Moon's bee world : a guide to bee-keepers. Vol 2, No 12 November, 1875

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MOON'S BEE WORLD,

—A GUIDE TO—

BEE-KEEPERS.

VOLUME 2. NOVEMBER. 1875. NUMBER 12

CRYSTAL PALACE BEE AND HONEY SHOW, ENGLAND.

At the recent Crystal Palace Bee and Honey Show, held in England, a prize of 5 £ was offered for the largest yield of honey from one hive. The award, and mode of obtaining the yield which received it, is mentioned in the British Bee Journal as follows:

"In the honey classes the display did not nearly equal that of last year, still some wonderful supers were shown. Undoubtedly the magnificent super from Kingsbridge, Devon, was the grandest thing of the kind in the Show, being of a gross weight of 93 lbs., and containing 86 lbs., net weight, of splendid honey in the comb; yet it was disqualified. It had been entered in Class 8, for the special prizes offered by the Hon. and Rev. H. Bligh, and E. Melladew, Esq., 'for the largest and best harvest of honey in the comb, from one stock of bees, under any system or combination of systems,' and was accompanied by the actual skep upon which it was said to have been filled, in the South of Devon, 'from wild flowers, no lime nor heather,' was put on 'empty May 4th,' the bees 'commenced working in it May 13th,' and it was 'removed July 30th,' quite filled. The skep was nearly semi-spherical in shape, and contained eleven combs, the largest (the most central one) being $7\frac{3}{4}$ inches deep in the center, and $14\frac{3}{4}$ inches long on its bottom edge, the others (in such a shaped hive) were of course 'smaller by degrees,' the outermost not being larger than the palm of the hand. The skep measured inside 16 inches in its longest diameter, and 15 inches in its shortest, and was 8 inches high, while the octagon super was $18\frac{1}{2}$ inches between its parallel sides, and $10\frac{1}{2}$ inches deep; and it seems to have been thought impossible that so large a super could have been filled, according to the stipulations of the class, from so small a hive, and it was disqualified accordingly.

The first prize was taken by T. W.

Cowan, Esq., of Horsham, with a pair of bar supers of a total weight of 80½ lbs., obtained as follows:

"'The stock which produced these two supers is situated in a loft over a stable facing the south in Horsham, Sussex. It was a swarm hived on 3d of May, 1874, and in the autumn ot that year a super, weighing 34 lbs. was taken from it. It was then prepared for wintering in its Woodbury frame hive by having two of the outside frames removed, from which the honey was extracted, and the combs laid by for future use; two dummy boards were then introduced to contract the size of the hive. The bees were then gently fed until the end of October. The hive was wedged up an eighth of an inch from the floor-board, and the cover was also wedged up an eighth of an inch for winter ventilation. A piece of cloth was placed over the feeding-hole on crown-board. The hive was then left and not disturbed until 10th March, 1875, when the crown-board was removed, and three of the combs were also removed, and the bees brushed back into the hive. The hive was then closed, and on the 11th the five frames remaining were transferred to a clean hive, two of the combs having the cells uncapped to allow the honey to run among the bees. On the 13th the hive was examined, and it was found that the queen had commenced egg-laying. The hive being very strong the remaining combs had their honey-cells uncapped, and two frames of combs from which the honey had been extracted placed between the others; the hive was then closed, and on the 25th all the sealed honey-cells were again uncapped, and the remaining empty combs placed between the others. A bottle of extracted honey from this hive was then placed on the hive, feeding through three holes. On the 31st of March, when all the honey-cells were again uncapped and the honey extracted, and feeding continued until the 20th of April, when the hive was again examined. During this time artificial pollen was supplied, which was eagerly carried into the hive until flowers supplied it naturally, when flour was discarded. On the 20th April, all the honey was again extracted and the feeding continued, and on the 28th, on examining the hive, it was found to contain brood in all the ten frames. and the hive was ready to swarm. Queen-cells having been raised these were cut out and a bar super provided with a bee-trap placed on the top of the hive. On the 29th, the bees were found clustering in super, when a perforated zinc adapter was placed between super and hive. The super was nearly filled by the 10th of May, when the top was removed and a second super placed over the first. The bees were then not interferred with until 23rd July, when the top super was removed, weighing 37 lbs. and a board screwed on the lower super, On the 24th July, the lower super was removed, weighing 43½ lbs· and an empty one furnished with guide-sheets put in its place. In this one the bees commenced comb building, but have not stored any more honey except in stock box. This super was removed on 13th September, and 20lbs. honey has been extracted. Feeding was then commenced to prepare the hive for wintering, which will be ready by about the middle of October. Last year my apiary consisted of twelve stocks, in the autumn they were all strengthened with bees driven from cottagers' hives, and in addition two stocks were made by uniting driven bees in October and starting them in empty hives by feeding on syrup. The twelve hives last year produced 707 lbs. of super honey, and 200 lbs. of extracted honey. This spring I started with fourteen hives, three of which had foul brood. They were deprived of their combs and had to start afresh. Three others had foul brood and the diseased combs were excised and the stocks have since done well. By artificial swarming I have increased my stocks to twenty-four, sixteen of which are Ligurians and four hybrids. The honey in this locality is gathered mostly in May and June, from fruit-trees in the orchards and flowers In the meadows,' "

[We have not space to devote to a proper notice of this exhibition, and can only add that it was a very fine display throughout, taking the British Bee Journal's account of it as our reference. We would like to have had one of Parlange's hives there for the honey judges to have examined. No doubt they would have thought such a scene an imposition also.

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BEES STINGING.

It is known to many that the fifteen years I kept bees in my garden at six Lordship Terrace, Stoke Newington,

the hives being literally shut in on three sides by houses ; and in the time I never heard a complaint of any one having been hurt, alarmed or threatened. It is not generally known that bees should always, if possible, be placed where they will perpetually see human beings busy, and to some extent in their way as they sail to and fro about their business. My bee-shed at Lordship Terrace was within twenty feet of a much frequented path, and I used the path without fear, except on those days of pleasant excitement when the honey was taken, and then, of course, the path was stopped against all except those who had work to do in the apiary.

That in such a built in district bee-keeping was not altogether a folly was several times proved by the exhibition of the produce, which was of the finest quality, being quickly made during June and July, and taken without the use of smake, or fungus, or any other chemical agency. The last box of honey I submitted to public inspection was for some months in the possession of Messrs. Neighbor, of Regent street, who considered it remarkably pure and well-finished.

The bee, like the man, is a creature of habit. When thoroughly accustomed to human society, the industrious insect plods on in the most peaceable and law abiding manner, but residence in a wilderness begets a jealous spirit, and hence, while a town bee is apt to sting when seriously interfered with, and especially when checked in the prosecution of daily duty. During the fifteen years my bees saw much of society they were remarkably docile and manageable, and I could catch them on the wing, retain them in my hands, and after some seconds liberate them, to see them dart like an arrow to the hive, and I was never stung by the prisoners. But when on going further afield, I planted my bee shed in a lonely spot, and the bees saw only open meadows, they soon became so savage that I could no longer frolic with them safely.

As regard the neighborship of bees, therefore, there is no proper objections to be found, and the lonely bees, though unsociable, are neither dangerous to man or injurious to his property. People who go fussing among bees may be punished for their folly ; but a bee intending to sting usually gives ample warning, and there is always reason for the proceedure; it is never done in mere wantonness. Bees are not partial to fruits, and if by starvation they are driven to them, they are liable to suffer from dysentery If they attack fruits, therefore, it is a sign they want feeding. It is at least propable that your correspondent, who complains of the fruit-eating propensities of bees, has seen wasps and flies in myriads among his fruit, and has confounded them with the innocent honey bee.—[Shirley Hibberd, in London Times.

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BEE NOTES.

Bees should now be in proper condition for winter quarters. It is surprising that some bee-keepers still winter their bees out of doors. Circumstances may require out-door wintering ; to prepare the bees for it, remove the honey board, and place over the frames a piece of corse canvass or sacking large enough to cover the entire top. Over this place a mat or quilt made of heavy unbleached cotton cloth and cotton batting. Each quilt

should be of the exact size of the top of the frames, and contain about half a roll of cotton, and be tied in half dozen places to keep the cotton in place. That the bees may be sure of a passage from comb to comb, lay a strip of wood a quarter of an inch square, and long enough to reach across all the frames, under the canvass on top of the frames Fill the cap with straw and place it over the whole. Unless they stand in a sheltered place, they should be well protected from the wind.

I strongly advise in-door wintering in all cases where it is possible. We have practiced several different methods of protecting them out of doors, but find none wholly satifactory, and have adopted in-door wintering entirely. Probably no one thing has embarrassed bee-keepers so much as the general failure in wintering. While most agree that in-door quarters are preferable, there is much difference of opinion as to the proper location and form of repository. Some build above ground, filling thick wall with sawdust or straw. Others build partly undergound, covering entirely with earth. The principal objection to these different plans, is the absence of artificial heat.

