

modify the extra heat much more than with wooden or non-conducting walls. While it is true that bees do winter in unvitalized air, I am satisfied that in proportion as they use little air that that little needs to be as good as the best.

Perhaps it may be well to say that I have an extra or special bottom board to my hives, for winter only. It consists of a solid one-half inch board the size of the bottom of my hives, with a 2x2 inch square piece nailed to each end, on which the hive rests. This gives two inches of space, open front and rear, for the bees to drop their waste into, and separates them entirely from the hives above and below, and uses less room than a regular projecting bottom board. Space is of value in cellars.

My bees were so quiet and cool in the warm spring days that I had them taken out of the cellar at noon, rather than take the risk of storms. They flew at once. I used two days for putting them out.

If my extra flues help me as I expect they will, the bees can always be put out when I wish them to fly, and thus avoid night work and risk of adverse weather.

I wish to say here that I reduced my bees last fall from 180 colonies to 101. They were sorted out and united so as to be reasonably equal in numbers, with about 35 lbs. of honey per hive. My largest colonies dwindled the least, and used about the same amount of honey as did those having a few less bees. The net consumption of honey, in the almost five months of confinement, was about 20 lbs. per colony, on an average. They were all weighed and supplied with sealed honey in October, and reweighed again one day after taken out in April.

PLENTY OF BEES AND FOOD IS THE PRIME REQUISITE.

A great deal has been said about the amount of honey bees consume in winter, and my experiments demonstrate that a few bees in a hive, or a little honey, are neither of them reasonably sufficient in quantity to be relied upon for safe wintering, in doors or out. More bees on hand to meet the natural death rate, and honey to meet unusual conditions, constitute the most valuable means, combined with other best known methods, for the safe wintering of bees.

And it is well right here to remark that their safe wintering in our climate, whether North or South, hinges on these. Bees do not eat more honey in Michigan than in Tennessee or Missouri, and a small colony with a little honey is about as helpless in one State as in the other. The short period of confinement in the Southern States favors early breeding, but the same waste by natural death, and the same consumption of honey, takes place. It is absolutely necessary to have a large colony to die, and an ample supply of honey, in order to have enough of both left in the spring.

THE CELLAR IS NICE TO COOL DOWN OBSTREPROUS SWARMS IN SWARMING-TIME.

Now let me describe another use to which this cellar may be put in summer. In the top of each gable end I have a wire screen, three feet square, covered with tight fitting doors. The gable, or room above the cellar, is dark unless the screen doors are opened, or the entrance doors, one at each end are left open. I find this dark cool cellar a very handy thing when a lot of swarms cluster. It is a very easy matter to run in a hiveful of bees and take it to the cellar, and then another, until one at a time, a