly but thoroughly on each side. Next put them into the extractor and throw out the water. Rinse them in clean water, and use the extractor each time. Then stand them up singly in the shade to dry. Two or three days will not be too long to dry them. Then cut out all the drone comb and patch them up with worker comb and they are ready for the bees.—*Farmer's Home Journal*.

WHAT OTHERS SAY.

Periodical bee literature has hitherto, like most other limited specialties, enjoyed but a fitful and uncertain existence; but one event has lately transpired which gives promise of something useful and permanent. Mrs. Ellen S. Tupper, of Des Moines, Iowa, who has acquired almost a world-wide reputation by her writings and original investigations in the field of apiarian science, has purchased the NATIONAL BEE JOURNAL, hitherto issued at Indianapolis, and removed the publishing office to the city of her residence. We have received the first number of the work since it came under her control, and are highly pleased with it as a most promising Western enterprise. Mrs. Tupper is not only at home in all that concerns the natural history, care, and management of "the little busy bee," but she is a lady of high

culture and much literary ability. More than this, she possesses extraordinary business capacity, independence, and judgment, and whatever she attempts is very sure to succeed. Her new enterprise has our best wishes, and we commend her neat little magazine to the favor of bee-culturists throughout the Union.—*Chicago Inter-Ocean*.

THE NATIONAL BEE JOURNAL has changed hands. Mr. Ellen S. Tupper, one of America's most experienced and enthusiastic bee-keepers, has taken charge of the editorial chair. We congratulate our apiarians that the JOURNAL has fallen into her hands.—*New Orleans Home Journal*,

We are more than pleased with the NATIONAL BEE JOURNAL, published at Des Moines, by Mrs. Ellen S. Tupper. The November number is replete with valuable information in relation to bees and their treatment. In fact, the JOURNAL is "devoted exclusively to bee-culture," and is richly worth \$2.00 per annum. We are glad to know that Mrs. Tupper has determined to ascertain if her extensive knowledge of bee-culture has a money value. We are sure it has, and feel certain that the circulation of her JOURNAL will extend all over the country. An efficient corps of correspondents has been engaged.—*Fairfield Ledger*.

NATIONAL BEE JOURNAL.—We welcome this excellent paper to the capital of Iowa, where it will hereafter be published by Ellen S. Tupper, an Iowa woman, and very successful as a practical bee-keeper. It cannot fail to have added interest in the eyes of western people who are interested in the workings of an apiary.—*Minnesota Farmer*.

THE NATIONAL BEE JOURNAL.—We are pleased to learn that Mrs. Ellen S. Tupper, so well known by her able contributions to the various leading agricultural and literary journals on the subject of bee culture, has assumed the management of the NATIONAL BEE JOURNAL, published at Des Moines, Iowa. Mrs. Tupper has already shown herself to be a woman of unusual energy and business tact; and, besides being a writer of great excellence, she brings to her work an experience of fifteen years as a practical bee-keeper. With all these advantages, she can scarcely fail of making the JOURNAL a popular and useful paper.—*National Baptist*.

THE NATIONAL BEE JOURNAL.—The November number of this monthly, under the editorial management of Mrs. Tupper, is just issued from the *Homestead* office in this city. As might have been anticipated by those acquainted with the reputation of the editor, there is a marked improvement visible in the general matter of the JOURNAL, showing clearly that it is under the management of one who is master of this interesting branch of farm and household industry.

The NATIONAL BEE JOURNAL, under Mrs. Tupper's management, will, undoubtedly, take rank at once as the highest authority on bee keeping in

the country, as its new editor has long ranked at the head of the bee-keeping fraternity.

THE JOURNAL has an able corps of assistant editors and correspondents, embracing in the list sever 1 of the most successful bee-keepers in the country.

Subscription price of the NATIONAL BEE JOURNAL \$2.00 per year. Address, Ellen S. Tupper, Des Moines, Iowa.—*State Journal*.