We have bought bees quite extensively for the last few years, and in doing so have visited a large number of apiaries each spring. We found those that wintered best were kept directly under a room where there was a constant fire, or were otherwise aided by artificial heat. The following seems to me to meet the absolute necessities for in-door wintering, with least trouble and cost, and avoids the expense of extra fuel for the desired heat, and does not require any special excavation for the purpose. This location is a dry cellar directly under a room where a constant fire is kept: a proper and uniform temperature is indispensible to success. The room must be secure from the changes of the weather outside, either by heavy walls well banked, or by extra partitions and air spaces. I would advise a casing inside of the wall, leaving a space of two feet between it and the wall. To supply the bees with pure air, carry a trunk or tube made of board, through a window down to, and around the bottom of the cellar, letting the air pass out through small holes in the sides of the tube, in different parts of the cellar, If the trunk could be passed for a distance under ground before reaching the cellar, it would give the double benefit of being warm in cold and cooled in warm weather. For upward ventilation, pass a pipe through the floor above, directly back of the stove, and attach it to the stove pipe as short a distance above the stove as possible. This will draw the impure air from the cellar, which will be replaced with pure air from the tube below, keeping all in a healthy condition.

The racks or shelves to set the bees upon should not be attached to the sides of the room, to the floor, or above. To avoid all jarring from above, or from opening or shutting the door when entering the room, let them be made firmly, and rest only on solid ground at the bottom. Arrange the shelves so that the lower tier of hives will be at least two feet from the bottom of the cellar. A room 10x18 will hold 100 colonies. Arrange both upper and lower ventilators to open and close from without. The cold-air tube can be regulated outside the building. The upward ventilating

pipe can have a shutter under the bottom, attached to a wire, passing up through a hole in the floor. Prepare bees for in-door wintering same as for out doors, except that the cap should be left off when carried in. Make an extra bottom board 12 inches wide and 19 inches long, with a piece of hoop iron nailed across one end, projecting over ⅝ inch to hook the frames on same as in the hive. In the other end make a 1¼ inch hole. Our method is to remove the hive from the stand, and put an empty one in its place. In this place the above described bottom board with the hole over the entrance. Then with an assistant remove the combs boldly from their hive and place upon this board. Tie a stout cord around frames and pannels, place the quilt on top as already directed, and leave all in the hive until ready to remove to winter quarters, when bottom board and all can be lifted out and the hive left on the summer stand. Pursue this process until all are ready. The time when bees should be put into the cellar varies with the locality. In Central New York they are usually put away from the first to the middle of November. Great care should be taken to keep out rats and mice. Keep traps and poison between the walls, where they will find them before getting to the bee-cellar. There is much difference of opinion as to the best temperature. Most writers advise 40° to 45°. Our experience indicates 48°. Thus, to sum up, the requisites for successful wintering are: A properly arranged cellar, bees in the desirable shape, suitable ventilation, proper and uniform temperature, total darkness, and perfect quiet. As evidence of its success, I last winter put 121 colonies in such a place, seldom visited them, ascertained the temperature frequently by means of a small thermometer attached to a string and dropped through a hole in the floor, and took out 120 stocks in the spring. —By L. C Root, Mohawk, N. Y.

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Michael Schlatre contributes the following to Our Home Journal:

A certain amount of sunshine is absolutely necessary for the welfare of the inhabitants of the hive. Too much shade is no more beneficial than too much sunshine. I have observed of late that when the sun's rays are too much excluded, those hives are more infected by the moth. Most of those who have started Apiaries in my neighborhood, this year, have already lost most of their bees, by the moth, and further I have found by inquiry that where the black bees are entirely the occupants of the hives, there the moths are more apt to be found. Also, have I noticed where there is Italian, by degrees the black bees become scarcer. I conclude from this fact, that the Italian drones being larger than the black drones, they finally get the upper hand, and thus the young queens are mostly fertilized by the former, and thus the black bees gradually disappear. Such being the case, it is important, that if Italian colonies cannot be had, that fertalized Italian queens be bought and introduced among the bees of the black race, and in a year or two the blacks will entirely have disappeared, leaving the field to their more hardy neighbors. It is also absolutely necessary that at least every two or three years at most, and oftener if possible, the old combs should be rendered up into wax, so that the bees may build other combs. I have noticed that where there were nothing but old combs of a years standing, that the bees seemed averse to deposit honey, and very little brood were reared in such combs; seeing this to be the case, I noticed that the cells in the old comb appeared considerably smaller than those in the new combs, and such in reality is the case, for each successive crop of brood, as they issue from the cells, leave behind them the shroud, and thus gradually fill up or diminish the size of the cells so much so that the queen will not deposit her eggs in them; this season in my rounds in extracting honey, whenever I came to old combs containing old honey I ordered the combs to be

cut out, after extracting the honey, and the emp tied cards I placed in the middle of the hives, and in my next visit I invariably found them refilled with new honey or brood. To the experienced eye of the apiarian, at sight he must know when the interior of the hives are all right. When you see bees coming or going in quick succession as if they were in a hurry, some coming with pollen, then all is right, but if you see them loafing about the alighting board, not knowing what to do, you may either conclude that they have either lost their queen or have one in the process of formation. An examination of such hives is absolutely necessary and whatever the cause. it must be remedied immediately. Weak colonies invite the moth, and also invite robbers, especially when honey is scarce. Therefore have no more partially filled hives, and every card should be filled with comb, especially in the fall and winter. Small colonies are almost certain to perish, if from no other cause but the want of heat. At least once a day in winter give your apiary a coup-d'oeil, to see that all is going on right; prepare in winter your hives and cards for the coming spriug, for at that time (spring) you will be kept so busy that you will need all your time to attend to the swarms issuing from the hives, and in extracting honey. Our honey season closes here about the end of July. In a favorable fall we may extract some from central combs, but cannot count on much. What may be left unconsumed in the winter, must all be extracted in March, when the orchards will be in full bloom, if not before To distinguish when bees are gathering honey, you will observe that they make a musical sound in their flight, than which nothing is more captivating to the ear of the apiarian, and they fly low, and often nearly touch the earth, and rise again gradually; they are then heavily laden. When honey is scarce they go and return slowly without that buzzing noise, above mentioned.

We do not quite agree with all the above. A swarm of Italians will not ultimately cause the disappearance of the black bees in an apiary, especially if of any size. The chances are as one in a thousand that all the young queens will be fecundated by black drones. We will risk a strong hive of blacks against the ravages of the moth, although the Italians are far more successful against their attacks; but Mr. Schlatre attributes too much to the Italians if he thinks that "the blacks will entirely disappear in a year or two," if a few queens of the other race are introduced. One reason for the success of the Italian bee in our apairies is that with their introduction a better and more humane system of bee culture has begun. After the introduction of the queen the owner wishes to get his money back, if possible, and so gives the hive as much attention as his knowledge of the business and time will permit. By the introduction of new blood, new life is given to the colony, and hence, better results naturally follow. We have no objection to changing combs into wax if necessary, but not quite so often as every two years. We have seen colonies do well with comb twenty years old, the cells of which should have been filled up three or four times, according to this theory. Mr. Schlatre does not give his address which, of course, detracts much from the benefits of his article.

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HONEY HOUSE.

Our readers have requested us to give them a plan for a honey room, and the following, which we extract from "Gleanings" may, with changes to suit the location, answer.

My apiaris arranged on a smooth piece of ground constituting a bench about 12 feet above the land below. The bee-house, or honey house is built on the edge of this bench, or in the bank so that we go from the ground of apiary into 2d story of building, where are the extractor, stove for heating water, a small tank holding 75 gallons, etc. In the lower story are kept the carpenter's tools, bench, etc., the large tank, framed in one corner of the building stout and strong boarded up and lined with zinc. This tank holds about 100 gallons, is in south-east corner of

building and is exposed to sun by window on south side of upper story. It is covered with fine wire gauze, and is protected by a partition in the upper story, from dust, dirt, etc. The honey is first put into the small tank where it stands until the trash that usually gets into it when extracting, all rises to the top, when it is well skimmed and honey drawn into the large tank below. The object of the large gauze and exposure of the large tank is to evaporate the honey thoroughly before putting up for market. The honey is drawn from the large tank into cans, barrels, etc., for market. The arrangement of the apiary is in parellel rows 8 feet apart, with hives 6 feet apart in rows, 50 in a row, 25 each side of the door to honey house. My intention is to have an arbor of grape vines for each double row of hives, the rows of posts for trellis 8 feet a part, and vines 6 feet apart in each row and each double row—or each arbor to be 10 feet apart. The rows running north and south, and hives setting just under the edge of the arbor with openings outward, or the hives on the east side opening to the east, and those on the west side opening to the west. Then I can go undsr the arbor and between the rows of hives and be behind each while I work with it. This I like better than your arrangement, for I am always under shade and away from the bees.

I have this season had a temporary shed made by throwing brush overhead, but I intend that the vines shall take the place of the brush. My intention is to provide for 500 swarms, this you see will take 5 double rows with 100 hives in each, or 50 hives in each arbor on each side of the avenue leading to the door of the honey house. Thus you see I have an apiary of 500 hives in a space of 300x90 feet. The apiary being on higher ground than the front part of the lower room of building, I am not troubled by the bees in driving a team up to the door to load and unload. If you had a large lot of bees and honey to handle, you would readity perceive the advantages I have over your arrangements. My intention is to keep not over 500 colonies in one place.

The above, as our readers can readily perceive, is calculated for a large apiary, but it may be modified. Still we do not advise all to build from his plan but just give the extract that those who are so disposed may find a few suggestions of benefit to them.

