BASIC BEEKEEPING

SWARMING AND SWARM CONTROL 1

1. What is swarming?

Swarming is primarily a reproductive process. A sign of strength, good health and plenty of stores. A difficult instinct to control! It usually occurs between mid April to mid July with a peak in early May and a smaller peak in early July but swarms can be expected at any time within the period. Swarms are both valued and a problem too. A good beekeeper has a strategy decided early in the season to maximize the value of captured swarms and to minimize the difficulties that swarms will pose for him/herself and to the apprehensive public.

2. What happens?

Early in the season Drones appear. No drones - no swarms! But no drones mean colony is not well. (*Remember drones should be present in seasonal, proportionate numbers. Too many/too few, or too early or too late in the year are not good signs)*

Queen cups are formed or renovated on the edges of brood combs. Eventually an egg will appear in many of them. 20 – 30 or more. A swarm could then emerge, usually as soon as the first Q cell is sealed. Swarming is very weather dependant - only on a fine day. About half the bees, (MOSTLY MIDDLE-AGED), and a proportion of drones will leave the hive with the queen. This is the first time she has left the hive since her mating flight. IT IS A PRIME SWARM. Every DEPARTING worker will have filled her honey stomach with honey and encourage others with vigorous " Buzzing Runs" on the surface of the combs some urgently encourage the queen to leave the hive. They are excited, happy, non-aggressive and content. Easy to handle; they fill the air with bee song!! The queen settles on a branch/post/shrub usually within 10 – 20 meters of the hive. Time around 10.30am to 2.00pm. All the bees that are part of the swarm settle around her. If she gets lost they will all return home within minutes.

It is not known how bees are allocated to the swarm or to stay in the hive. Foragers who have been allotted to stay at home continue with their work as normal. From the outside it is not easy to tell if a colony has swarmed even soon after it has left. There will be signs inside however but not conclusive ones if there are other similar hives in the apiary.

Bee scouts in the swarm will already be seeking a suitable new home for the new colony. Indeed, they will have been scouting for several days and are easily recognized by their behaviour. A sign that a swarm is imminent!!

The newly emerged, resting swarm is clustered to conserve their stores. They patiently give attention to the scouts who have returned with information about a new home. Eventually an agreement is made. The swarm takes off and flies maybe several miles to their agreed destination.

A few days after the prime swarm has left, newly hatched virgin queens will emerge with more bees. These are castes. Sometimes a caste may have several virgin queens. After several castes have left there will be very few bees in the original colony. A beekeeping disaster area!

Newly hatched queens will try to kill the others in their cells waiting to emerge. They track down their younger still imprisoned sisters by "piping". Their sisters call back and if located will be stung to death through the wall of the queen cell. Worker bees try to protect the young queens and try to delay their emergence. The beekeeper will disturb these workers during manipulation and virgins are often seen climbing out of their cells and disappearing into a mass of bees. Control can be lost in these circumstances. Sometimes a ripe virgin can be "pulled" *and placed in a queenless colony or nucleus.

* *This beekeeper jargon means the new queen is taken out of her ripe cell without touching her preferably and run into the entrance of the queenless hive.*

3. Some theories on the causes of swarming

- Simple overcrowding (Huber 1792) But non-crowded colonies do swarm!
- Excess Nurse bees over those needed to feed larvae because Q has reduced laying rate due to age or lack of space. (Gerstung 1891) Disproved by adding excess nurse bees.
- Basic overcrowding leads to poor circulation of QUEEN SUBSTANCE. (QS) (Butler 1957)

4. NOTES

- Queen Substance(s) is a pheromone produced by the queen, which is circulated to all workers constantly. When present in sufficient quantities QS inhibits the production of Q. cells and toleration of Q. larvae. It also inhibits the development of ovaries in worker bees. Inefficient distribution of Q. substance will lead to swarming or **Supercedure.**
- A swarm may stay in its first stop for 30 minutes or several days. The sooner they are captured the better. If they stay at the same spot for several days they become defensive and hungry!
- A swarm is not the property of the beekeeper unless he always has it in view!
- Supercedure – Replacement by the bees of a weak queen at any time and only a few cells; Daughter & queen can live together.