

the bees and beneath the packing. The packing extends close down to the earth. A tunnel at the entrance permits the bees to fly if suitable weather entices them out. Others, like Mr. Bingham, of Allegan county, are very successful in the use of packing, but put six or eight hives close side by side and pack snugly about all. In this case the entrances all face out, and a tunnel at each hive permits flight. So many who pack lose their bees that I can but think the latter method named above is preferable for the average bee-keeper if either is to be practiced.

Many others use chaff hives and some with success. Such hives are expensive, cumbrous, and in view of the extensive losses by those using them I question their desirability. From the great saving of food consumed by the bees, and the comparative freedom from danger, I feel that cellar wintering is far preferable in this climate to all other methods. This conclusion is formed only after many years' careful experiment. Other methods may succeed; this with proper pains surely will.

Ventilation.

If the cellar is all right—surely so—the entrance to the hive may be left wide open in the cellar. If it become too cold less ventilation is imperative, if too hot, more may be required. But we must be sure to keep the temperature right. I feel positive that with the proper temperature we need not fear the presence of pollen or bee-bread in the hive. If the cellar become too cold or too hot, in either case the bees become disturbed, and then I feel certain after many experiments that the bees are safer with no pollen. Yet such a disturbed condition is always dangerous. The fact is we *must be able to control and must control the temperature.*

The Cover.

As already stated the cover should be a non-conductor of heat. Cloth with a filling of fine chaff or fine dry sawdust serves well. In winter I prefer to have a factory cloth over the bees and a burlaps sack full of dry saw-dust still above the cloth.

METHOD OF PROCEDURE.

As soon as we have a frost to stop storing I place six or eight frames where they are desired for winter. These should be nearly full of honey. Place a short stick above the frames at the center so the cloth can not fit close to the frames. This permits the bees to pass over. As soon as the brood is all hatched remove all other frames and pack well above and beside the bees. If we are to pack out doors do it now. From the 1st to the 20th of November, before the severe

weather, place the bees in the cellar, open the entrances, and remove the covers, but do not remove the cloth or burlaps sack. If the cellar is as described the bees will remain very quiet and free from diarrhoea. If they are in a poor cellar, and so become diarrhetic, it is best to remove them from the cellar for a few hours some warm day when they can fly out for a cleansing flight, and then return them to the cellar. It is always best when taking colonies from the cellar to place them on the same stands from which they were removed when carried to the cellar. We should not remove the bees finally from the cellar till they can go to work in the spring. In Central Michigan this is not before the 10th or 15th of April. In the spring when the bees are placed on the stands, I would clean all of the hives out thoroughly—this should be on a warm quiet day—and would remove frames of comb and move up the division board so that all the frames left will be covered with bees. We should also cover above and protect at the sides with ample packing. I have found that bees in single walled hives thus protected do as well in spring as those in chaff hives. As the bees increase more frames should be added, and so soon as the bees can protect the brood, the weaker may be strengthened by receiving capped brood from the stronger, but never so rapidly as to endanger the brood from chilling. Such has been our practice here at the College, and we have not been troubled by loss from "spring dwindling." I feel very sanguine that if the above suggestions are heeded winter losses will cease to vex our northern bee-keepers.

A. J. Cook.

Lansing, Mich.

From Prairie Farmer.

A COLONY OF DRONES.—AUTUMN PREPARATIONS.

ⓘ AM working in the apiary every pleasant day, preparing the bees for winter. Yesterday I found a curious colony—not so very small, but composed almost entirely of drones. There were perhaps fifty workers; their companions had worked themselves to death in rearing this useless horde, these shiny gentlemen of leisure. These drones were no doubt as good fathers as any, though they had been cradled in worker cells. The eggs of a queen that has never been fertilised hatch the same as others, yet the progeny will be all drones, though she deposits them in worker cells. The eggs of laying workers (im-