THE HONEY OUTLOOK.

The prospect for a good market for the honey crop of 1875 seems to be a good one. But the competition has become so great that node but good, first-class honey, is liable to bring a remunerative price. Of course, we have no right to expect to keep our productions in favor with the public, unless they are first-class, and worthy of a paying price. In our travels through the South we have seen vast quantities of finely flavored honey that was spoiled in preparing for market. Indeed, the tronble generally lies that way, and if we would send off our honey in as attractive a style as the bee leaves it in, we dare say there would be no difficulty in disposing of it. Honey dealers in the North and West have already plenty of poor honey on hand, and find that the sale of it is slow; but they are anxious to get comb honey, or very light extracted and say that they could sell such readily. A prominent dealer in Chicogo writes the American Bee Journal that there is "too much bad honey and too little good," and advises that good honey be put in the market at reasonable prices and the evil would be remedied at once. A New York dealer says that city is well supplied for the present, and C. O. Perrine, another dealer of Chicago writes the following:

I have letters from a large number of apiaries having from 500 to 10,000 lbs. of honey to sell, asking what I would pay for it. I have almost invariably requested them to make their own price, stating that as honey seemed to be plentiful, and trade light, prices would probably be low, and I did not care to be responsible for making the price as I had usually done.

Strictly white comb honey for repacking, will bo in good demand with me; and I shall want a few tons of white extracted sage, bass-wood and clover; but as I have a large stock of dark

extracted on hand, from last season, I will probably not want any of that for many months to come. Trade is dull generally, and prices of almost everything lower; a great many things have been over produced, and consequently unsaleable at old prices.

I have reduced my retail prices 25 per cent and even that makes trade very little better.

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BEE PASTURAGE.

BY JEWELL DAVIS.

We learn by experience the great importance of having a sufficient amount of bee pasturage, at all times during the summer season. In all locations it is the great desideratum to profitable bee culture, and it is for the benefit of every apiarist who is engaged in this vocation, whether upon a large or small scale, to see that this pasturage is obtained either by natural or artificial productions. We think none can deny its utility. It is absolutely worth every bee-keepers attention to review what Giles B. Avery has said upon this subject in the American Bee Journal, in his article upon the value of Alsike Clover (see American Bee Journal, vol. 3, page 151.) It is true it may not do as well in every locality, but if we gain only half what Mr. Avery claims for it, from an appropriate amount, our gain will be large, if cultivated by the bee keeping public. He affirms: "We give it as our opinion that if every farmer would put half of the land now seeded to grass into Alsike Clover, bees might be very profitably multiplied in our country, an hundred fold, and each hive furnish many times its present profit, and quite as many cattle sustained by the arrangement as at the present time." It is evident, therefore, that if we make a right disposition of our crops, we can both benefit our bees and our cattle at the same time, and it may be further manifest that we are under obligations to do so, or not succeed in bee culture.

Another writer in the same Journal, vol. 3, page 168, says: "In view of the fact that bee pasturage differs very much in different sections of country, and that it is desirable to furnish supplies for the bees at all times during the working season, or from spring to fall bee keepers should, on all occasions encourage the introduction and cultivation of honey-yielding plants and forage crops." Seasons of drouth particularly diminish the secretion of honey and hence the demand for a larger area in such crops to secure the same amount of honey, and the same may be true in regard to ample pasturage for our cattle. Mr. Manglove further suggests that "from the beginning of July onward, pasturage is rapidly diminished, from the want of rain or drouth. The bees are soon constrained to resort to their winter stores for support. The natural result of this would instinctively lead them to cease rearing brood in sufficient numbers to supply the loss of of population continually going on during the working season, by death or otherwise. And the cold season approaching finds the colony too weak to generate the animal heat required to maintain their existance through the dreary months of winter and spring. The sunny South is more propitiously situated in this respect. It is plain to be seen that an insufficient amount of pasturage at a certain season of the year, may result in a disastrous failure in our apiaries. It is now pertinent to enquire whether we will suffer this failure to occur again and again without an effort to avert it, when it can be done by sowing honey-

producing crops, or appropriate feeding during a protracted drouth in the honey yield.

Mr. J. H. Thomas, in the Canadian Bee Keeper's Guide, says: "The prosperity of bees in every locality, much depends upon the amount of bee pasturage. In some localities it is abundant from early spring until late in the fall—nature having lavishly bestowed there her wild flowers. In other localities it is quite different. The section of country where I reside, does not abound with wild flowers; and in the fall, especially, the bee pasturage is quite limited. The difficulty may be easily obviated by the more extensive sowing of buck wheat, and the introduction of Sweedish white clover (the Alsike.") Friend Thomas here gives his evidence and experience in favor of the cultivation of bee pasturage. Shall we profit by it? Wisdom suggests that we should.

Mr. Harbison, in his work on bees and bee-keeping, says: "It is of the utmost importance for the success of an apiary that it be in a locality where bees can readily find an abundant supply of good pasturage. The success of bee-keepers depends greatly on this. As well might a stock grower expect to make his cattle profitable without supplying them properly with food, as to suppose bees will live, thrive and be of benefit to their owners, without obtaining constant supplies of pollen and honey, in some way, from spring to fall, with but little, if any, intermission." With Mr. Harbison's remarks we must coincide, showing most conclusively that we must supply the pasturage where it does not naturally grow without cultivation.

In the Secrets of Bee Keeping, by K. P. Kidder, we find the following: "Connected with the cultivation of bees, it is essential that we understand the true conditions that most favor their prosperity. That these may be known, and in a degree perfected by the hand of man, is quite certain. It is known that the only food of bees is the nectar and pollen of the flowers, and that the different varieties produce these deposits in a greater or less abundance. Then if we would prosper in our endeavor to multiply the specie with success, we must cultivate those plants and trees that yield these flowers longest and secrete the greatest amount of sacharine matter within the reach of the bee." These remarks speak for themselves about bee pasturage and point out what the apiarist should do to make bee culture a paying institution.

E. Kretchmer remarks that "able writers are constantly encouraging the cultivation of bees, and we must join them in their efforts", and in regard to Alsike clover he says: "Yet its greatest advantage for bee pasturage is an equally valuable one, and no bee-keeper should hesitate to obtain a package of the seed," and cultivate it, of course, he means.

While Mr. Quinby was saying "a honey producing country may be like a grazing region. One field may pasture ten times as many cattle as another, and the same difference may be true of pasturage for bees." Yet he adds, while speaking of the clover, buck wheat and bass-wood sources of honey, that where all these are abundant there is the true El Dorado of the apiarist."

Mr. Bidwell says in the American Agriculturist: "We found only six apiaries where natural forage was abundant throughout the season, and

this was in small apiaries in isolated districts. Adjacent to thirty-two apiaries flowers were sown to cover the deficiencies, and these were far the most successful apiaries we visited, making double the surplus honey, compared with the others, taken as a whole. Were this brach of bee culture properly understood, the yield of surplus honey might be increased several hundred fold."

We say it must not only be understood, but it must also be carried into practice to yield an increase of honey. To keep your bees from perishing cultivate all the honey producing plants and trees, and especially those which are useful and profitable for other kinds of stock, fuel, etc.

Mr. Langstroth says: "Doubtles in these districts, where honey is so largely produced, great attention is paid to the cultivation of crops which, while in themselves profitable, afford abundant pasturage for bees."

Above I have presented the subject of bee pasturage in as clear and perhaps as urgent a light as the present demands of the South may require. We of the North must heed it also in special locations, if we make bee culture profitable. Inattention to this is the chief source of the common failures we hear the bee journals speaking so much about. Our motto should be improvement in the right direction.

Before I close let me say a word to the correspondents of the BEE WORLD. I am creditably informed that we are all too careless about sending in our communications, early in the month, and hence the BEE WORLD cannot be issued until near the end of the month instead of the beginning, as is desired. The Editor must have manuscript to fill the Journal, and if you want it early in the month, send in your communications early, so he can have it promptly cut on time.

Charleston, Ill., October 20.

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SKETCHES FROM TENNESSEE.

BY S. D. MCLEAN.

APIARY FOR NOVEMBER.

This month's work will close the active operations in the apiary for the season. He who has his colonies strong in numbers and well supplied with stores, may expect to succeed in wintering. But if any have been neglectful in making the necessary preparations for winter, there should be no time lost now while the weather is yet warm enough to manipulate them. One thing, too much neglected by bee keepers, is that of opening passage ways through the combs so that bees, in cold weather, may pass from one part of the hive to another.

Without this precaution, many bees perish during protracted cold weather. They frequently consume what stores they have in the immediate cluster, and it is certain death to all that attempt to pass around the combs to other stores, consequently, if there is no chance to pass through in the midst of the cluster, the inevitable result is the loss of all so isolated.

Hives should be contracted in size for wintering as warmth arising from the bees is much better economized. If long, single story hives are used, division boards are commendable.

If double stories are used, the top story may be removed, or what is better, remove the combs from the top chamber, spread a quilt, cloth or paper over those in the lower chamber and then partly fill the upper story

with something to absorb the moisture arising from the bees, and confine the heat. Cotton seed answers the purpose well.

The entrance to all hives should now be contracted to very narrow limits which answer the double purpose of a better defense against robber bees and also of economizing heat.