THE NATIONAL BEE JOURNAL, which was formerly published in Indianapolis, has been bought by Mrs. Tupper, and will hereafter be published in Des Moines. Mrs. Tupper takes the JOURNAL with a paying subscription of twenty-six hundred, and she says new subscriptions are coming in so fast that she will print three thousand on the first issue. Under the new management, the JOURNAL will have a cover and be in other ways improved in appearance. She takes charge of the publication, bringing to bear in its favor long years of experience in bee-keeping and as a journalist, and the JOURNAL will, without a doubt, take the lead among papers devoted to the apiary.—*Rural World*.

BOOK NOTICES.

The holiday No. of *St. Nicholas*, our splendid new illustrated magazine for girls and boys, the finest ever issued, will be sent to all the subscribers of *Scribner's Monthly* for 1874. Also the November and December numbers of *St. Nicholas* sent free to those who subscribe for both magazines. The July number of *Scribner's Monthly* containing the introductory article of the Great South series, sent to subscribers to *Scribner* who request it when making their subscriptions.

Scribner's Monthly \$4.00, *St. Nicholas* \$3.00 a year, or \$7.00 for both.

SCRIBNER & CO., 654 Broadway, N. Y.

The December number of *Wood's Household Magazine* is replete with good reading, entertaining sketches, stories, poems, &c., &c. Its table of contents embraces the following articles: A Better Country, Mary Hartwell; An Engineer's Yarn, Albert Williams, Jr.; Our Party at Sea, Rev. J. S. Breckinridge; Two Enthusiasts, H. M. Lewtral; Presence of Mind, Rev. F. W. Holland; Our Babies, D. A. Gorton, M. D.; Blessedness of Riches, Tenoroon; Hans Doodlede, Rudolph Mentel; Installation of Max Kromer, author of *Jessie's First Prayer*; Codfish and Potatoes, Chapter II, by Eleanor Kirk; Misery Jippeau, Chapter VII, VIII, by H. V. Osborne. In addition to these articles are several pretty poems, a charming little Cottage Design, and editorial departments embracing Our Housekeeper, Correspondence, Literary Notices, Laughing Stock, &c., &c. The Engraving for this month is entitled "Old Folks."

All the above for only one dollar per year—or with chromo YOSEMITE one dollar and a half.

Address, WOOD'S HOUSEHOLD MAGAZINE,
Newburgh, N. Y.

BUSINESS NOTICES.

In the arrangement of our mailing list for the New Year we may make some errors. The work of mailing the JOURNAL is new to us, and, with all our care, this number may be sent to some who have not ordered it. Any such can notify us through their postmaster without expense. All who desire to continue will please write before the next number is mailed, giving postoffice address, which some fail to do. We call attention to the fact, that all who receive it, failing to give notice that it may be stopped, are held responsible for payment; but we do not wish to force it on any one in that way. A little work done in any neighborhood by our friends will obtain new subscribers. We pay liberally for such work.

Our thanks are due to those who have sent us such substantial evidence of their approval of the change in the JOURNAL. We will do our part to make it what our friends approve, but we must be supported. Compliments, though very grateful to us, won't pay the printer.

We know by experience that in no other way can so much pleasure and profit be afforded as by a liberal expenditure in every family for good periodical literature. Especially in country homes do the regular visits of these friends bring light and joy, and afford a medium of education more valuable than any other. The teacher of any country school can tell, after a few days' acquaintance with his pupils, who among them come from families well-supplied with magazines and papers. No family in our country homes is so poor that a trifle cannot be saved from some useless indulgence to spend in this way.

With this in view, we have taken some pains to make up our clubbing list, and our subscribers can procure any of the leading magazines or papers through us at reduced rates, as will be seen by our clubbing list. There is variety there to suit all—agricultural papers, literary magazines, and others full of valuable information on all scientific subjects, as well as the current news of the day. We especially commend the illustrated magazines and papers, as invaluable for young people. We shall give critical notices from time to time.

