

years. It is 24x7, and 7 feet deep, and I winter from 60 to 85 colonies in it each winter with good success. The walls are of stone mason work, 16 inches thick, and the top covered with 4-inch-thick flag-stone, with 3 feet of dry earth over this. But the joints between the flag-stones are so open that a little dirt sometimes sifts through. Then, of course, a little air gets in through the four doors used for the entrance. I suppose you will have an entrance also with doors. If so, the only question would be whether your double floor, packed with sawdust, will give less ventilation than my flag-stones. I confess to not being able to answer that question satisfactorily in my own mind, as dry dirt is quite porous, and the cracks between the flag-stones are large enough to stick your finger through in some places.

On one still, damp, misty time, holding on a week, I went into my cellar, and the air was so impure that the candle would not burn; and, when nicely burning between the entrance doors, it would fade away and soon go out on going into the cellar. It seemed a little hard for me to breathe, but the bees came out all right. This was the only time but that the air had seemed pure. At the time the candle would not burn there was four feet of wet snow all over the whole ground, roof and all. Just what advice to give you I hardly know; but if your cellar were mine I think I would risk it without a ventilator; but I do not feel like advising you to do so. Perhaps my experience as given above may help you a little in deciding what to do. I know nothing personally of clamps.

G. M. DOOLITTLE,

Borodino, N.Y.

On receiving this I sent copies of it to Dr. Miller and Mr. Bingham.

Concerning this matter, Dr. Miller writes:

Dear Ernest:—I've studied over the problem as to your cellar quite a little, but without feeling competent to advise. With the right kind of soil and covering I think there would be no need of special attention to ventilation. But if conditions were not all just right the results might be disastrous. Perhaps the safe thing to do would be to have the shaft put in and closed up just as if no shaft were there. If all went well it could be left thus all winter, and you would practically have no shaft. But if an inspection every two or three weeks would show that the danger line was reached, then you could open up the ventilator. The point is that, with the ventilator you can do either way, and without it you are helpless if it should be needed. The temperature and the number of colonies have something to do in the case.

C. C. MILLER

Marengo, Ill.

Following is the letter from Mr. Bingham:

Mr. Root:—Your esteemed letter is at hand, also Doolittle's. The door on the level of the floor of the cellar, and the difference shown by his candle, would demonstrate that the carbonic laden air found a place where it could be mixed with pure air at the door. My experiments with a three-inch tin conductor pipe opening into the room over the cellar demonstrated that, under such conditions, it would not be safe to enter such a cellar or any other place where a lamp would go out. I doubt there was no danger one would be able to see his bees now and then.

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