We deem it unnecessary to say any thing in reference to housing bees, for winter, in our latitudes, though in unprotected situations, it is advisable to shelter the hives to some extent against the severity of northern blasts.

OUR APIARY SKETCHES.

We have, for the benefit of beginners, given in the BEE WORLD, a short sketch on the apiary for each month during the year, suited to our latitude. Presuming that old and experienced bee-keepers are as well educated in the subject of apiculture as we are, we have not written these sketches with a view of benefiting them, but on the contrary, we have endeavored to assist the inexperienced bee-keeper by giving plain and practical instructions. If we have been instrumental in benefitting any for whom these sketches were penned, then we have accomplished the purpose for which they were written. And now as the series is closed, will not some other of your correspondents assume the task for the next twelve months, that beginners may have in every number instruction for that month's operation.

We would like hear from Dr. Brown and R. M. Argo. What say you friends?

ERRATA:—In "Apiary for October," word next the last, read "seal," instead "eat;" date, Oct. 1st, instead of Oct. 21st.

Culleoka, Tenn., November 2.

BEES LEAVING THEIR HIVES.

CEDARTOWN, GA., September 18.

MR. MOON:—Having been a very little while in the bee business, and on a very small scale, I am unable to give anything of value to bee keepers, hence I do not pretend to write for the WORLD, which is always a welcome visitor. I began last year with two colonies. I had only one swarm from one of them, the other producing neither bees nor honey as a surplus. I bought the right to the Thomas hive of Maj. Byrd of our county. I manufacture my own hives.

Maj. Byrd transferred the two above mentioned swarms, the young swarm having been hived in one of the new hives. Owing to inexperience, ignorance etc., I made my frames all too large for the chamber, so that I could not lift them out. Hence I was compelled to retransfer them all this year, which I did after visiting your apiary, and used your improved hive.

I began this year with four colonies (having bought one), have had one natural swarm, and three artificial, so that I now have eight.

My bees have made but little surplus honey, and I have been trying to increase in bees, rather than honey. At the present time they seem to be consuming rather than increasing their stock.

SEPT. 21.—A swarm to-day, but diminished the number of colonies instead of adding to it. Most of my bees are on a stand near my residence. I had two colonies about forty or fifty yards from the others. To-day I was examining one of these two, and when I had taken out about half of the frames, the bees seemed to become excited, and began to rush out over the

top of the hive, and so continued till the hive was emptied of bees. They started toward the house and I followed to see the result.

They went directly for the hives at the house, upon one of which they settled. After a little delay, they began to enter, and soon seemed to be perfectly satisfied with their new quarters A few, I think, went into an adjacent hive. So I have now only seven.

Now I cannot account for this maneauver, unless it be that they had lost their queen, which I think probable, as they had but little brood and no eggs. They had been on that stand since about the first of July. But why should they leave their hives, and choose to unite with another, even if they did have no queen? And why choose to leave just at the time I was handling them? They had plenty of honey.

Nov. 8—Since writing the above my bees have stored considerable honey, although I have taken very little from them, as it was quite sour. Most of them seem to have enough for winter, but I do not know that it will be wholesome. My bees are all blacks; hope to Italianize some next spring if they winter safely.

[We can only account for such an exit on the supposition that the bees had no queen. Had they been without honey we would unhesitatingly have laid it to that as the cause. They were probably intending to leave the hive, and your disturbing them hastened their departure.]

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If you do not receive the WORLD when due, inform us of the fact, and we will re-mail you a copy. The fault generally lies with the mails, when the numbers fail to come regularly

RATIONAL BEE-CULTURE.

PURSUED WITH FIXED COMBS, FOR THE CONVENIENCE OF THOSE WHO USE COUNTRY HIVES.

(Continuation and conclusion.)

VI. In May, when the bees renew their activity for the great harvest of the spring-time, the honey chambers must be affixed to all the hives, even upon those ready to send forth swarms; for as these have the instinct of swarming already awakened, the exit of the swarms will not be materially retarded by increasing the space.

In this month, the bee-tender must take note of those hives in which the bees fail to furnish thriving broods; always the case where the queen is unprolific. Such hives must be but sparingly robbed in autumn.

After the exit of the swarms, the bee-tender must observe the hives, in order to change the combs that have become old and blackened. In these hives, twenty-one days after the swarm, when all the brood left by the emigrating queen shall have been born, a partial gathering of the wax may be made by operating in this manner:—Take the hive by the planks forming the base, turn it upside down, stupefy the bees with smoke, and with a curved knife cut the comb horizontally at about from four to six inches below the upper chamber, taking away the lower part, [of the comb], and leaving the upper, which being the natural magazine for the honey, and free from the broods, is always less discolored than the other. Then replace the hive in position. The bees will build out the comb, and having a young and fecund queen, will construct it with small cells.

VII. During the season of bee labor the bee culturist using hives with fixed comb, may amuse himself with caging queens in a few cases, although not in so complete a mode as the bee-culturist who uses hives with movable comb. Yet he can, by means of cages, preserve royal cells, and imprison queens for the purpose either of bestowing them upon orphaned hives, or for suspending the production of broods. This is the mode of proceedure in such an operation:—Turn the hive upside down. If it is required to cover royal cells, the bee-culturist must select those about to be hatched, which will be found on the inferior margin of the comb, and cutting away a little of the comb, cover the cell with the cage, fixing it well in the cage, but taking care not to let it extend beyond the middle wall so as to prevent the bees making a passage-way. If, however, it is desired to imprison a queen, drum upon the hive, in order to make her come to the extremity of the and as soon as she is seen, cover her with the cage, tak ing care that she enters alone; then if it is desired to take her away, slip a card beneath the cage, and thus shut in the queen; but if it is only required to imprison her in the comb, press the cage into the wax, as described above.

CONVERSATION SEVENTH.

OPERATION OF THE BEE-CULTURIST IN SUMMER.

I. Upon the coming of the heated term of summer, which fades and dries up vegetation generally, the great season of honey-bearing ceases, and the bees hardly gather what suffices for their daily need. Of this there is unmistakable indication when the bees are seen inactive about the entrance to the hive, a few going and coming through urgent necessity, and only about noon issuing in any great number, with the drones, to relieve themselves; and finally when they are found persecuting the drones, or males, that hang dejectedly about the hives, not daring to enter. This comes to pass in some places about the end of June, in others in July, and even a little later in those localities where the resources of honey-dew and of the blooming heath or furze prolong the honey-bearing season. But, whenever the above-mentioned indications are observed about the hives the honey chambers must be immediately removed, for the bees carry the honey below from time to time, as they find empty cells; that is, cells left empty by the continual birth, and the gradual diminishing of the larvæ.

II. In this season it is possible that some hives may be found deficient as to their colonies, as the less prolific queens may not have supplied a sufficiently copious larvæ to repair losses; also, some hives may be found orphaned, especially those that have sent forth queens oftener than once. A colony may be known to be orphaned when the bees do not gather pollen, or when they do not persecute the drones at the accustomed time, and when, even, they permit the entrance of wanderers from other hives; in the evening, also, they do not hum, and they do not keep guard in front of the entrance, and the hives present almost the appearence of being deserted. Now, these weak, or orphaned hives should be united to some one of those in good condition, since they are not useful to the bee-culturist, and are liable to become the food of the moth worm; but united to some other hive,

they may be turned into profit. The union of a weak, or orphaned hive with one in good condition may be effected by placing the weak hive upon the other, leaving the two thus joined till autumn, when the hive without a queen may then be removed, as though it were a honey-box.

III. In summer the moth is developed in great numbers, and all the enemies of the bees assault the hives on every side. Therefore it is, at this season, more than ever necessary to keep the hives clean, to have the joints and cracks of the hives all stopped, to defend the entrances with barriers; and wherever any colony seems to be infested with worms, which may be known by their excrement in the form of a black powder on the planks that form the floor, it will be necessary to lift the hive, to kill them in the comb, to persecute them until the bees shall have free room; for, indeed, the bees themselves know the necssity of avoiding the nests of these enemies, and of killing these destroyers of their labors.

CONVERSATION EIGHTH.

WORK FOR THE BEE-CULTURIST IN AUTUMN.

I. At the end of September, and not later than October, the bee-tender will visit his apiary for the last time, in order to make the partial and total gathering of honey, and to arrange such colonies as he intends to keep, for the winter. It is necessary to make this autumual review in season, immediately after the cessation of all honey-bearing resources, in order to leave the colony at ease to select and settle their winter chambers.

II. These, then, are the labors that must be performed at this season:—If, in the first place, all the honey-chambers have not been taken away, they must all be now removed, in order to take some honey from each hive, and in order also, to restrict the bees solely to the chamber where are the larvæ, as winter quarters. The passage into the honey-box must be closed with a plug, or with a small plank, or shingle, sealing it with clay or sand, to retain the heat in the hive.

Orphaned hives, scantly populated, or weak hives, in which the bees occupy but one comb, or two; those which in May had been noted for a scarcity of larvæ, and those also which have been found not to contain a sufficiency of honey, should be suppressed that is, all the honey and wax should be taken from them, and the bees reunited to some other colony.

