vapor, succumb at the very advent of extreme chilliness.

There is no objection to the side packing being done early in the fall, but there must be ample provision for the upward escape of moisture. This has been best secured, in my experience, by the use of thin wool-lined quilts. These pass off the moisture without creating a draught. Above the quilt there should be plenty of cover space, and at the very top of the hive, an air-current right across, that the moisture may be dried off as it ascends, and perches, as it will in tiny drops, on the top-side of the quilt.

Weak stocks, as well as strong ones, go through this sweating process, and if winter settles down upon them with dampness in the hive, their death warrant is, "signed, sealed, and delivered." I think I can winter any stock large enough to form a heat-producing cluster, if I can secure perfect dryness in the hive after the bees get through their sweat, on the condition, of course, that it has plenty of stores.

I believe that the sweating stage of which I have spoken, is the final preparation for hibernating, and that if the first cold snap finds the bees with a perfectly dry hive, it has the effect of throwing them into a drowse or semi-torpor. They cluster close together, and a certain amount of heat is generated and given off by the mass of bees. It is then time to put on plenty of some dry porous material that will retain the heat and be a reservoir of it during the rest of the severe weather. If there is enough of this to keep them comfortable, the winter will pass in a succession of "naps," varied by an occasional awakening for the purpose of taking food, of which, however, very little will be consumed.

Just to that extent, or in that degree in which the winter drowse or torpor is comfortable, so that the bees remain quiet, contented, and tightly clustered during the greater part of the time, will they winter well. Colonies differ so much in strength and other particulars, that no rule can be laid down applicable to them all. Much depends on the judgment of the bee-keeper, and on the accuracy of his knowledge of the state his bees are in at the setting in of winter. The most careful and judicious management will sometimes fail. So far as I have made rules for myself in regard to this matter, they may be briefly summed up as follows:—

1. See that every stock has plenty of stores at the close of the honey-gathering season, and let the bees take their own way of sealing, propolizing, and otherwise preparing for winter.

(2) Give the bees a good letting-alone during the early fall.

(3) When cool weather commences, and the first frosts come, narrow entrances, put on wool-lined quilts, and perhaps do the side-packing with chaff or very dry sawdust.

(4) The first zero snap, put on from 6 to 12 inches of packing, above the wool-lined quilts.

(5) If possible, have an arrangement whereby dead bees can fall out of the hive, instead of accumulating on the bottom-board.

G. M. DOOLITTLE.

I prefer to winter about one-half of my bees in a good bee cellar, the temperature of which should remain as nearly at 45° as possible, and the other one-half on summer stands packed with chaff at sides and a cushion of fine bass-wood sawdust on top. This cushion I find better when about three inches thick than of any greater or less thickness. If beside the above a rim one and one-half inches thick be placed beneath the hive on the approach of cold weather so as to raise it a little from the bottom-board, I consider the bees fixed in the best condition possible. I also use such a rim for each hive in the cellar. The object of wintering a part in each of these two ways is that when a great loss occurs out-doors I come out good with them in the cellar and *vice versa*. In other words it is not a good plan to have all of your eggs in one basket.

DR. C. C. MILLER.

My experience for several years past has been confined exclusively to wintering in the cellar, and I have not yet learned all about it. I find that wintering a few colonies in a cellar is one thing and having the cellar packed full, quite another. So I attach much importance to the ventilation of the cellar, if many colonies are to be in it, and very little if it is to contain but few. My cellar is about seven feet deep, giving plenty of room to pile up the hives five high. As seasons differ so much, no precise date can be given for the best time to take bees in cellar, but I have never had occasion to regret taking them in too early, nor out too late. If I could plan weather just to suit me, I think I would want a bright day, warm enough for bees to have a good fly, somewhere in the first two weeks of November, to be followed by a clear and cold morning the next day. Then on the morning of the next day I would commence taking in the bees, having taken pains for a day or so previous, to see that the cellar was thoroughly aired, windows and doors being left open, so as to have the cellar, as nearly as possible, of the same temperature as the outer air.