Another thing which might be mentioned is the fact that in the study of bee activity we can form conclusions only when the bee does something and the bee moves. Now we may put the bee under certain circumstances which brings on certain changes in the bee, but unless we see that bee moving toward or away from an object presented to it, or see it move in some way or change its position we have no way of knowing whether it responds to the stimulus presented or not. So that in studying the activity we are studying the activities, the motions, which the bee makes on account of the changes presented to it in its environment In speaking of environment, it might be well to call attention to the fact that environment may be either outside or inside of the animal. To illustrate what I mean by enviroment which is actually inside the animal, if any animal were to take some food which would irritate it in some way and cause to act that food would be a factor in its environment.

Now, ordinarily in talking of bee behavior it would be the orthodox thing to say that the colony consists of three kinds of individuals, and to define what these are and tell something of the conditions which exist in these three kinds of individuals, but to a company of bee men or an audience which is composed largely of bee men those things are superflous. So I have thought perhaps the best thing to do was to call attention to one or two particularly interesting points which I have never seen, as yet, developed in the Bee Journal.

I want to call attention first of all to what we may call the division of labor which exists in a colony of bees. We have in the active season several thousand individuals working together in a certain amount of harmony. If you had 30,000 men all together in a small place there would be great confusion unless there was an organised plan under which these 30,000 men might live. If every man sets out to do everything for himself we have the condition which Mr. James spoke of as quite common among the producing classes, not a co-operation. In the bee colony we have co-operation. That is, we see a minimum of superflous movement. We see a harmony existing in the colony of bees and a division of labor of the colony in a very careful manner. Now we know of no governing individual in the colony. Of course every beekeeper knows that the queen is not the governor of the colony in any sense. The queen is the least, perhaps of all. We find no company of workers that gives orders or anything of that kind which we can recognize, and yet throughout the whole thing we see a beautiful system of the division of labor of the hive. Some of these things we can explain to a certain extent, but we cannot do very much better than to fall back on the expression Maeterlinck has used in his delightful book on the bee in which he says, "this is done by the spirit of the hive." Of course that is a confession of ignorance. At the same time we still are at sea as to what actually is the factor that brings about this harmony.

In the first place we find a marked division among the bees according to age. Those bees that are less than 14 to 17 days old do the inside work of the hive, they secrete the wax, feed the brood, clean out the hive and do the other inside work of the hive, and those bees that are more than 14 to 17 days old do the outside work. Now, we can change this condition. If, for instance, we were to move a colony of bees when a great many of the field bees were out, remove it to a new location we would then have a colony composed largely of young bees, and if we put a hive on the old stand we would have returning to it the field bee. But they are a group of bees which we could call a colony. If we gave them a queen, we should have a colony composed of old bees, and if it were necessary some of those old bees might begin to secrete the wax, and they