—Those hives in good condition, that is, well populated, with a young queen and having good, healthy comb, but with small provision of honey to last till spring, must have food given in the evening. A colony requires from eight to ten kilograms [A kilogram is equal to 2 lbs., 3 oz., 4.65 drs. avordupois.] of honey, from October till the end of March; and from eleven to twelve until May, calculating that in the cold months the bees will eat less than one kilogram per month; that in the warm season, when the bees resume their activity, and begin to rear broods, they will consume two or more kilograms per month; and that a bad season, or unfavorable weather is rare in May. In order to ascertain the quantity of honey to be supplied to a colony, the hive must be weighed, the weight of the hive must be deducted, together with an allowance of four kilograms for bees, comb, and pollen. It is estimated that a colony will require about five kilograms of honey to last through the winter.

III. The watchful and diligent bee-

culturist, who finds in autumn that he has no useless hives to destroy, such as orphaned hives, weak hives, &c., &c., and who yet does not wish to increase his colonies, should reduce the hives of his stand, suppressing about a third, in order to make room for the swarms of spring which he cannot altogether prevent. For this reduction we should select those hives of which the queens had not been very prolific in May, or are old, or at least not very young, and those (hives) wherein the combs are ugly and black. He must then reunite, as directed, these hives with those he intends to preserve. In this manner he will succeed in reinforcing the hives of his apiary, in changing the old queens, and in making a complete harvest of honey and wax.

The hives of the stand being thus reduced to such as are well populated and well provided with the necessary supply of honey, it is certain that the colony will pass the winter season safely, and that they will recommence, with vigor and activity, the labors of spring.

CONVERSATION NINTH.

CARE OF THE BEES IN WINTER.

I. At the first approach of cold weather, care must be taken to bar the entrance of the hives with little slats, as before mentioned, in order that when the bees no longer keeping guard, retire to the upper chamber or upper walls, mice may not enter in and destroy the comb. Also, the hives must be well protected against rain and wind, and every precaution must be taken to prevent the colony from being disturbed by noise, or from being shaken during their winter rest.

II. When the bees no longer go forth, and cease to attend cleaning the hive, should any dead bees be found at the entrance of the hive, they must be gently removed, that the circulation of air be not impeded. In this season, the hives may be moved nearer one to the other, thus filling up such places in the stand as may have been left empty by uniting orphaned hives with others, &c. But great care must be taken to move the hives delicately, without noise and without jolting, which would alarm the bees, many of which, attaching themselves by their grapplers, are benumbed and motionless. In temperate climates it is not advisable to transport the hives for wintering to subterraneous or enclosed places; it is better to leave them in their places in the open air, for on warm days that occur even in most rigid winters, the bees will go forth for the purpose of purification, and thus they will escape dysentery, a disease that is often the result of their being unable to unload the intestines at the proper season.

III. In southern exposures, and in places too warm and sunny, it is well to protect the hive with mats, or something of the kind, from the rays of the sun, which, heating the walls of the hives, tempts the bees to a useless and injurious flight.

When snow has fallen, it is well to clear away a space about the stand, for the reason that when fine days come, as is generally the case after a fall of snow, the bees coming out and falling to the ground are benumbed. Should it not be convenient to remove the snow, straw may be spread above it, or a coarse cloth may be laid down, but kept by blocks from contact with the snow, so that the bees in falling shall not remain benumbed, but may fly back to the hives.

Moreover, cats must not be allowed to repose on top of the hives, which they are fond of doing in order to sun themselves, nor must any other animal that can disturb the quiet of the bees be permitted near the hives.

During those months that the bees remain quiet and inactive, the bee-culturist may prepare such appliances as he will need in the next season, and he may also apply himself to acquire a theoretical knowledge indispensible to success in this industry.

CONVERSATION TENTH.

ON THE GATHERING AND EXTRACTING OF HONEY; THE MELTING OF THE WAX; THE PRESERVATION OF COMB.

I. The fixed bee-culturist takes the honey from the honey-boxes for a partial gathering, and from the entire hive for a complete, or total harvest. If the honey-box is furnished with movable comb, he has but to remove the frame with the comb entire; if, however, his honey-boxes have the combs fixed to the walls, as in the lower part of the hive, he must detach the combs, withdraw them by piecemeal, and thus empty both the honey-box, and the hive proper. He must keep to itself the comb from the honey-box, because these contain pure honey, without larvæ. For extracting the honey from the entire comb, or even from the broken pieces, the best instrument is the honey-extractor. First, it will be necessary to open the lids that seal the cells with a thin bladed and pointed knife, or any pointed instrument; then these combs, or pieces of combs thus prepared must be placed against the walls of the honey-extractor, which must be turned slowly at first until the cells are half emptied, and then, in the other direction, in order to empty them completely. The scraps of comb being placed at the bottom, will, as they are turned, be emptied of honey. The honey that flows in this way is pure, and is called virgin honey.

But even without the honey-extractor one may obtain virgin honey. First it will be necessary to cut away such portions of the comb as contain larvæ, in order that the honey to be expressed be not defiled. Then those combs containing pure honey may be broken in pieces, and placed to drip in flat baskets or thin bags, or upon grates, in some high, warm spot. Honey that flows thus is virgin honey.

The emptied combs, the slices and bits of wax, well cleaned of larvæ, must be placed in thin bags and pressed between weights, in order to express every remains of honey, which is inferior to the first, and is of second quality.

Lastly, every bit of comb thus pressed, with all the washings of the utensils, and the implements smeared with honey, must be placed in a caldron at the fire, and gently heated, to free the wax entirely from honey. In this manner is obtained a honey water, which, reduced to a syrupy consistence may serve as nutriment for the bees, provided that it be given them occasionally, and within the hive, when the colony go forth for the purpose of purification.

II. The honey being extracted, the next step is to melt the wax. If the combs to be destroyed are old and black, it will be necessary to keep them several days in fresh water, often changed, to despoil them of all coloring matter. For the melting, the broken comb must be placed in a caldron, with just enough water to cover the pieces, which should not fill the

receptacle for about a third, as when the wax swells under the influence of heat, it may take fire should it boil over. The comb must be slowly heated to the boiling point, keeping the liquid at this degree of heat for about half an hour, when the wax will be seen floating of a clear yellow. Then, take a bag of coarse, but thin cloth, which dip into the liquid to keep it warm, and fill it with the boiling mass; then draw it forth, press it between weights, or simply between two planks, holding it above some receptacle, which contains a little fresh water. The wax must be left to cool in this receptacle, keeping it undisturbed, that it may not crack. The next day the moulded wax may be taken out, and the bottom, called the feet of the wax, scraped off. If it is desired to have purer wax, and of a given form, it must be again put on the fire in an earthen pot with a little cold water covering the bottom, and it must be melted without boiling, in order that it be not blackened. Next, the vessels destined to give form to the wax must be prepared. These must be oiled, as the wax is thus more easily detached when cold. The outside of these vessels must be wrapped with straw or something else, so as to retain the heat; and the top must be covered with a lid having a hole in the middle, so as to secure the cooling of the wax first in the center, in order that the cake may be shaped without cracks. When the wax is melted it must be poured into these vessels, and left undisturbed for twelve hours, until completly cooled.

III. Those who have honey boxes with moveable combs, and having emptied these combs without breaking them should preserve them, in order to place them in the honey boxes according to need. The combs should be kept in a cool, dry place, to preserve them from mould; and they must be protected from wood lice by smoking with sulphur two or three times immediately after taking from the hives, and several times again during the warm season, to keep away moths, and to kill the eggs of the wood-louse.

Also, those combs with large cells which have not held larvæ, since they are of a clear yellow color, and may serve as magazines for honey, may be kept; but when these turn dark they should be melted for wax. All the scraps of comb, and the wax that is gathered in the course of the year, to be kept until the melting season in Autumn, must be protected from wood-lice. For this purpose it will be well well to press the wax into balls, which the wood-lice do not easily penetrate, and to keep them in some dry, cool spot.

CONVERSATION ELEVENTH.

THE ENEMIES OF THE BEES.

I. The experimenter in bees, not to call him a bee-culturist, who accumulates colonies, through a greed of making spoil of almost the entire product of their labors, is the first enemy of the bees. For against this powerful assailant, the little insect cannot effectually defend itself; thus, the rational bee-culturist comes to the aid of the weak, teaching how the honey and wax may be appropriated without destroying the colony, and how the life and prosperity of the laborious and useful insect may be secured.

II. Birds, mice, lizards, spiders, wasps, hornets, moths, etc., etc., are all enemies of the bees, and continually beset the hives, to devour the bees, and the product of their industry.

Birds must be kept at a distance by scarecrows, or, better, by guns. Against mice, the best protection is the barriers across the entrance to the hive. The best defense against lizards, is to see that the hives are not in contact with any wall, decayed logs, or other thing that can harbor or conceal these creatures. To guard against spiders, the shelter of the hive must be kept free from their webs. As to wasps and hornets, their nests must be destroyed, not neglecting to keep the entrance to the hives protected by the already mentioned bars, behind which the bees make an efficient defence. Butterflies and moths, that fly into the hives towards evening in August, may be kept by the bars aforesaid, which having but a very narrow space between them, will not admit of the passage of any large insect.