Mr. James J. H. Gregory, of Marblehead, Mass., aims to supply one great want, which many a good farmer, when too late, has felt to his keen sorrow: Garden Seeds that know how to come up; and when the crop is gathered proves to be just the kind the label said they were. Mr. Gregory is one of the few seedsmen in the United States who grows a large portion of the seed he sells, and he gets out a live Catalogue, as would be expected of the original introducer of the Hubbard Squash. His advertisement will be found in this number. His Illustrated Catalogue will be sent free to all applicants.

NATIONAL BEE JOURNAL

ADVERTISERS' DEPARTMENT.

ADVERTISING RATES.

SPACE.	1 Month.....	2 Months...	3 Months...	6 Months...	1 Year.....
1 Page.....	\$16 00	\$30 00	\$45 00	\$80 00	\$150 00
3/4 Page.....	12 00	20 00	30 00	55 00	100 00
1 Column.....	10 00	18 00	25 00	45 00	85 00
3/4 Column.....	8 00	15 00	20 00	40 00	70 00
1/2 Column.....	7 00	12 00	17 00	25 00	40 00
1/3 Column.....	6 00	10 00	15 00	20 00	30 00
1/4 Column.....	3 00	5 00	7 00	10 00	20 00
1 1/2 inch.....	2 50	4 00	6 00	9 00	15 00
1 inch.....	2 00	3 00	5 00	8 00	12 00

Fourth page of cover, double rates. Third page of cover, 50 per cent. added to rates.

Cards of five lines or less, one-half inch, and one copy of BEE JOURNAL, eight dollars per annum; without JOURNAL, \$6.00. For each additional line, until one inch space is reached, \$1.50 per annum will be charged. No advertisements continued longer than ordered.

Bills of regular advertisers payable quarterly if inserted for three or more months; payable monthly if inserted for less than three months. Transient advertisements, cash in advance.

We adhere strictly to our printed rates.

Address all communications to

ELLEN S. TUPPER.
Publisher.

EVERY SATURDAY.

A Journal of Choice Reading.

[ESTABLISHED JANUARY, 1866.]

PROSPECTUS FOR 1874.

While retaining the prominent characteristics which have long made EVERY SATURDAY a favorite journal for the Fireside and Railway, the forthcoming Series will embrace several fresh and attractive features, among which may be mentioned

ORIGINAL AMERICAN STORIES,

Of which the first will be a serial entitled

His Two Wives,

A Story of Married Life. By MARY CLEMMER AMES

And a new Editorial Department devoted to the discussion of home literary, social, and scientific topics.

TERMS:

Weekly Parts, 10 cents; Monthly Parts, 50 cents; Yearly Subscription, \$5.00.

N. B. The Atlantic Monthly and Every Saturday sent to one address for \$3.00.

Published by H. O. HOUGHTON & CO., Boston. HURD & HOUGHTON, 13 Astor Place, New York.

Every Bee Keeper

Should subscribe for the

AMERICAN BEE JOURNAL,

Established in 1861 by the late Samuel Wagner,

It is acknowledged to be the best scientific and practical Journal of Apiculture in the world. It is unconnected with the ownership of any patent rights relating to Bee culture, and therefore admits into its columns the fullest and freest discussion of the merits and demerits of the various systems from time to time presented to Apirians.

It has for contributors to its columns the best, most experienced and most successful Apirians in this country, and from time to time will furnish interesting articles from the various Bee periodicals of other countries. Its aim is to

Develop Bee Culture in this Country,

and hence it will not be the advocate of any one theory or system of Bee culture.

The BEE JOURNAL is published monthly, by The American Publishing Co., at Chicago, and is edited by the experienced apiculturist, W. F. CLARKE, Esq. President of the North American Bee Keeper's Society, at \$2 a Year, in advance. Specimen copies sent free on application.

