

Unless bees are taken into the cellar very quietly, quite a hubbub is likely to be raised, the bees coming out of the hive and flying about the cellar, and as a general rule when a bee leaves its hive in the cellar it is soon a dead bee. So I take pains to have the bees carried in as quietly as possible, avoiding even heavy walking while carrying them.

A summer stand is put on the cellar bottom, on which a hive is placed, then another hive is placed on this, and so on till the pile is five high. Thus you see if you jar a hive it can disturb no other hive except such as are in the same pile.

At this point it may be asked what preparation was made for winter, and for putting in cellar. After the honey harvest was over, if enough honey was not in a hive it was furnished with stores perhaps in August or September, and no other preparation was needed. The covers were taken off each hive except the top one in each pile, and the cloth quilt glued on tight. No effort is made for upward ventilation but the entrance one-half inch high is left open full width of the hive. A small cylindrical anthracite coal stove stands in the cellar right among the hives, in which a low fire is kept running day and night most of the winter, the stove door standing wide open. The thermometer sometimes runs as low as 38° , and as high as 50° , but generally stands at 43° or 44° .

For one cellar there is a sub-ventilation pipe of common four-inch drain tile four feet deep and 100 feet long. For the other cellar 10-inch tile is used, five feet deep and 100 feet long, and this, I think, is not half long enough, although nothing would be gained, I think, by having a four-inch tile more than 100 feet long.

Every two or three weeks, the dead bees are scraped out of the hives by means of a piece of strap iron, if any are in easy reach, and the floor swept clean.

In the spring as soon as the soft maples are in bloom, the bees are taken out, provided the weather appears warm and settled enough. No pains are taken to put them on the stands they occupied the previous year, and I do not know that any harm ever occurred from their being placed on different stands.

PROF. A. J. COOK.

Bees are inhabitants of a sub tropical climate; they are very neat; unless they can fly frequently they must be very quiet or trouble will ensue.

We must then, in our own severe climate, reduce the friction or irritation to the minimum, would we win success, else we will see our bees

destroyed in their digestive economy and greatly reduced in strength, if they do not die outright.

North of the Ohio river our bees are kept in such an artificial condition that it becomes absolutely necessary to guard against functional disturbance. To accomplish this we must be sure that our bees have plenty of good honey or sugar syrup for winter stores. It is of the first importance that bees have at least 25 lbs. of good food. I would wish this stored in the hives as early as the last of September.

Again, I would wish the temperature about the bees to remain quite uniform, not to vary much from 45° F. I do not object to a minimum of 38° F., or a maximum of 48° F. To allow this I prefer a good cellar, which by means of underground ventilation, water, or carefully arranged fire and ice as the case may be, may be always controlled as to temperature.

Chaff hives I find expensive, awkward and not reliable. Packing several hives together is better, but I fear in our severest winters would not answer. After an experience of nearly twenty years, trying all methods, I much prefer the cellar for our northern climate. I know it is safe; I cannot say as much for anything else.

FALL PREPARATION.

After the first frost, I see that five Langstroth or eight Gallup frames have enough stores for winter. These are placed where they are to remain; at one end of hive, if Gallup; in middle, if Langstroth. All others, not containing brood, are removed, and those containing brood are removed in October when brood is all developed. At this time I put in a division board and cover warmly above the bees by chaff cushions. Just at dawn of cold weather bees are carried to cellar, so carefully as not to disturb them. This is about the middle of November. In the cellar the entrances are left wide open. I leave them in cellar till well into April. *It never pays to remove bees from cellar permanently until they can work.*

In spring I close on to few frames—just what the bees will cover, and pack well above the cluster. This fortifies against spring dwindling, which is rarely an evil if bees winter well. If the cellar is right pollen does little if any harm. Unless the temperature can be controlled I prefer to have pollen absent. This is not the result of mere theory but of real experiment.

After a long, successful experience I am sure that the above plan, faithfully executed, means success every time. So sure am I of this that I put my bees each fall into the cellar with no anxiety. For years now this confidence has not been in vain.