III. Besides the above-named enemies, a great number of nocturnal flies beset the hives in the evening and at night, in order to deposit their eggs, either about or within the hive; for it is in warm weather that their grubs are hatched. These creep into the hives, insinuate themselves into the comb to eat the honey and wax, then wrapping themselves in a cocoon, they come forth moths, to reproduce themselves anew, thus invading and destroying the hives. Their presence in the hive may be detected by their excrement, which they leave upon the planks of the hive, in the shape of black powder.

These enemies are the ruin of the hives; they invade those that are weak or orphaned, converting the comb into a great network of cocoons, encumbering the cells, hindering the queen from depositing her eggs, destroying the wax and compelling the colony to flight. The best remedy against these is to maintain a full population in the hives, so that the bees, being strong may pursue and kill them, and thus prove their own defense. However, it is well also to keep the hives well closed, so that these flies may not enter; and in the evening, a light burning in the middle of a bowl containing some viscid fluid may be placed behind the hives, so that the flies, attracted by this light, may be caught therein. When, however, a hive happens to be invaded by these destroyers, it will be necessary to turn it upside down, to quell the bees by means of smoke, and to cut out the infested comb; and if this expedient is unadvisable on account of the colony, or if there is no longer time for the bees to construct new comb, it is better to destroy the hive, and to unite the bees with some other colony.

CONVERSATION TWELVTH.

ON THE MALADIES OF BEES.

I. Bees are subject to disease, concerning which the bee-culturist should be well-informed, not so much to cure them as to prevent them. The principal diseases of bees are, frenzy, dysentery, the putrefaction of the larvæ, and the plague.

II. The frenzy, called also May evil takes the form of colic pains. It is thought to be caused by the quality of their food. Bees affected with frenzy fly out, fall upon the ground, twist and contort themselves, and die. Warm honey with wine should be administered to the colony.

III. Dysentery may be produced by bad, or too thin honey, or it may be the effect of a prolonged extention of the excrement in the intestines, the bees being prevented from the flight for purification by the bad season, or

by too long a seclusion. In the hives where the bees are afflicted with this complaint the combs, the walls, and the floors will be found foul. Strictly speaking this is not a disease; but it may be productive of grevious consequences to the colony. If the bees cannot go forth for purification, they will not resume their vigor and activity; they will not clean the hives; the combs become mouldy, the air within grows corrupt, the queen is prevented from laying because she does not find cells clean and ready, the colony perishes altogether, if not soon relieved. The true remedy is to procure a general flight for the purpose of purification. This may be obtained by placing a little warm, liquid honey in front of the entrance; or, better, within the hives between the combs and the floor, in order to excite the bees to motion, and thus to issue forth. In case of a bad season, the hive may be removed to a warm shut-in place; and when the bees have returned again, the hive may be taken back to its stand.

IV. The putrefaction of the larvæ is caused by dead and putrefying grubs within the open cells, rarely in those that are closed. These decompose into a viscid, blackish, decaying substance, that permeates all the cells. It is very rarely that the bees are able to clean these cells of the putrid matter, which in the end effects the entire hive and produces a veritable contagion. The grubs may die in the cells through the effect of some sudden chill in the hives, consequent upon the lowering of the temperature at the moment of the most abundant deposit [of eggs], or from some other disaster; or indeed, even from hunger; if, thro' a sudden change of season, the resources of honey should fail just as the broods are being raised. The remedy is to cut out the combs, change the hive, and compel the bees to make new constructions. For this operation, one must get possession of the queen; she may be made to come to the edge of the combs by drumming on the up-turned hive. She must be placed in an empty hive fixed in the place of the infected hive; the bees must be shaken to the ground, and then left to seek their queen in the new hive. But it is better to seek to prevent putrefaction, by keeping the hives well repaired, and by restricting the colony to the seat of the larvæ until warm weather shall have set in decidedly, and not to make imprudent transportations of hives upon occasion of artificial swarming.

V. The pest or plague a is contagious disease that strikes down and kills the larvæ in all stages of development, but especially the sealed up larvæ. This disease spreads rapidly, destroys the hive, and the entire apiary. The cause is still a mystery; but it is known by experience that it is conveyed in the honey, the comb, the hives, the utensils, the bees themselves, and even by the bee-tender, or by anything that may have come in contact with the infected hive: in a word, that it is emphatically contagious, and that its infectious and contagious germs disseminate themselves everywhere in the atmosphere, so as to become also epidemic. The stench of the decaying matter which exhales from the infected hive, the lids of the cells depressed with a little hole in the middle, a viscid, black, and putrefying matter in the cells and upon the planks of the base of the hives, are indications of the presence of this scourge. It is no

new disease, although but lately investigated by bee-culturists. No sure remedy is known. As a preventive measure, it is necessary strictly to avoid contact with anything infected, and especially to feed the bees with honey known to be pure and healthy. But where the plague has shown itself, the sole expedient is to destroy bees, comb and all, burying the whole deep in the earth, in order to preserve the apiary. The hives must be disinfected with lime and acid, as is done with the houses and effects of cholera patients. Straw must be burned inside [of the hives], shutting them closely in order that the fire and the fumes may penetrate every fissure; and then for several years they must be left unused and exposed to the air. By these decisive means of combatting the malady upon its first appearance in a country, one may hope to prevent the contagion from degenerating into an epidemic.

CONVERSATION LAST.

ON CERTAIN MEMORANDA WHICH THE BEE-CULTURIST SHOULD KEEP.

The bee-cuturist should keep a register of his apiary, in order to have always present the following references:—The distinctive number of each hive; the weight of the hive; the age and quality of the queen of each hive; —the date of the swarms; the product in wax and honey of each hive;—operations already performed, and those to be performed;—amount of provisions for winter; and all events worthy of being recorded in relation to the apiary during the season of honey-gathering.

For this purpose it will be well to have a little book with as many pages as there are hives in the stand, setting down on each page the notes relative to each hive.

The bee-culturist who does not register the above-mentioned notices, does not know his hives, exposes himself to the performance of his operations at hap-hazard, and at the risk of great drawbacks that may compromise the good results of a careful culture.

He who uses fixed comb, or rather hives with fixed comb, has but a small step to take to convert them into hives with movable comb; and he who pursues the former method has but to adapt the perfection of bee-culture to movable combs; to which he may be the more readily inclined, as this last method is the surest he can promise himself.

[Translated for the BEE WORLD from the Italian of Flaminio Barbieri, in the September number of *L'Apicoltore*, (the Bee-Culturist), a Bee Journal, published at Milan, Italy.]

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THE HONEY MARKET.

H.

MR. EDITOR:—We have, in one way or another, each season, managed to dispose of what honey we had, but not always satisfactorily,—frequently, to get rid of it, it was bartered for what we was in no immediate need of, or sold at not remunerative prices; and this season—'75—it has been duller than ever before. Money has been scarce; and the people looking for still tighter times, they would not buy, honey being no necessary article of diet. A small amount to druggists or physicians to mix into cough and cold medicines is our regular market. The season with us is ended; and has been an average one; and although it is said the bee works for nothing and finds himself, it cannot compete in quantity and price with sorghum. Every other farmer in our locality has

a patch,—many five, ten, and twenty acres. The crop is large, and the creaking of the mills can be heard in every direction. Empty barrels, casks, kegs, jugs, pails and buckets have been in request, and every one has a surplus to spare, and it is selling at 25 cents per gallon, which is about 2 cts. per lb. Who can afford to sell honey at double or thrible that price? Offer honey for sale now in our community and the enquiry comes, What do you ask per gallon? In reply we say, we sell by the pound at 12½ cts. How many pounds is there in a gallon? About eleven. Whoop! can't stand that—too high; that's about $1.50 per gallon—can buy sorghum at 25 cts., and the children lick it up fast enough at that! All acknowledge its superiority, BUT THE PRICE!

As Mr. McLean remarked in October number, "honey has no commercial value attached to it." In middle Tennessee, it is true. In the metropolis—Nashville—after spending a day in searching for purchasers, I sold only 120 lbs. Every other production, with us, has a price and market. Corn, wheat, oats, rye, potatoes, peas, beef, pork, lard, and in fact whatever the farmer raises is priced in our daily prices current. Honey is not mentioned. We see beeswax quoted at 28 to 32 cts. per pound, but what intelligent bee-keeper would be willing to run his apiary for wax alone. If he possessed one thousand colonies, and looked to wax alone for an income, he would run aground the second year, if he fed and clothed himself. If we raise a surplus of horses, mules, cattle, sheep, hogs or poultry, there is always buyers in nearly every portion of our broad land. Is it so with bees? When well kept, bees accumulate as fast as any stock on the farm, and when very numerous, in some localities, cease to be profitable. You occasionally find a purchaser, but they have no commercial value. Where is the market you can dispose of 10, 50, or 500 coloniies, at a fixed price? Spend your time and money in building up a flock of sheep, or time and labor to produce a cotton, sugar or grain crop, and you can at any and all times find purchasers; but spend your dollars for hives and apiarian supplies, and circumstances cause you to change your pursuit, where can you find ready purchasers for your stock?

