completely saturate the hive air and condense the vapor.

Though for want of observations we have been obliged to take assumed values for temperatures within the hives, the relative humidity values are well within the truth. The writer repeatedly saw water and ice inside of a hive in his cellar last winter, and the comb and frames came out mouldy in the spring

Meanwhile what would be the condition of a colony wintering outdoors? We saw that the average January temperature for Boston is 27 degrees and the relative humidity 73 per cent. The temperature would have to fall nearly to 23 degrees before the outdoor air would be so damp as that we have assumed for the cellar: viz., 90 per cen. saturated. The superior dryness of this outside air, assisted by better ventilation of the hive would reduce the humidity within the hive to say 80 per cent. as against 95 per cent. that of the cellar hive. The temperature inside the outdoor hive would probably be a little lower on the average than that of the hive in the cellar. Assume it to be at 55 degrees or even 50 degrees. At 50 degrees the temperature would have to fall below 44 degrees to make the air within the hive as damp as that in the cellar hive at 59 degrees.

It matters not how much these assumed values for the hive interior may be in error. It is the relative values only between the hive in the cellar and the outdoor hive that concerns us here; and these assumed absolute values serve to illustrate what large differences of moisture there is likely to be any time between hives indoors and those outside; and also to show how much more the moisture in the hives is increased by the same temperature fall in the one case than in the other.

The outdoor hive has the further advantage that it can dry out on warm and dry days.

To sum up: a fall of temperature to the freezing point leaves the outdoor bees much more comfortable and better able to maintain their normal temperature than those in the cellar because (1) the air in the outdoor hives is much drier, and (2) because the bees outside have occasional opportunities for evacuating the waste arising from any excess of food they may have to consume during the cold spells.

It does not follow, however, that bees may not be more comfortable in cellars than out of doors. By suitable ventilation many cellars can be made sufficiently dry, though this may require artificial heating.

The humidity of the air can be readily measured by any one with an inexpensive instrument called a sling psychrometer. It consists of two thermometers mounted side by side on a single frame, with a cord or handle at one end of the frame, so that the instrument can be rotated or slung round and round in the air. The bulb of one of the thermometers is covered with a piece of muslin. When dry both thermometers read alike, but if the muslin be wetted the swinging of the instruments hastens the evaporation of the water on the muslin, and thereby cools the wet bulb, making that thermometer read lower than the other. From the difference of the readings of the two thermometers the percentage of saturation (relative humidity); the temperature at which saturation would occur if the temperature should fall (the dew point), and the number of grains of water vapor in a cubic foot of air (absolute humidity) can readily be obtained by any one, from tables constructed for this purpose.

[Frank W. Proctor, Fairhaven, Mass., in The American Bee-Keeper.]