CLUR RATES—We will club the AMERICAN BEE JOURNAL with the ILLUSTRATED JOURNAL (the best and cheapest magazine of Art in the world) for \$3.50; or these two journals, with the "Young Folks' Rural" and its two superb chromos, entitled "Morning on the Mississippi" and "Sunset on the Sierras," for \$4, making the most liberal terms ever offered for three deservedly popular and valuable publications, retailing at \$6. Or, The Bee Journal and Rural with Chromos for \$2.50.

Specimen copies of these three periodicals, with the Chromos, sent for 60 cents, on application. Communications and remittances should be addressed, THOMAS G. NEWMAN, Room 27, Tribune Building, Chicago. 1-3t

DISSOLUTION AND REMOVAL.

The firm of BALDWIN BROS. is dissolved by mutual consent, the same to date from Nov. 1st, 1873.

L. W. BALDWIN,
A. A. BALDWIN,
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The subscriber, having removed to Missouri, will continue to breed choice Italian Bees and Queens from the best stock that can be procured. Purity and safe arrival guaranteed. No circulars. Prices—Single tested queens, \$3; two for \$5. Six or more, \$2 each. Address

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FRESH EGGS

For hatching, from first-class premium fowls.

Per Dozen of 13.

Partridge Coch. \$ 0 | Dark Brahma.....\$3 00
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Now in its twelfth year, is a large eight-page live, progressive and aggressive agricultural journal, with full departments, and able correspondents and writers: full market reviews, official weather reports, State news, and a thorough exponent of Kansas and Kansas farmers and farming. A sample copy sent free. Single copy weekly one year, \$2. Liberal club rates. Address

J. K. HUDSON,
Editor and Proprietor,
Topeka, Kansas.

3 3m

THE GALAXY for '74.

It is the purpose of the editors of the magazine to maintain those characteristic features which have given "The Galaxy" so high a place in periodical literature, and made it the favorite of so large a circle of intelligent and critical readers. The policy which has assured its success heretofore has been that of securing the freshest and most striking contributions without regard to authorship, and this policy, which will still be followed, makes it somewhat difficult to announce a set programme at the opening of the year.

In the department of fiction serial stories have already been secured from popular and well-known writers.

Sketches of travel are expected from writers of ability and established reputation. Poems will be given from authors well known in this and the Old World. Political history will be represented by Hon. Gideon Welles, and Gen. Custar will continue his articles on Life on the Plains; Richard Grant White his essays on language, and Prof. Youman his papers on Science.

PRICE, 35 CENTS. \$4.00 PER ANNUM.

CLUBBING TERMS.—"The Galaxy" will be sent for the year 1874 with any of the following periodicals at the price named: With Harpers' Weekly, or Harpers' Bazar, or Appleton's Journal, \$7; the regular price is \$8. With our Young Folks, \$5.50; regular price, \$6. With Littell's Living Age, \$10; regular price, \$12. Address

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DO TRY IT 3 Months for 10 Cts; or with \$3 Chromo for 50 cts; or six months with "The Flowers of Paradise," a first-class \$6 Chromo, 15x21 inches for \$1. The National Agriculturist and Bee Journal is a 16-page paper of 64 columns, handsomely illustrated in all its departments. One of the best Agricultural and Family papers published. Only \$1 per year, or \$1.25 with best Bee Book, or \$1.50 with a beautiful CHROMO. Bee-keepers' Magazine, a 32-page monthly, same terms, or both for \$1.75. Send now for samples, and Liberal Terms to Agents free. H. A. KING & CO., 14 Murray street, N. Y.

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Has the widest circulation of any journal west of Chicago and north of St. Louis, and is read by more people throughout the Northwest than any other paper published.

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Business notices 40 cents per line, nonpareil type, each insertion.

Special rates by the year and to large advertisers.

All transient advertising must be paid in advance.

Seven words on an average makes a line, twelve lines to an inch. Where display is wanted allowance must be made for the extra space required.

All cuts must be cast of solid metal.

