

to reckon up the number of times the bees have had to warm up their bedroom.

And to put it in another way, in a case which must frequently occur, where the nights are cold. If only rough calculations are sufficiently to be relied on, during one long winter's frosty night of fourteen hours, even where the entrance is the minimum of half an inch, and the wind only at the same very moderate rate, the outside bees of a cluster would practically be in freezing temperature the whole time, as the air would be changed some eight hundred times. Fortunately, naturally or artificially the wind seldom gets such a fair chance of doing its work; yet the possibility and occasional certainty of such an event should claim more attention than we think it does; and some breakwind or excluder should be arranged for the protection of the bees, which must certainly suffer more than is generally thought.

Nor are matters much improved if the wind blows 30° to 40° right or left of the line at right angles to the front of the hive, as the sides of the triangular rebate direct the greater portion inwards; and when the wind is 90° right or left, that is full against the sides of the hive, even then the inside is seriously affected by the vacuum caused by the wind passing across, the cold air in this case being drawn down through the mats above.

Bees in their natural state cluster in cold weather behind many intersecting, crossing and irregularly arranged combs, all of which tend to keep the air on cold windy nights fairly still, and prevent the sudden draught of chilly air from playing on them. The writer had recently an opportunity of opening a large old box hive with a strong swarm in it. The massive interlacing combs made him quite ashamed of having driven the bees out into a scientific Langstroth, after their clever and laborious preparation for the wintry winds. For with all its many advantages it cannot be denied that the very place which should be warmest in the Langstroth is the very place which is coldest. The wind, if it enters at all, is driven as through the nozzle of a fire-engine-mouthpiece right up the central combs, and this to (in continuous bad weather from an unfavorable quarter) for several days.

Should any one be disposed to think that this necessary result of the wind on the interior of a hive is far too overdrawn owing to the absence of any exit for the enclosed air, let him prepare an empty hive, or if he will, a tenanted hive, and closing one ventilating hole and the edges of the cover and bottom board with some pasted paper place a candle at the other. Then let him observe the effect on the candle of a pair of bellows

playing on the entrance. It is extraordinary how hard it is to keep wind in or out. And if the wind does not drive the internal air out through the mats, it will find a partial exit by the bottom board, and even by the entrance itself; for air in motion gets the same sort of power over air at rest, as water in the case of the common rain, and steam in injectors.

But enough for our purpose now, if any of our readers hasten to narrow their entrances to half an inch at least; for the larger figures in the table are too appalling to be alluded to, and carry their own lesson; and still better if they invent some temporary breakwind, so that their stocks may have a serious drawback to their welfare removed in however primitive a way during the present winter.

Matata, June 15th, 1887.

From The British Bee Journal.

Raising Queens.

I SHOULD be glad if you would publish the following in your next issue if possible. In your issue of July 14th, page 297, 'Amateur Expert' gives instructions for raising young queens to replace old worn-out ones; and strange to say,—it seemed almost as though I had been communicating with him on the subject,—as at the time I received the *Journal* containing his instructions I was considering which would be the best way to obtain three young queens, as I was of opinion that my present queens were not so prolific as they might be. I read the instructions very carefully and determined to at once adopt his plan. I went straight to my apiary and selected my best queen, and placed her, under Simmins's direct introduction, in a hive that had an old queen—which I destroyed—and she was at once accepted. I then followed the advice given, with this exception, that instead of placing the hives apart from the rest I placed them between my other stocks; they were, therefore, only two feet apart, as I was pushed for room; the results further on will show that amateurs with small gardens need not despair.

On looking into the hive, which I had deprived of its queen, I found that I had twenty-two royal cells formed, distributed on four frames, and thirteen of them had occupants; so I decided to raise four queens, and divided the frames accordingly, adding one or two frames of hatching brood from other hives; I then covered up the frames and left them. But now comes a blow to my adventure. In your issue of July 21st, is a letter from 'W. B. Webster,' where according to his account, I had done wrong; however, it was too late to alter, and I must rest and wait