

can come from the increased ventilation other than the increased lowering of temperature.

On one point I'm afraid we will have to agree to disagree, for I can hardly believe in such a grievous mistake to have only one opening for the ingress and egress of air, providing that opening be large enough. If the whole bottom of the hive should be open that would be only one opening, and I hardly think it would be any improvement to add other openings. The opening to my hives is 24 square inches. Of course there's diffusion, and so is there diffusion if the whole bottom is gone. After all, what harm is there in diffusion? Isn't all ventilation by diffusion or currents, and isn't diffusion better than currents? Providing, of course, there be diffusion enough. Suppose there be currents enough and diffusion enough, so that all the air in a hive shall be displaced in the same time by one as by the other, which is better? In each case the air has been displaced with pure air, only that in one case a current blows the bees.

I wish you had told us what advantage you think it is to have floors to hives in winter in the cellar. I supposed it was a little disadvantage in the way of ventilation, although not enough to be serious, but much over balanced by the advantage of having the floors left ready for spring, and having mice shut out. I am curious to know whether you find other advantages.

You may be all right about the matter of dampness. Although little is said about it in this country, much is said in Europe about the thirst of bees in winter. I've tried sometimes offering sponges of water to them at the entrance of the hives, but never got them to take it. The sub-ventilator may bring all the moisture needed, still the air seems quite dry enough for the cellar bottom to be dusty at times.

However else we may differ, I think we agree upon the importance of good air for bees. And I think we agree on the importance of having the cellar well ventilated. It seems to me that a good many attach the most importance to the least important part of ventilation. They take great pains to find out just how to put the hives in the best shape to have the right amount of upper ventilation, or of lower ventilation, or of absorbants, while all the time it may be the air of the cellar is unfit to be breathed. If they would only stop to think, they might see that no matter how the hive may be arranged, there can be no pure air got into the hives if there is no pure air in the cellar. On the other hand, if pure air surrounds the hives constantly on all sides, no

matter how the hives are arranged, the bees are pretty likely to get a fair share of that air.

With kindest wishes to yourself and all the C. B. J. family. C. C. MILLAR.
Marengo Ills., Feb. 8th, 1894.

Wintering Again.

MARENGO, ILL., Dec. 28, 1893.

FRIEND HOLTERMANN,

Here's a letter of interest, and you may want to make some use of it for C. B. J. While I feel averse to taking any extra trouble, it may be that it would be better for me to do something in the way of covering in cellar for winter.

I suspect, however, that if some of my Canadian friends were to come to Marengo and winter exactly as they have been doing, that they would not achieve the success they have in the past. In other words, the climate here may be more severe than 200 miles farther north. A steady hard wind, with no let up for 24 hours or longer, is, I suspect, a good deal harder on a colony of bees than a still atmosphere ten or twenty degrees lower.

With best wishes, I am,

Yours truly

C. C. MILLAR.

LINDSAY, Dec., 23 1893.

Dr. C. C. MILLAR,

DEAR SIR:—I was surprised when I read the last clause of your letter in the C. B. J. for December. Just to think that such an able bee-keeper, should fold his hands and practically say, I cannot winter bees outside.

I used to have a good deal of trouble with outside wintering, but of late years I dropped on a plan practiced by a Mr. French of Oshawa, which has proved a success, it is good for outside or cellar wintering. I will try and describe it to you.

I use a Quinby hive with hanging frame it is practically the same as a Langstroth only that the frame is 1½ inches deeper with bottom board fast. Now right in the front of the centre of the hive, I bore a one inch hole, this is left open all winter, whether outside or in the cellar. Those that are left out have a packing case made to allow four inches of packing around sides and ends and the same under the hive, but on the top I put a surplus case about nine inches deep and the full size of the hive; in this case I put a chaff cushion from six to eight inches thick, then put a water tight roof on. Plainer shavings, make a fine packing but don't put your flat covers.