

## ***Lecture -5-***

### **Laying Worker:**

Is a worker bee that lays unfertilized eggs, usually in the absence of a queen or queen substance. Only drones develop from the eggs of laying worker bees. A colony cannot survive with only a laying worker bee. Normally, development of the workers' ovaries is inhibited by the presence of queen substance. However, laying workers also may be found in normal "queen right" colonies during the swarming season and when the colony is headed by a poor queen.

The laying workers are usually produced under the following cases:

1. Loss of the queen.
2. The absence of fertilized eggs or young female larvae in the colony.
3. The beekeeper's negligence for a long time.

### **Signs of the presence of Laying Workers:-**

1. Laying worker lays more than one egg in each cell.
2. Laying worker lays eggs sporadically in the comb, but queen starts laying eggs in the center of the comb.
3. Presence of drone brood throughout the hive.

### **Protection from the formation of Laying Workers:**

The formation of laying workers can be avoided by the following means since protection is better than curing:

1. Make sure that the queen is inside the hive during inspection.
2. Taking care of not losing the queen (death or fall) during inspection.
3. Entering the queen or a queen cell into the colony that loses its queen should be done quickly.
4. If queens are not available and the conditions are not suitable for rearing other queens, should be uniting to another colony that contains a queen.

### **How to get rid of Laying Workers:**

The process is carried out in the following steps:

1. The hive that contains the laying workers is closed, and they are carried to another place in the apiary.
2. A hive that contains combs that have a brood, honey and pollen (without bees) is put instead.

3. The combs (frames) of the colony that contains the laying workers are shaking on a piece of white cloth beside or in front of the hive so that the bees fall on them.
4. A number of workers the majority of which are laying mothers which cannot fly due to their heavy weight and their ovaries are filled with eggs are stay on the piece of cloth. The piece of cloth is bent on them and then killed by sinking them in water. As for other workers, most of them fly to their original hive which is provided with brood and food.
5. The drones' brood inside the combs of the laying workers is scraped and the combs are distributed among other colonies where the workers clean and fill them.
6. If the queens or queens' cells are available in the apiary, it put in the orphan colony. If the conditions are not suitable, these bees are unite to another colony.
7. The beekeeper should constantly check this hive to guarantee the success of the process.

**Swarming** – Swarming is the natural replacement of an established queen by a newly reared queen in the same hive.

**Swarm** – Swarm is a large number of worker bees, drones, and usually the old queen that leaves the parent colony to establish a new colony.

**Swarm Cells** – Swarm Cells are queen cells usually found on the bottom of the combs before swarming.

### **Reasons of Swarming:**

1. The effect of heredity. There are races tend to swarming such as the Egyptian bees.
2. The crowdedness of the hive. The hive may be crowded with brood and workers.
3. The heavy and short season of nectar abundance as the strength of the colony increases rapidly.
4. Presence number of virgin queens in the colony.

### **Signs of swarming:**

#### **The signs inside colony:**

1. The abundance of the queen cells.
2. The abundance of drone broods.
3. The queen refusal to lay eggs and their fast unusual movement on the combs.

4. The hives crowdedness with bees as the bees reduce going out before swarming. As a result, they accumulate inside the hive and on the flight board and its sides.

### **The signs outside the colony:**

1. The workers gather in front of the entrance of the hive in large groups and they are doing very unusual disturbing buzzing.
2. A large number of workers flies and some of them fall while flying because their abdomen is full of the honey and the swarmed bee does not tend to sting.

### **Harms of Swarming:**

1. Swarms make colonies weak and decrease their production of honey due to the Queens refusal to lay eggs before swarming.
2. Sometimes the swarms get lost if not seen by the beekeeper or if it goes far.
3. The exposure of the swarming queens to loss if they fall during flight or eaten by birds or preying insects.
4. The beekeeper exerts large efforts to take the swarm back, catch it and house it again.

### **Catching Swarms:**

#### **First: Stopping Swarms from Gathering in a Nearby Place:**

1. Spraying the swarm with water to make it gather in the nearest place.
2. Making loud sounds by tapping an empty pot or shooting bullets in a place near to the swarm.
3. Reflecting light by a mirror if the swarm's flight is close to earth.
4. Covering the swarm with dust if the swarm's flight is near the earth.

It should be noted that spraying water is like rain, the sounds are like thunder, light is like lightning, and dust is like storms.

#### **Second: How to Get a Swarm?**

When the swarm gathers in a place, it is put in a container such as a wooden box or a swarm box, etc. The container is left near the swarm place until all bees gather. Bees can be encouraged to gather in the box by spraying it with water. Then, the bees are covered and taken to the permanent place.

### **The Swarm can be put in the Swarming Box by the Following Ways:**

1. When the swarm is on the branch of a small tree (a bush), the branch that contains the swarm can be removed and put in the box (It is possible to put 1 or 2 combs that contain an amount of honey in the box in advance). The box is left until all the bees of the swarm gather. It is then covered and moved.
2. If the swarm is on the branch of a large tress, the prepared box is placed under the branch, the branch is shaken and the swarm fall in the box which left for some time so as all the bees of the swarm gather. It is then covered and moved.
3. If the swarm is on a high place that is difficult to reach, we can get it by the following means:
  - a. An egg laying queen is put in a cage or reservation it by a hemispheric cage on a waxy comb. The comb is fixed on or at the end of a long pole. We should ascend to the nearest possible place and move a comb inside the swarm. By so doing, the bees gather on the comb, the pole is lowered, the swarm is put in a box prepared in advance and is taken to the apiary. After two days, there is a search for the queen inside the box. If the queen is found, the trapped queen will be taking to be used in another place. If it not found, the trapped queen will be set free.
  - b. A bag of cloth with its upper open part fixed on a chain of wire is tied to the end of a long pole is used. The upper part of the bag is surrounded by thread whose end is in the hand of the person carrying out the process. The pole is heightened until the bag surrounds the swarm. The bag is then closed on the swarm by tightening the end of the thread. The swarm is then discharged in the hive or in the box prepared for that, and moved to the permanent place.

### **Third: Swarm Housing: as follows**

1. **Taking the Swarm Back to Its Colony.**
2. **Housing the Swarm in a New Hive.**
3. **Uniting the Swarm with Another Colony.**