To insure prompt insertion advertisements must reach us by Monday prior to the date of publication.

Money sent by draft, Post-office order, registered letter or express is at our risk—if sent in ordinary letter is at risk of sender.

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"Live and Let Live" is my motto in selling territory, which is now offered at extremely low prices. Will take good western lands in exchange. Address, COL. JOSEPH LEFFEL,
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BINGHAM'S Brahmas and Buff Cochins are bred from the best strains, and can't be beat by any. Send for circular and a

SUBSCRIPTION for this paper (reduced rates to single subscribers on all publications). Send for prices offered by my subscription

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FOR SALE OR EXCHANGE.—Farm lands, improved and unimproved, in the following States: Indiana, Illinois, Iowa, Missouri, Tennessee, and Virginia. Also, for sale or trade, city property. W. A. SCHOFIELD 8 and 9 Brandon block, southwest corner Washington and Delaware streets, Indianapolis, Ind.

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Missouri,
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Tennessee.

Also for sale or trade,

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PURE ITALIAN QUEEN BEES

Reared on Kelley's Island, O.,

12 MILES FROM NATIVE BEES

I would say to my former patrons and others that I have made arrangements to return to this Island, for the purpose of rearing pure and reliable Queens, and would solicit a liberal share of patronage.

My Queens will be bred from mothers imported direct from Switzerland, Italy, where they are claimed to be the most uniform and bright in color.

This beautiful Island, two by four miles in extent, is situated twelve miles out in the Lake, opposite Sandusky City, Ohio; and as there are no black bees kept there, undoubtedly the Queens I shall rear will be as pure as though reared in Italy.

For further information, price list, etc., address
AARON BENEDICT,
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After fifth month (May) 20th, to ninth month (September) 20th, address me at Kelley's Island, Ohio.

BEE-KEEPER'S SUPPLIES.

We can furnish everything needed in the Apiary, such as Italian Bees and Pure Queens, Honey Extractors, Knives, New System and Champion Hives, six styles, Bee-Feeders and Ventilators, Bee-Veils, the American Bee-Keeper's Guide, 244 pages, paper cover, 50 cts.; bound, \$1.00; Wax Extractors, \$3.00; Alsike Clover Seed, Black Spanish Chickens, &c. Send for our large illustrated PAMPHLET, containing information for Bee-Keepers, FREE to all. E. KRETCHMER, Coburg, Mont. Co., Iowa.

Honey Extractors.—We have two machines for 1873 for emptying honey from the comb. One machine will fill comb, making it the best Bee feeder in use. Lowest price for all metal machine ever offered the public. Send for our circular and price list.

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Atchison, Topeka and Santa Fe Railroad

LAND DEPARTMENT.

Report of Land Sales for the first seven months of fiscal year 1873 and 1874.

Month.	Acres.	Amount.	Av'ge.
1873.			
April.....	6,144.62	\$ 34,120 11	\$5 55
May.....	8,512.85	43,435 97	5 10 ¹ / ₄
June.....	8,278.61	48,368 08	5 84 ¹ / ₃
July.....	9,638.88	60,561 67	6 28 ¹ / ₃
August.....	12,547.78	72,619 98	5 70
September.....	19,163.96	94,467 38	4 92 ² / ₃
October.....	23,676.66	120,867 05	5 10

The Company has **Two Million Acres of Fine Land**, which has just been placed upon the market, with a reserve of **One Million Acres.**

It is the best opportunity ever offered to the public, through the recent completion of the road.

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The Christmas issue for 1874 will contain special designs appropriate to the season, by our best artists, and will surpass in attractions any of its predecessors.

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Every subscriber to *The Aldine* for the year 1874 will receive a pair of chromos. The original pictures were painted in oil for the publishers of *The Aldine*, by Thomas Moran, whose great Colorado picture was purchased by Congress for ten thousand dollars. The subjects were chosen to represent "The East" and "The West." One is a view of the White Mountains, New Hampshire; the other gives the cliffs of Green River, Wyoming Territory. The difference in the nature of the scenes themselves is a pleasing contrast, and affords a good display of the artist's scope and coloring. The chromos are each worked from thirty distinct plates, and are in size (12x16) and appearance exact fac similes of the originals.

