

bees made to join the swarm, after which the parent colony was given a new location, and if the stock of bees were not approved a rapidly maturing queen cell was given them, otherwise they were left to rear their own queen. The work was all done at the time and gave entire satisfaction.

#### PREVENTING INCREASE.

When I had secured as many swarms as I wanted I prevented further increase by the following plan: When a swarm came out I would hive it on the old stand, putting a queen-excluder on top of the new hive and place the poorest colony over the excluder. If the hive is not adapted to the "tiering system" the combs of brood must be shifted to a super that will fit the top of the new brood chamber. The queen-cells may be cut out or not, the queen being separated from the guarded cells above, the excluder no swarm will issue, at least such is my experience. If the queen below the excluder is old the bees may be allowed to rear a young queen above the excluder and when she is four or five days old she may be given freedom of the entire hive by removing the excluder, and nine times out of ten the old queen will be superceded by the young one. Colonies treated in this way have been very profitable as honey-gatherers this season.

#### THE LAYING WORKER BEE.

What is it that brings about so great a change in the worker bee as to qualify her to become the mother of male offspring, and to receive from the workers the attention of a queen, or rather of an enslaved captive?

I have had a theory for years past that the "laying worker" is a creation of the worker-bees in an abortive attempt to substitute her for a queen, and the change is effected by what we call the "balling" process.

To suppose that the "balling" and consequent sweating process, applied to the undeveloped female worker, or a poorly developed queen, may in some cases so develop the dormant female organs as to enable the patient to develop and lay a few eggs as we see in the case of the laying workers and male-laying queen is to suppose what is not only reasonable but highly probable. Some fresh discoveries of late have confirmed me in these convictions.

A week ago I captured an "after-swarm" that of course had a virgin queen. I hived them on a set of combs and they worked rapidly for two days and then nearly stopped work entirely. I suspected that the young queen met with some accident while out on her wedding tour, which proved true upon examination. I at once gave the

swarm a frame of brood, cutting a hole in the comb to hasten the starting of queen-cell, with the view of giving them a maturing queen-cell. On the third day I opened the hive to see if queen-cells had been started, and finding none I supposed I was wrong about the queen being lost and began a search for her, when I discovered a ball of bees on the bottom of one of the frames. I applied some smoke and found that they had enclosed a faded sweaty looking worker-bee. When released she retreated, pursued by the workers, just precisely as is seen when a queen is "balled" and released by the use of smoke. Another case has just come under my observation. I noticed that one of my nursing nuclei destroyed a queen-cell given them, and upon looking for the cause I found that the workers were following a dark sweaty worker-bee, as she moved as a crestfallen captive, on the combs. It is not necessary that these manipulated "laying workers" lay eggs in all cases in order to put the bees under a hugging delusion and make them unmanagable when introducing a queen, or giving them a queen-cell. The minute worker bees, in the absence of a queen, begin to bestow their attention upon a fellow "worker"—most likely a lost worker that has straggled into the hive—they become indifferent, if not encourageably hostile, to the acceptance of a queen, especially a virgin queen. To these causes I attribute all the difficulties in the way of introducing virgin queens.

#### INTRODUCING VIRGIN QUEENS.

Can it be done in a practical way after they are several days old, is a question that has been perplexing enough to many an apiarist. I answer that it can be done with as much certainty as can any other manipulation connected with apiary work that requires a high order of knowledge and skill to make it a success.

#### HOW TO DO IT.

Place a frame of hatching brood (no unsealed brood is admissable) into a hive and by the side of it an empty comb, and then a division board. Close the entrance to the hive so as to make it dark at that point. Now shake about a quart or more of bees from a frame or frames taken from a populous colony into the hive containing the frame of hatching brood etc., and cover with a cloth closely so as to confine the bees to the darkened hive. In about six hours after, the bees were confined to the hive turn up one corner of the quilt so as to insert the end of the cage and run into the hive a virgin queen from one to six days old. Keep the hive closed for 48 hours and open the entrance after sundown. Nine times out of ten the queen will be safe and mated by 48 hours later.