

space for the queen to lay her eggs. Although so much moisture was in close proximity to the colonies, a great deal of the success of this experiment is no doubt due to the good cellar in which it was tried, the cellar having stone walls, cement floors good ventilation and the temperature being easily regulated. This goes to show that good ventilation and even temperature have a great deal to do with successful wintering. An excellent plan for ventilating is to have sliding ventilators in the doors, so that much or little air may be let in as desired. Also connect an extra stove pipe provided with a damper to the regular heating stove. This may be done by means of a T or an extra flue will answer. Allow the pipe to extend into the cellar. This plan of ventilating has proved very successful.

Cellar Wintering.

Description of Cellar and Arrangement of Hives.

The cellar is below a private house. The walls are of stone and the floor of cement. The bee room 11 feet, 6 inches wide, by 15 feet long, and 7 feet high. Allow three tiers of shelves and two passages. It is boarded off from the remainder of the cellar by a partition which extends all around the chamber and far enough from the stone wall to allow of an air space. Should a person have enough bees to fill the cellar the boarding could be left out. Under the cement floor a layer of one foot of stones varying in size acts as a drain and keeps the cellar perfectly dry. The lowest shelf is 18 in. from the floor, the second 20 in. in the clear above, and the third 20 in. above that. Neither the hives in the third or uppermost shelf, nor the uprights supporting the shelves touch the ceiling so that no vibration can reach the hives above. This chamber is thoroughly ventilated, as is also the whole cellar. Before entering the bee room

is a small compartment with a door leading outside and another leading to the bee room. Both rooms have sliding ventilators in the doors so that outside air may be let in at will. Ventilation is carefully attended to and sudden changes of temperature are avoided. For this a thermometer, which is always kept in the cellar, is watched. The best temperature for the bee cellar has been found to be from 42 to 48 degrees Fahrenheit. This arrangement has given entire satisfaction. In former years there was not proper ventilation and the cellar was always damp. Since the concrete floor has been laid and the ventilators put in, the cellar has been much dryer and cleaner. It is also rat and mouse-proof, which is a very great advantage.

Experiment No. 1.

Six colonies were put into winter quarters in the cellar and placed on the shelves. Under the back end of each hive was placed a 2 in. block, each hive was besides raised from its own bottom board by a 1-inch block being placed at the back so as to insure free ventilation. All front entrances were left wide open, the wooden covers were all removed and replaced with cushions made of chaff $\frac{1}{2}$ in. thick, sufficiently wide and long to lie over the hive two inches. Temperatures were taken once each week all through the winter and were kept very even, from 44 to 48 degrees. The bees were quiet, only a very slight hum being noticeable up to February, when the temperature having risen to 48, the bees began to get uneasy and made considerable hum. Cold air was carefully let in during the night by opening the slides in the doors and closing them in the morning; this, of course lowered the temperature and the bees quieted down. During the past winter every colony in this experiment was perfectly dry and clean, and all came out in excellent condition. Average weight of