With these reflections you need not consider us a disappointed and humbugged bee-keeper; for if we could never be able to sell another pound of honey, we would keep bees, and intend to keep them as long as we live. Have kept them for fifteen years, and altho' not particularly fond of honey ourself, half a dozen children, who sit at our table, attest their love of this sweet at every meal. They are allowed to eat without stint or restraint, not one have we seen sick by eating of it. In fact between meals they hardly ever eat a cold biscuit, which has been placed in the cupboard for them, without a saucer of honey to dip it in, and help the go-down. To keep them from daubing the floor and furniture, the old lady sends them out in the yard with their bread and honey, and we have frequently been amused in a dry time, when no honey could be found in the flowers, to see them "sop" around the bees until they became too numerous and began to alight on their sticky fingers, when they would squall out "Mammy! mammy! the bees after us!" and break and run for the house.

There is no stock on the farm that

requires so little care and attention as the bees; and none that pay better, if you never sell a dime's worth of honey, where there are children. Let the children eat of it whenever wanted, and they will be healthy and stout. Not your old black comb, with bee-bread or larvæ, but the nicest and purest you have.

Murfreesboro, Tenn.

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ON GEORGIA BEE SHOWS.

BY H. J. PETER.

PUBLISHERS OF BEE WORLD:—I was greatly pleased with the report of the Special Correspondent of the Bee Keepers' Magazine, who attended the Crystal Palace Exhibition of Bees, Hives, Honey, etc., at London, in September last.

I would like for you, in the interests of southern bee-keepers, to copy the same, and also give us the proceedings of the meeting of the British Bee Keepers Association, held at that time. We need such articles, especially the officers of the Georgia State Agricultural Society, to inform them as well as us how to organize and conduct an Apiarian Exhibition. We have never yet had a bee show of any consequence in this, or any other southern state. The State Agricultural Society, with its limited knowledge of the wants of the bee business has, it is true, offered as liberal premiums as could be afforded, but the exhibitors have never exceeded two or three persons.

We need a Georgia Bee Keepers Association, which could afford to subscribe five hundred or a thousand dollars in money, and guarantee fifty or one hundred exhibitors to aid the State Agricultural Society in developing this great industry. I believe strongly in liberal prize money, as my experience at fairs and shows goes to prove that it is this alone which secures a large attendance, and causes active, instructive competition. So strong is my faith in this opinion that I will be one of twenty-five, or fifty to give twenty dollars each towards organizing a Bee Keepers Association, and having a good Bee Show, either at our next state fair, or on our own hook at an earlier period.

In this connection I do not cast any reflections upon the display at our late fair, as it was very fine, but my idea is that it was not sufficiently large to attract the general public to investigate bee matters. In justice to Mr. Moon, who was the only exhibitor, with one exception, I would like for you to publish, with this letter, the following report of the Committee appointed to pass upon articles entered in the bee department at the fair. This you can safely do, no matter how much Mr. Moon dislikes to publish articles in his own praise, as I know he is now absent in Florida. I only wish the report could give him all the credit he deserves, for I consider him the pioneer in all matters pertaining to improved bee-culture. The following is the report:

TO THE SECRETARY OF THE GEORGIA STATE AGRICULTURAL SOCIETY:

SIR:—We, the Committee appointed to pass upon entries in Department 3, have performed that duty and beg to report the following awards:

No. 97, For greatest yield of honey from a single hive, $20, to Mr. A. F. Moon.

No. 98. For the best display of honey, $20, to Mr. A. F. Moon.

No. 99. For the best Transfer, $20.

to Mr. A. F. Moon.

No. 100. For the best swarm of Italian bees, $20, to Mr. A. F. Moon.

No. 101. For the best Hive, (Moon's Improved), $10, to Mr. A. F. Moon.

No. 102. For best Queen Nursery, $10, Mr. A. F. Moon.

We take this occasion to commend Mr. Moon to the most favorable consideration of the Society. We find him far advanced in the science of Apiculture, or, in other words, well educated to the bee business. His visits are instructive, and are appreciated by hundreds who witness his handling of bees, and listen to the explanations which he freely and unselfishly gives. Were it not for him this industry would be rarely and poorly represented at your fairs. We consider him authority on all matters concerning bee-culture, and hope his efforts, rewarded by your liberal premiums, will before many years make Georgia one of the leading honey-producing states.

Mr. Moon exhibited quite a number of stocks of the purest Italians, which evinced rare skill in breeding.

His display of honey in glass pyramids and other attractive forms, we consider the finest we ever saw, and exceeding in elegance anything that he has heretofore exhibited.

His hive, Moon's Improved, we recommend as possessing a greater capacity for surplus honey; greater convenience for hiving, handling and extracting, than any other on exhibition; it can also be manufactured as cheaply as any other.

We would call particular attention to his manner of breeding queens in nursery cages. These cages should be in every apiary for breeding, confining, and introducing queens. In this connection we would urge upon all bee-keepers the importance of having good tested Italian queens in all their stocks.

We were pleased with the honey extractor manufactured by A. I. Root & Co., and exhibited by Mr. Moon. We recommend it to all interested.

We take pleasure in recommending Mr. Moon to all bee-keepers in want of bees, queens, hives, and apiarian supplies generally.

Respectfully,

H. J. PETER, }
C. C. SIMS. } Com.

[We insert the above in justice to our chief, knowing that the praise is fully merited. Mr. Moon has labored zealously for the cause of bee-culture in the South, and with scarcely an exception has converted all with whom he has labored to that cause. He has traveled almost constantly (when not confined in his apiary), establishing apiaries, transferring bees, solociting subscribers for his hobby, the BEE WORLD, and doing everything in his power to keep the subject before the people; and at a considerable loss, pecuniarily. To such gentlemen as Mr. Peter (beg pardon, but we are going to praise all around, now) he owes much, finding them always ready to co-operate with him, unselfishly and freely.

To the proposition to establish a Society in the South, we respond. The BEE WORLD puts down $20 towards establishing the Society, and its columns are open to further discussion on the subject. The English bee-keeper is far ahead of us in his ideas of co-operation, Associations, and liberal patronage of his Conventions. We have a full report of the Crystal Palace Bee and Honey Show, but considered it rather too lengthy for publication.]

CULTIVATING CROPS FOR BEE PASTURAGE.

We receive so many inquiries regarding the surest and best way to procure bee pasturage, that we have requested many of our contributors to give their views on the subject, thereby getting the information from a larger scope of country than we could give. The following we quote from the Country Gentleman:

What are the most profitable crops for the farmer to cultivate for the benefit of the apiary? Early resort is made to the sugar maples by the bees in the spring season. Fruit blossoms, among which apple, pear, peach and red raspberry may be regarded as the most important, give an important early field for the honey harvesters. White clover may be considered the most important honey plant produced in our fields. The linden or basswood trees are among the greatest honey producers in our forests. The honey locust also gives quite a honey harvest in its season. Were I establishing an apiary on a farm permanently mine, I think I should endeavor to secure a garden and orchard with fruit in such abundance as the market and family would warrant the sale and use, regarding the profits secured from the fruit blossoms by the bees, as one source of the income derived from them. Shade in the pastures and by the highway side is both pleasant and profitable. For shades I should plant maple, locust and basswood in the fields for the accommodation of the flocks and herds, and by the sides of the highway, securing pleasure to the traveler and wayfarer, and adding to the growth of wood and increase of fuel, of which many sections of our country are suffering for want of. White clover is a honey-producing plant, more generally spread through the country, and more productive of the best quality of honey than any other plant in New England; I know not but through every habitable part of the country. Every farmer with a little effort rightly directed, may whiten his fields with its blossoms, feed his stock with the best of pasturage in addition to the honey that I think might itself cover all the expense. If there are any products of the soil that would pay the full expense of their production in honey, I think the basswood and white clover would be the producers. Buckwheat in some sections of the country is raised for sale, may produce fair profits, and give considerable honey, of darker color and stronger taste than white clover, yet preferred by some.

SUNDRIES FROM SUNNY SIDE,—SOUTHERN MISSISSIPPI.

ANNA SAUNDERS.

STRANGE CONDUCT OF A COLONY OF ITALIANS.

I was just seating myself at dinner, whe the cry of "Bees swarming!" took me at a double quick pace to the apiary. In the swarming season I always keep an empty hive ready; a frame of brood and eggs was quickly inserted, and as the bees were so kind as to cluster low on a nice little twig, I had them all in the hive and, as I thought, contented, before the soup was cold at my place at table. But after all I was destined to eat a cold dinner or none, for the bees were out again before I had time to take bite or sup. This time they clustered high, after vacillating for some time in their intention of settling at all. I was making arrangements to get them down, when

two little balls of bees fell at my feet, which I immediately knew contained queens. I had cages at hand so it was only an instant's work to get the queens into them. One was black, the other a beautiful Italian. I put her and the bees into the hive, but the Italians left and the blacks remained with her. Next day I released her without any fears for her safety, but after closing the hive concluded to look in again, and the first thing I saw was the pretty queen in a knot of angry bees. I saw her about a week after releasing her the second time, and then she disappeared. An examination showed that my queens were all in place on her arrival, so that she must have been one that left me early in the season.

Those black bees were the blackest I ever saw—as black as beetles; and without the faintest trace of lighter color. Since I have been keeping bees I have seen only two other colonies of genuine blacks. The bees with which I started my apiary were just like our Italians would be if the narrow yellow stripes which surround the hinder part of the body were continued all the way up, in the place of the broad bands. Of course all the common bees of the country we call black, but in saying "genuine blacks," I mean without the lighter stripes. The other two colonies of which I spoke had a perceptible mark where the lines usually are.