If any subscriber should indicate a preference for a figure subject, the publishers will send "Thoughts of Home," a new and beautiful chromo, 14x20 inches, representing a little Italian exile whose speaking eyes betray the longings of his heart.

TERMS.

\$5 per annum in advance, oil chromos free. For Fifty Cents Extra, the chromos will be sent mounted varnished, and prepaid by mail.

The Aldine will, hereafter, be obtainable only by subscription. There will be no reduced or club rate; cash for subscriptions must be sent to the publishers direct, or handed to the local canvasser, without responsibility to the publishers, except in cases where the certificate is given, bearing the fac simile signature of James Sutton & Co.

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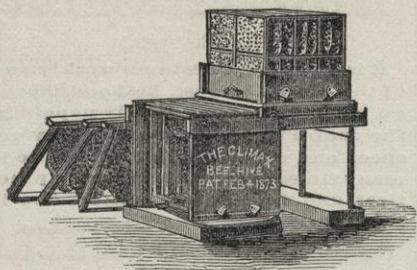


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 Catarrh Remedy!**

A Certain Cure if Faithfully Used.

Box of medicine with instrument and full directions sent to any address, postpaid, on receipt of \$1. Address **HAWKEYE MEDICINE CO.,** Des Moines, Iowa. 123t

The Climax Bee-Hive. NOW IS THE TIME!



We Sell No More Rights for



The leading features of this hive are :
1. Its upright form, which economizes the heat generated by the bees.

2. It is made in two parts. The upper part, which contains the boxes (or frames), is provided with common trunk rollers, and rests on cleats, secured to the lower part of the hive. These cleats extend far enough beyond the hive to allow the upper part to roll off from the lower without crushing, disturbing or in any way interfering with the labor of the bees. The strips forming the track, have drop-legs at their outer ends, and are hinged just outside the body of the hive (Fig. 1); and when not in use, fold up snugly against the hive (Fig. 2). Send for Circular.

Apply to

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No. 53 Webster avenue,
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ANNALS OF BEE CULTURE

An Apicultural Magazine.

Edited by **D. L. ADAIR,**

Corresponding Secretary of the North American Bee-Keepers' Society.

It has a circulation in every State in the Union and in Canada and Great Britain, amongst a class of intelligent readers who are generally engaged in the cultivation of the soil, as farmers, horticulturists, fruit growers, and those who live in suburban homes.

It will no doubt be greatly to your interest to send us your advertisement. Our rates are—
For whole page.....\$15 00 | For quarter page.....\$5 00
For half page.....: 8 00 | For eighth.....: 3 00
Double the above rates for space on the cover pages.

Twenty-five per cent. additional for cuts or unusual display.

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D. L. ADAIR & CO.,
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We will buy honey of all those in the country who have no home market. We can sell 10,000 pounds in this place. We will sell on commission or pay cash at wholesale price, 15 cents per 100 pounds extracted honey, or 20 cents for honey in the comb. Those having honey, to dispose of will find it to their advantage to correspond with

ITALIAN BEE CO.,
Des Moines, Iowa.

NOW IS THE TIME!

The American and International Movable-Comb Bee-Hives, but have made them Public Property in all unsold territory.

Those who intend to order bee-hives and material cut ready to nail together, should do so without delay.

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From factories in
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Agent's \$1 outfit—new terms—large cash commission—sample of papers, the large \$6 oil chromo, Flowers of Paradise, 15½x21 inches, and the two landscape chromos, Lahnstein and Scene in Switzerland, with American Hive No 1, marble finish, 12 boxes.....	\$6 50	\$5 50
Agent's \$1 outfit, with International Hive No. 1, 15 boxes, end and top..	7 00	6 00
Brass lettering plate, with agent's address, and 100 directions for making hives, sent for.....	2 00	

Terms, Cash in Advance.

