

out, and only that stock which was strong and able to exist remained, and you have a strain of bees which in a measure is immune to disease. I have no objection to changing queens, but what becomes of the disease?

Mr. Hoshal—I find this, that as you change those queens the bees will throw it out themselves. When it gets to the advanced stage the bees refuse to remove it.

Mr. Holtermann—Wouldn't you say they may?

Mr. McEvoy—No, they will.

Mr. Holtermann—Isn't it an exceedingly risky thing, even granting that that cell will be disinfected? Isn't it possible that they may miss a cell here and there which is in the more advanced stage. This year I had a case where I found some cells with dead brood and I looked at it and it didn't have the indications of foul brood. It was down in Norfolk county. I made up my mind it was not foul brood, and I showed it to a man who had seen foul brood pretty often and he said, it is not foul brood. I made up my mind to treat the stock, as I never like to see dead brood in the hive, and I cut a little piece of it out and sent it to Prof. Harrison. To my surprise the report came back that there were foul brood germs. I am afraid it would be very risky to leave any of those combs for fear there might be a cell which they wouldn't clean out.

Mr. Hoshal—In connection with that, with a cell of the more advanced type of foul brood, when it comes to that infectious stage, and the honey from that infected colony is spread throughout the yard the disease which develops from that colony is the rank type at once.

Prof. Harrison.—You have there what we term in bacteriology as virulence. To illustrate, we have some diphtheria epidemics that are very

mild and some that are virulent, and very frequently an epidemic may be stopped in the mild type and gradually get more virulent, and we make use of that principle when we want to grow a very virulent germ by passing it through the living bodies of certain animals. For instance, if any of you are poultry men you will know there is an infectious disease of poultry called rupe, and you can take the germ and by transferring it to an absolutely healthy hen or pigeon we can cause an infection in that bird. It may be a mild one. If we again isolate that germ from the bird and pass it on to the second bird and from the second to the third and then compare the original germ we started with and the germs as taken from the third bird you will find that from the third bird will be more than three times as virulent. By passing it through the bodies of these birds that germ has acquired virulence. I think it is the same with foul brood. Certain germs may at the start be virulent and they may be made still more virulent by passage through larvae. It is a very difficult thing to have every condition under your control in performing experiments with bee larvae. I have had these observatory hives in my laboratory and kept them there on the quiet till forced to take them out and was told I was going contrary to the foul brood act. I had these legal difficulties, but worse than all, the technical difficulties in working on this question. There are lots of things I would still like to work at with regard to this question of virulence, but as I say, it is a very difficult thing to work with this bee larvae. That is only the beginning of the difficulties, but I think this question of virulence is a very important one.

Whilst I am speaking I want to say one or two other things with regard to what previous speakers have mentioned. First of all, with regard to