I have known of three colonies of the stingless bee near me, which make their homes under ground. If I had leisure I would experiment with some of them, but household cares, etc., absorb so much of my time that I have not been able to give necessary attention to my apiary, much less indulge in such fancies.

I was much alarmed at one time last summer by the appearance in my apiary of something I have never seen mentioned by any one. In the middle of some of my strongest stocks there would be one or more combs with a peculiar, speckled appearance, as if a little coarsely ground black pepper had been sprinkled in, and through this speckled comb, here and there, cells—perhaps in some a dozen or more—occupied by little pellets or lumps of what seemed to be vinegar mother. Perhaps what the little workers got for honey was not sweet enough, so turned to vinegar instead of thickening. One of our neighbors had a splendid microscope and I spent several hours examining these curiosities, and the different parts of the bee, and the same part in different bees. Two things surprised me greatly: the beautiful and varied coloring displayed, which the unassisted eye cannot percieve, and the variety in the length, and even shape, of the stings in different bees. I thought of Gen. Adair's proposal to lengthen the proboscis of our workers by using queens from mothers whose workers were observed to work on red clover. My bees were in splendid condition at this time.

I saw very little brood last summer which was matured without being sealed up, though the summer before last I saw those great pink eyes in every hive, and sometimes in great numbers.

A while since I mentioned a strange stampede occurring occasionally among my bees, in which they would sometimes actually vacate the hive, taking up their quarters on the outside. My friend, Mr. Argo, held out the hope that he was going to explain the cause of this singular conduct. I trust he

will do it before next summer. I think they always set up a peculiar noise, which I have learned to detect, a minute or half minute before taking this step, and by being very expeditious I have sometimes succeed in closing the hive. After they are clustered outside, the best method I have yet tried for getting them back, is to take a dust pan and gently scrape them up and pour them into the hive. They seem very quickly to forget the terror, or disgust which possessed them a minute or two before. I use a piece of hoop iron for loosening my frames from the hives. I generally let one end of it rest in the fire pan so that it may be hot enough to melt the propolis. On one occasion it became so hot as to cause in melting the propolis quite a little cloud of vapor, a frying noise, and a very overpowering, suffocating smell; all too much for my little pets, and they rushed pell mell for the outer walls. One colony last summer remained located on the outside for several days. In this case it must have been from indignation at my keeping them open too long. I extracted every frame, and the stupid negro helping me broke several in carrying them to the extractor, which caused additional delay. Then they had been behaving so well all the time that I really imposed on their good nature. Enough must have remained inside to attend to the brood, but they were sublimely indifferent to honey, which their neighbors were gathering at an almost unprecedented rate the while.

For pushing bees from the combs, I use a stalk of broom corn cut out of an old broom; if too soft or bushy they will cling to it as they do to feathers. I do not think anything could answer better. For those who have no regular smoker, I would recommend a common horn. A little practice will teach how tightly to roll the coal of fire in the cotton, and how strongly to "blow your horn." If you blow with too much "vim," you will send fire as well as smoke into the little citadel.

I have twice this fall witnessed a singular performance enacted by my bees. A little semi-circle of bees, with faces to the hive, and the ends of the arc resting against the entrance, would sway silently backward and forward, all in time and without one foot being moved from its place. After continuing this for a while, suddenly a little hum or buzz would be raised, wings would be fluttered, and this performance would be ended.

Woodville, Miss., Nov. 1875.

[Be so kind as to send particulars as to the habits of the stingless bee, their mode of living, nests, etc., etc. We have never seen or heard of any in this country before, and an article descriptive of their principal characteristics would be valued very highly. We would suppose your bees were fanning themselves when they conduct themselves as stated in your last paragraph. Was it not warm at the time? And was not that the reason your bees vacated their hives? We have known them to do so where the hives were not sufficiently ventilated, —in the middle of the day, of course —when the weather was warm.

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We shall strive to make every number of the BEE WORLD for 1876 worth the subscription price for the year. Can you not send us at least one subscription besides your own?

Moon's Bee World.

A. F. MOON & CO.,

Cor. Broad and Elm streets., Rome, Georgia.

NOVEMBER, 1875.

TABLE OF CONTENTS.

BEES IN FLORIDA.

We promised to give our readers a few scraps from the Land of Flowers. We arrived in the beautiful city of Jacksonville on the 7th inst. A tedious ride of several hundred miles made us more appreciative of the beauty which surrounded us on every hand, perhaps, for we certainly have appreciated the many strange sights that have met our eye. We visited the office of the Agriculturist, Mr. Codrington, finding him a most pleasant and agreeable gentleman, well calculated to fill the position he occupies. To our questions regarding bees he states that they thrive well, storing large quantities of the finest honey. All that was necessary to make this branch of industry a paying business was to give it proper care. Bees gather honey here nearly the year around.

We met a gentleman from Putnam county, who informed us that bees do well in that county, though but few are kept. There are plenty of wild bees in his section; has seen a bee with a white face. He affirms that they are a genuine bee, only differing from the common bee in that one respect.

One of the principal honey plants is a flower called vanilla; but there are countless thousands of flowers, which I cannot name, some of which are blooming always, yielding a rich harvest. The palmetto and cabbage palm afford, also, immense quantities of fine honey. The orange blossom yields the most delicious honey we ever tasted, and the time is not far distant when the state will be almost literally covered with orange groves, giving the bee-keeper an almost unexhaustable source of honey.

We met here Mr. Carlin of Shreveport, La., who is here for the purpose of locating an apiary somewhere in this state. He intends to make it a permanent business, and with his energy and knowledge of the business is going to succeed. You will probably hear from him when he gets located.

We conversed with a gentleman—Mr. Kendrick—who has spent several years in travelling over the state, and who gave us considerable information respecting bees and honey plants. His accounts of the yields obtained from a single colony are somewhat marvellous. Thinks Middle Florida will beat the world as a honey state, as flowers are fresh in bloom nearly the whole year, and that autumn flowers secrete more honey than the late.

We find here the black bee, very dark and small. Some contend that bees will not do well here on account of the ravages of the moth. This is the result of a want of proper knowledge of them. There is but little attention paid to them, but we find on

examination, that they are gathering enough to stimulate breeding, and the queens are laying quite freely.

As early as 1763 bees were imported from Florida to Cuba by emigrants from this state, and to-day the people are more than twenty five years behind the age.

I will leave this city (Jacksonville) soon for Quincy, from which place I hope to be able to send you a more extended description of the state.

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SEASONABLE HINTS.

Have you examined your bees to see if they have enough stores to last them through the winter? If not, attend to it at once. This can be done here in the South at almost any time, but in the North they will be closed for winter, and many of them will not see pleasant weather for many months, and a few never. Those colonies in the South will be able to send out foragers nearly every day, and they will be able to gather a little. But if they have not enough for safe wintering feed them at once. Make a good syrup of coffee sugar, take out a frame of empty comb, pour the syrup into the cells, and replace it. It may protect them from starvation, and a little time and money spent this way will save your bees, possibly, and you have the satisfaction of knowing that you have done your duty by them.

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In addition to the premiums offered at our State Fair in the bee and honey department, was one of a silver ice pitcher, offered by Mr. G. H. Miller of Augusta, Ga., for the finest display of honey. This splendid piece of silverware was presented to Mr. Moon. The display of silverware by Mr. Miller was exceedingly fine, attracting universal attention throughout the fair.

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LITERARY.

The last and most successfull of American story writers of to-day is the Rev. WM. M. BAKER, pastor of a Presbyterain Church in Boston, and they do say he gets more for a single serial than his whole year's salary as pastor. He has already written "The New Timothy" and "Mose Evans," and is now engaged upon a story entitled "A Good Year," the scenes of which are laid in "the most interesting city of the South," during a residence there. The story, we learn, is to be published in the Rev. Dr. TALMAGE'S paper, THE CHRISTIAN AT WORK.

WIDE AWAKE, the Boston juvenile magazine for November, comes like a wonder-box, packed full with delightful pictures und stories and poems. The number opens with a poem, "The Sad Story of a Little Girl," by Mrs. S. M. B. Piatt, the most eminent of our American female poets. The most noticeable paper is one by T. A. Cheney, "An Afternoon with an Indian Princess," embodying a visit with the Irequois Cheif, "Gov. Blacksnake," who was living at the time in one of the Indian Reservations in New York. It is full of interesting reminiscences, and finely illustrated. The serials, especially the "Cooking Club," are excellent, and eminently healthful in tone, which may be said of the entire magazine. We are glad to commend it to parents, and to add that it is only $2 00 per annum. D. LOTHTOP & Co., BOSTON.

The POULTRY ARGUS for November reaches us a littfe behind time, but improved in appearance and more interesting in contents. The opening article is from the pen of Dr. Fred W. Byers, of Lena, Illinois, on the Diseases of Poultry, and, like all his articles, is filled with valuable advice. Then follow articles from Hovey, Dr. Lott, Fraser, Sinsabaugh, Hummell Mills, Kinney the Brown Leghorn man, Lambing and others. In the editorial department we leran that the ARGUS has obsorbed another journal, this time, an Eastern one, *The American Fanciers' Gazette*, of Philadelphia. Sample copy, ten cents; one dollar per year. Miller & Clinton, Publishers, Polo, Illinois.