exact degree of temperature most conducive to quiescence in winter quarters and hence best for the fore part of the winter, as there is also a difference as to the best degree for judicious early breeding. There is one thing about this matter, however, which is certain enough, and it is this : The temperature in bee cellar ought never to be allowed to get below 40°. Keep it if possible somewhere between 42° and 50° towards the top. At the bottom it will be a little lower.

The amount of ventilation required in winter repositories depends principally upon the number of colonies confined, and more is required in the after than the fore part of the winter. In a perfect state of quietude, secured by right conditions, they consume but little food and consequently breathe but little and hence need but little air. But as they arouse to renewed life towards spring and begin to increase their food, breathing and general activity they require more air—pure air—and must have it or suffer. Do not turn sudden drafts of air upon them to excite them. If you have no sub-earth pipe for the constant ingress of fresh air, introduce it from without quietly at night or as best you can. Do not disturb the bees in winter quarters any more than necessary or possible. Of course the dead bees must be removed from the cellar floor occasionally or else the most thorough measures of disinfecting and deodorizing the air taken. Charcoal scattered freely over the floor will absorb and neutralise all the poisonous emanations from decomposing bees.

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Partly from necessity, and partly from choice, I winter my bees on the summer stands. I have no suitable cellar for the purpose, and if I had, the fact that I am often absent just at the nick of time when they should be put into or taken out of the cellar, makes this mode of management impracticable for me. Besides, I do not care for the job of lifting the hives backward and forward. I have seldom done it without an attack of lumbago. Moreover, I have espoused the theory that bee-keeping for the million must be on the plan of out-door wintering, and as my dabblings in the business are more out of scientific interest than with an eye to bread-winning, I am determined to keep on experimenting with out-door wintering, until I either make it a success, or am compelled to give it up as a failure.

I may as well confess at the outset that I have not yet fully mastered the winter problem in bee management. I have never got through a single winter without some and often serious loss. My idea of the matter is that mastery of this problem should enable us not only to secure the survival of our bees, but their emergence out of the cold season "in good order and condition." To have them come through the winter "by the skin of their teeth," just escaping extinction, and requiring all the following summer to recuperate and become a decently strong colony, does not satisfy me. I do not call that successful wintering.

I am satisfied that my most serious difficulties are local. The climate of Guelph is a rigorous one. The hardiest out-door grapes cannot be depended on to ripen here every time. Lima beans cannot be grown, except in a greenhouse. The Chinese Wistaria will not bloom once in five years. I quit growing pears, finding that in the open, the trunk splits, the bark cracks, and the tree dies from exposure. A Flemish Beauty, screened from the cold by a shed and a wall of Norway Spruces, bears magnificent crops every year, suggesting that with *extra protection*, fine pears may be raised here. Bees too, I feel sure, must have *extra protection*, in such a climate as this. The management that will succeed at Hamilton, only thirty miles distant, will fail here. Why? Because Hamilton is under the lee of "the mountain," as it is termed, and Guelph is atop of it Hamilton is nearly at the level of Lake Ontario, and Guelph is 900 feet higher. It is not so much the steady cold, as the searching power of the terrific winter wind that plays the mischief with the fall wheat, the fruit, and the bees.

If the *extra protection* required by bees is given early in the fall, it will be fatal to the existence of strong colonies. There is, what may be called a "sweating stage," which occurs just before winter sets in. Whether the bees are like athletes, who sweat out their surplus fat in view of a supreme ordeal, or whatever be the cause, there is a vast quantity of moisture given off by a strong stock of bees as a final preparation for wintering. If that moisture does not get away, farewell to all hope of wintering your bees. Retained in the hive, it will create dampness, blue mould, and a fatal chilliness when a sudden drop of the thermometer occurs, as it usually does here before or about Christmas. I have repeatedly found very strong colonies dead in spring, with lots of honey in the hive; bees, combs and hive walls all covered with blue mould; the signs indicating that excess of moisture proved fatal just at the setting in of winter. Packed snugly for the severest weather, the excessive moisture cannot escape, and the bees, enveloped in and saturated with cold