Send for balance price list and terms to agents. We wish to correspond with all who will manufacture movable comb hives, ours or theirs, whether sold with or without a right, as we wish to publish their addresses at the foot of our price list in every number of our papers. Pastebord card for lettering hives and a few copies of directions sent for 25 cents.

Address,

H. A. KING, & CO.,
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DESIGNERS and ENGRAVERS

ON WOOD.

Room 7 Glenn's Block, INDIANAPOLIS, IND.

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SEEDS OF HONEY PLANT.—Large packets of the following varieties of choice and valuable honey plants sent by mail at 25 cents per packet: *Cleome integrifolia*, *Lophanturus anisatus*, *Salvia trichostemoides*, Golden-rod and aster. Address **H. A. TERRY**, Crescent City, Ia.

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(Late Colman & Sanders.)

Nurseryman & Florist,

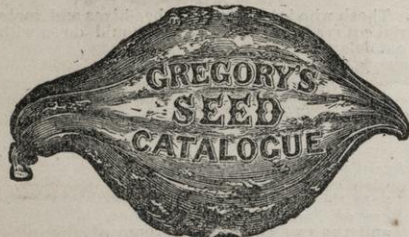
OLIVE ST. NURSERY.

P. O. Address---Colman, St., Louis, Mo.

I keep a general and full assortment of Fruit trees, small fruits, etc., but make a specialty of

EVERGREENS,

Choice Flowering Shrubs, Hardy Flowers, Roses, Greenhouse Bedding Plants and Bulbs.



My business is to supply what every farmer of experience is most anxious to get, *perfectly reliable* Vegetable and Flower Seed. With this object in view, besides importing many varieties from reliable growers in France, England and Germany, I grow a hundred and fifty kinds of vegetable seed on my four seed farms, right under my own eye. Around all of these I throw the protection of the three warrants of my Catalogue. *Of new vegetables I make a specialty*, having been the first to introduce the Hubbard and Marblehead Squashes, the Marblehead Cabbages and a score of others. My Catalogue containing numerous fine engravings, taken from photographs, sent free to all.
13t JAS. J. H. GREGORY, Marblehead, Mass.

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J. H. V. SMITH,

Wholesale and retail dealer in

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School and miscellaneous and Sunday school books, Blank Books, Paper, Envelopes, Pencils, Ink, Initial Paper, Writing Desks, Portfolios, Albums, Stereoscopes and Views, Slates, Gold Pens, Pocket Books, Diaries; Sunday school and church

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Day and Sunday School Reward Cards, Family and Small Bibles, Hymn Books and Prayer Books.

12m

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It is a 16 page, 64 column weekly, one of the oldest, largest, best and cheapest agricultural and family papers in the country. First class in every respect and will repay all who take it many times over, with valuable practical and interesting matter. Try it this year.

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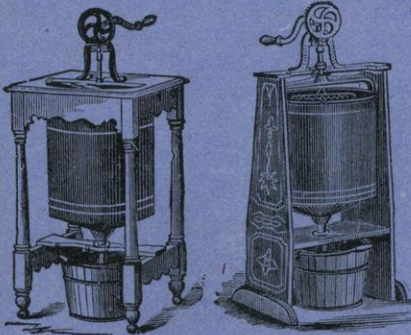
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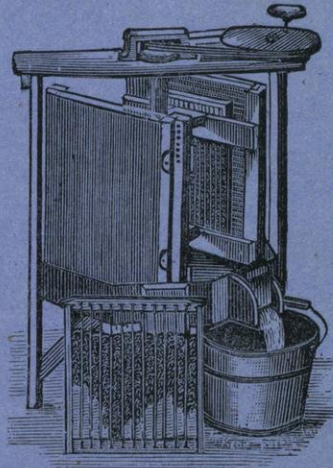
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