any. I hive my swarms on combs if I can get them at all, and there is the place where the pollen will be stored.

Mr. Holtermann—You don't make any distinction between combs you use in the brood chamber and for extracting?

Mr. Hoshal—I don't any more than this. Combs I have been using for the brood chamber I keep for that purpose because they become darkened and soiled.

Mr. Holmes—In the swarming season in removing the queen cells you tell us that you find the cells along the bottom bar, when you turn up your case in your system of management. Are we to understand that is an unbending rule?

Mr. Hoshal—There may be odd exceptions, but in nine cases out of ten that is the rule. If you want to be absolutely sure of that without a mistake you hadn't better trust to that, better turn your case upside down. I don't believe it is thoroughly appreciated amongst you the difference that it makes in results from your colonies, by having your brood chamber full of brood, and, moreover, having it shallow. The average distance of your brood from your surplus case, is about eight inches. With the shallow frame it would be an average distance of five inches. The nearer you can get your brood to your surplus case the better. Some might say: "When you hive your swarms, contract your hives down," but you won't get as good results because the average distance of your bees from the brood which is contracted is greater than in a case that is shallow.

Mr. Holtermann—Don't you find a very distinct tendency when you make your frame shallower, that the circle does not only work one way, but the other way, and it curtails the brood on the outer sides of the frame, when you get beyond a certain length and make them shallow?

Mr. Hoshal—Yes, it does.

Mr. McEvoy—Will Mr. Hoshal explain about letting off the steam at zero weather? Mr. Hall and I are in a quarrel about it.

Mr. Hoshal—I would say let it off, in simple words, without giving any reason.

Mr. Grainger—Do you have any packing in the top of your cases?

Mr. Hoshal—They are buried in the case.

Mr. Grainger—The idea I had speaking about the ventilator, was, wouldn't some chaff packing there affect that and still keep them warm?

Mr. Hoshal—I guess it would if you don't pack them too tight, but you must be careful to give them a vent.

Mr. Grainger—It is not so much the ventilation as keeping them dry.

Mr. Hoshal—That is the idea. Chaff will absorb moisture.

Mr. Pettit—I would think another point in connection with what Mr. Grainger has mentioned, is that the packing should not touch the cover of the outside case and the ventilator could draw through over this packing and there would not be the direct escape of steam.

Mr. Hoshal—I was one who lost heavily last winter in wintering. Now if you ask me how to winter outside I will tell you plainly that I don't know how. I will tell you some things I went through this last winter and I took occasion to find out. I have had a suspicion for a long while moisture in the hive very often, particulaly in cold weather, was detrimental to the good wintering of bees outside; that they had to be kept dry. I experimented along that line for five, six or seven years, and I could never find a winter suitable for experimenting. I used this ventilator, but I couldn't strike a winter that would put the thing to a test. During that time when I was packing there were some out-