and capped before winter's cold prevents further labor in the hive. Bees should never go into winter quarters with less than fifty pounds of food, which will always suffice from September till the harvest of the following summer.

Important Suggestion.

It is well to have all colonies reasonably strong in autumn, and soon after the first hard frost give each colony as few combs as possible and secure the requisite amount of honey. I prefer to use about six Gallup or Langstroth frames, and, by use of division boards, crowd the bees; then I cover warmly with sacks of fine, dry sawdust, made of burlap. This costs but little, and aids greatly to preserve the vital strength of the bees during the cold days of October and November and early the next season.

Uniform Temperature.

This is best and most cheaply secured by use of a good, dry (?), dark cellar. As a cellar is entirely or nearly all beneath the surface of the earth, it remains unaffected by the severest cold of winter or the more genial warmth of spring. The great requisite is that the temperature shall never go below 38 ° F., even during the most severe weather of our most rigorous winters, nor above 47 ° F. A good under-ground cellar will secure the former, but when many bees are put into our cellars it is not always so easy to secure against too great heat. There are two ways to accomplish this: First, by use of water in the cellar, and second, by means of under-ground or sub-earth ventilation. When a running stream from springs can be secured, it forms the most desirable moderating agency I know of. Such water is just about the proper temperature, and while it modifies against heat or cold, it also serves beautifully to dissolve impurities and sweeten the atmosphere. In lieu of such a spring or running water (underground tile are constantly carrying water into and out of our college bee-cellar) a good cistern answers well. The water in this is regulated by the usual temperature of the cellar, which is about that of the earth, and so in times of extreme cold or too great warmth protects the cellar against change. I know of such a bee cellar that passed the coldest weather of last winter with an east window constantly open, and yet the temperature was maintained at the desired point. Such an amount of latent heat stored up in a cellar cistern is a great safeguard, and is especially valuable when a great number of bees are placed in a cellar. Each colony generates some heat, and with a multitude, the heat, especially during a protracted warm spell in winter or spring, is apt to become ruinously excessive. Sub-earth ventilation secures this moderating agency in air which comes to the cellar, cooled or heated by a long transit through an earth pipe, which runs many yards through the earth, beneath the influence of the outside temperature. To secure the necessary exchange of air and certain influx of the tempering atmosphere, a small-sized stove-pipe, preferably, of the kitchen stove above. This small pipe has its lower end open, while above it connects with the kitchen stove-pipe some distance above the stove, else the stove will not draw well, and will trouble from smoking. A second pipe of four or six inch tile also passes from the bottom of the cellar through the wall and thence beneath the frost line for one or two hundred feet through the earth, when it should come to the surface and the end be protected against vermin by use of a wire screen. We can easily see that whenever the kitchen stove is used—daily—the air is drawn from the cellar and the out-door air warmed in winter and cooled in spring and summer is drawn through the tempering soil into the cellar. I have known of this arrangement being tried in many cases, and always with the best results. If it is feared that water may enter the cellar through the sub-earth pipe the joints may be sealed by use of cement, or arrangements made to drain at the lowest point. This arrangement not only protects against extremes of temperature, but it serves to keep the cellar sweet. Mr. D. A. Jones, of Canada, builds above ground, when it becomes necessary to have his building double walled, with a 30-inch space filled in with sawdust, not only on the sides but above as well. Others dig a pit in a side hill. These methods are only inferior to a cellar in that they are more difficult to regulate. Mr. Jones not only has the sub-earth arrangement but he is forced to provide ice boxes in the warm days of spring in order to protect against too great warmth. In all these cases good, close double doors should be made, and the room should surely be mouse tight.

Packing.

Many bee-keepers have succeeded well by packing. Southard and Ranney, of Kalamazoo, have practised packing of single hives with marked success. They place a box about the hives six inches distant on each side. This space they pack very closely with straw. They also put a chaff sack in the upper chamber of the hive, are sure to have the covers on the hive close fitting, and then pack well above with straw, when they add a cover to keep the straw dry.

These gentlemen attribute their success to careful, thorough packing, and close covers above