

In order to winter successfully three conditions are at least necessary: A strong colony, with a good queen, an abundance of wholesome food, conveniently situated, and a properly shaped hive, well protected. Early swarms are usually strong, and have plenty of good stores in the best possible condition if the hive is of the right shape; but they occasionally contain old queens which play out in winter.

Second swarms contain young queens, but generally lack stores and bees. Old colonies sometimes almost swarm themselves to death, and sometimes they carry most of the honey into the super; then, if fed, they don't place the food in the most accessible position for winter, neither do they ripen and seal it as well. Those drawbacks, however, probably come under another head. So to winter successfully, we will presume that the colonies are strong, and on as many frames as they cover nicely with sealed stores of from one to two-thirds of their depth. For a strong colony the best shaped frame would be about one foot square and eight of them in a line, so as to allow the bees to cluster in the shape of a sphere as nearly as possible.

Twenty pounds of honey is usually sufficient, but twenty-five or thirty is safer, and if not consumed is a good backing in the spring to encourage breeding if the winter is long and the spring late and cold.

Have two or three combs at the sides of the hive sealed to the bottom, and if you leave any buckwheat honey in the hive let it be those heavy side combs. Then in looking over the hives, say, about first of April, you have only to refer to those side combs to discover whether or not your colony is provided for spring breeding.

In wintering out-doors have at least six inches of dry sawdust on all sides (unless the hives touch each other), and on top a sawdust cushion six inches thick—more laid loose on top of cushion won't hurt; but don't put a board on your bee quilt (I should think three inches of sawdust as good as a foot of chaff or leaves, and mice don't work in it.)

Every time it snows bank up the hive to the middle, or to the top, for that matter, but don't pack the snow above the fly hole with your feet if the snow is soft. Our cold snaps usually follow a fall of snow. Have your outside entrance about one quarter inch wide by two inches deep, and made of tin if mice are plenty in your yard, and see that these entrances don't get clogged with dead bees in March or April.

In cellar wintering, place them not less than two feet from the ground; and if there is much tramping overhead, the upright sticks which hold the shelves should not be nailed to the joist,

but pass up through holes in boards nailed across the joist, and padded with cloth. If the hives are placed three deep leave six feet of space between the rows; if four deep, eight feet, etc., as in warm winters cellars often prove too small for good ventilation. Keep your cellar dark. It should have a drain and a draught pipe up the chimney to be opened during warm spells, or when the cellar gets above forty-five degrees. If the temperature goes below forty, have some way of heating it up. If the chimney is high, a pipe from the stove through the floor of the cellar and along the bottom to the farther side and then up the chimney would probably be the most convenient.

Have the combs two or three inches above the bottom board to afford room for dead bees, but don't go down to scrape them out more than once or twice during the winter, as the disturbance seems to injure them. If mice abound, have the sticks on which the shelves rest boarded around so that they cannot get up, and keep several traps and a cat or two and some poison also for them, poor things! Have a thermometer hung up through a two inch hole in the floor in some convenient place. For frost proof rooms and bee houses above ground, about the same conditions will apply. Be careful in putting the bees in—not to jar or dump them. If bees must be moved, let it be at the close of the sleighing season rather than the beginning, as bees are breeding then, and a little activity don't hurt them so much.

When one or two heavy combs are placed in for feed, access should be made to them by punching holes through the centre of the adjacent combs.

When a division board is needed, a comb well built out with two sticks to fill out answers very well, leaving frames with starters to fill out the hive.

Don't place the hive in an apartment where water freezes, such as the loft of a wood shed, or hay mow, with perhaps a few old duds and a quantity of chaff about it.

And especially, don't place the hive over the cook stove in the kitchen loft, where the temperature varies from zero to seventy or eighty above it, or in a barn cellar where cattle or turnips are kept, or in a cellar that moulds badly.

Don't stop the bees in even if a few hundred do fly out and perish on the snow.

R. F. WHITESIDE.

Little Britain, Ont., Sept. 1892.