

2. The preparations a colony generally makes before it swarms. When these are known in every stage, the apiarist must know, at whatever stage he finds them in a hive, what to do to stop them, and keep the colony from swarming.

There must be no confusion between preparations for swarming and causes of swarming. Preparations are not causes. To hinder preparations without removing causes is useless. To remove causes after preparations are well under way is not nearly so satisfactory as to prevent the causes even before they occur. A division of the working force of the hive can be prevented by keeping all hands contented and at work; but a colony once determined to swarm will carry out the program in spite of all but the most radical measures.

Some causes of swarming are as follows:

(a) The super is crowded with honey, there is still plenty of nectar in the flowers; but the bees have no comb space in which to store it.

(b) The colony has a queen with great egg-laying powers; but the brood-chamber is too small for her, or has become crowded with honey and pollen. She has an egg or larva in every cell and young bees are not hatching rapidly enough to give her room to lay. The constant inflow of honey from the fields stimulates her to lay, yet she must be idle or seek a new home with a wider field of usefulness.

(c) The secretion of nectar in the flowers is continuous but slow. The queen is constantly stimulated by the incoming sweet to lay, while the demands of the harvest are so light that the workers live much longer than is usual in a heavy harvest. The hive becomes over-populated and crowded.

(d) The hive is poorly ventilated or sits in the hot sun.

(e) Bees often swarm when they are superseding an old queen.

The preparations for swarming are as follows, and in the order named:

- (a) Drone brood started.
- (b) Queen-cell cups built along the lower edges of the combs, or in other convenient places in the brood-chamber.
- (c) Eggs in some of the cell-cups.
- (d) Larvæ in the cell-cups.
- (e) Capped queen-cells.

The swarm comes almost immediately after that.

Queen-cells do not cause swarming. They are a part of the swarming operation. Simply cutting them out after they are built does not remove the cause, and seldom does more than delay the swarm for a few days. In the meantime it makes the bees discontented and seriously checks honey-gathering. The successful prevention of swarming, then, is not cutting out queen-cells, as many suppose.

Give the Queen Room.

When cell-cups appear in any hive it is time to start giving the queen more room. Remove a comb from the outside of the brood-chamber, and put a frame of wired foundation in the centre of the brood-nest. If the colony is quite strong it may be given two such frames. If any cell-cups have eggs, destroy all such and give three frames of foundation. To miss destroying even one may mean failure. Every frame of brood must be examined carefully. In every case alternate frames of foundation without brood.

In removing combs from the brood-chamber follow this order, first empty combs and combs of honey till they are all cut out, then sealed brood. If the empties are clean and the honey white, place them in the extracting supers of the same hive (if they will fit) also the brood unless it is needed for making increase or building up weak colonies.

The essentials for swarm-control are ample room for brood and honey, given in time, good ventilation and shade. An ounce of prevention is worth a ton of cure.

Enlarge the Entrance

As the strength of the colony grows, enlarge the entrance of the hive about June first, when a larger entrance should be given an equal width of the hive and a quarter deep. At the opening of bloom every colony should be enlarged and before it is half full another placed between it and the entrance chamber. Adopt some system of ventilation.

Plenty Super Room

Years of experience with localities gives an idea of yield per colony to expect. Get super room to that capacity almost at the start. That the extra strong ones all crowded. It will not hurt to have more room use. Remember the essential, shade, ventilation.

Queen Cells

Now in spite of all well experienced care, hives will be found with queen-cells. The conditions under which cell-cups appear are:

1. Under swarming impulse.
2. When the queen is fast superseded.
3. When the queen has disappeared.

1. For Swarming

Number one is natural and easy to detect. Cells in convenient places, lower edges of combs, and the likelihood of swarm is acquired. In the final remedy is to remove the combs of brood but the least brood, and give fresh foundation. This gives the natural swarm and will usually satisfy the desire. The brood can be weaker colonies of Lot A or young nuclei according to instructions below.