

Stahlman beekeeping notes

for 2021

Issue # 14 April beekeeping issues (Some methods to control swarming (or should I say "try to stop the bees from swarming".))

Swarming is a natural method of colony increase. Swarming control can also lend itself to making new hives.

Honey bees swarm season can readily be considered as the time trees begin to bloom or leaf out. But honey bees may swarm at unseemly times such as late summer.

The swarming instinct can be a result of heritable traits – in nature honey bees reproduce for the continuity of life. In biology we learn that cells are generated from cells. The honey bee is made up of many cells and has chromosomes that are replicated by two special members of the honey bee family -- the queen and the drone.

It would take a lot of space to go into the discussion of cytology (a study of bee's genome). But basic things we as beekeepers need to know is that it takes a drone to mate with a queen that then can lay fertile eggs and unfertile eggs.

There are books written about swarming. This is not a book!

- The major reason for swarming is the natural instinct to swarm. This is stronger in some honey bees than others.
- The old queen leaves the hive/colony with about half of the honey bees which includes many worker bees and some drones.
- Young honey bees remain behind to care for the brood laid by the old queen and to care for the virgin queens still in their cells. The swarm may be delayed by weather.
- The emerging new virgin queens will fight and only one will survive. An after swarm may occur which may have a number of small swarms with virgin queens in each.
- Swarms generally leave a hive during early afternoon – I have seen swarms leave as I worked in the bee yard. None left before the sun was well above the horizon – after 10:00 a.m.

The factors that must be present for a hive to swarm:

Bees rarely swarm prior to raising drones.

As a beekeeper one should be looking for drone capped brood in early spring as an indicator that the bees might be preparing to build queen cells. If one sees a number of adult drones, it is a sure sign that queen cells will follow. Remember that timing is important. Drones take 24 days from egg to the day they emerge from a cell. Drones

are usually not raised by a weak hive unless the bees are about to supersede the queen or the queen becomes a drone layer.

Many beekeepers are of the opinion that colonies swarm because the bees are crowded!

Any time a beekeeper observes during the spring season bees hanging on the outside of the hive – the hive is crowded. And they may be right that the hive is close to swarming. But the only sure way to determine if a hive is going to swarm is to open the hive and examine frames for queen cells. [If queen cells are observed – maybe 15 to 20 queen cells – the hive will swarm.](#) A beekeeper can cut down the queen cells but the bees will rebuild them and unless the crowding situation is resolved, the bees will only be delayed unless the beekeeper missed one queen cell. In that case, all that work results in failure to prevent the swarm.

Queens develop very rapidly

Once a queen cell cup is built by the bees, the queen will deposit a fertile egg in it. In just 16 days a new virgin queen will emerge from that cell. By the time the queen cell is capped over, the honey bees are well on the road to swarming. If capped queen cells are observed, action is required immediately to prevent a swarm.

If the beekeeper finds young virgin queens running all over the inside of the hive, the swarm has already left. Check near-by trees and shrubs for the swarm or look high up into tree tops. I have been lucky from time to time to catch one of my own swarms.

Two lines of thought on swarming:

- 1) I don't want my hives to swarm!
- 2) I will increase my hive numbers by splitting hives about to swarm – this often results in reducing any early chance for a honey flow. See the old adage at the end of this beekeeping note.

Management to prevent swarming

One needs to do frequent hive examinations early in the bee season! I would suggest every seven days. Before swarm queen cells are begun, the drone population is reaching maturity in the hive.

One method of swarm control requires frame manipulation to prevent a swarm from issuing from the hive.

Since one trigger for a hive to swarm is crowded conditions, the beekeeper must manage to keep worker cells open for the queen to continue egg laying. From much reading and

observationsDuplin I have made, it appears to me that the worker bees have a great deal to do with the decision within a hive to swarm.



Photos provided by Shane Woodruff's bees in Duplin County just a week ago. Bottom box and top box of a standard hive.

As the honey bees begin to gather honey in the spring, they will begin to fill all the cells in the brood chamber with pollen and nectar. In fact, so much (nectar and pollen) is collected as trees and early flowers begin secreting nectar there will be few cells available for a queen to lay eggs.

We call a hive filled with brood cells – congested. This has several consequences:

- It is somewhat like a production line that has suddenly stopped. The young worker bees hang around with nothing to do.
- The queen is also slowed from her egg laying duties – she cannot find open cells to lay eggs.
- Instinct directs that the bees do something about this dilemma. Thus, if no beekeeping management by beekeepers happens, the bees will swarm.

My background of 70 + years of working with bees, has taught me it is very difficult to stop a hive intent on swarming from swarming. But if prevention of swarming is the goal, actions by the beekeeper must happen when drone brood is observed very early in the season.

Techniques to stop a hive from swarming

Making splits is almost too easy with a strong hive! The problem is if you don't want to increase hive numbers splitting a hive is not the answer.

Management to prevent swarming requires constant surveillance of a colony of bees. I don't mean walking by and looking at the hive, but opening up the hive and examining the frames and brood population. During swarm season (April and May) inspect the hive maybe once every week. If one waits two weeks between inspections, a swarm may issue before the beekeeper can use any management techniques to stop it.

The first step is to make sure the brood nest does not become congested. This one action if started early and followed thru with - will at least reduce the urgency of a colony to swarm.

One important point I would like to make:

Adding a super of new foundation above a queen excluder to provide the bees with more room will not prevent the hive from swarming!

- The queen must have access to drawn comb with open cells.
- Timing is critical because worker bees will begin to build queen cell cups for the queen to lay eggs. Also note that queen cells are found near the bottom of frames or near edges of comb – not up along the top bar.

Management to prevent swarming thus must solve the problem of the congested brood nest.

There are many articles about swarm prevention in magazines and books. It seems that each individual beekeeper has a system. Most of the ideas suggested have many things in common:

Provide room and ventilation to the brood nest. One sign of swarming is bees hanging (bearding) near the entrance to a hive. I will discuss this issue in later articles because what one sees in the spring is possible swarming and later during hot summer days it is a different problem.

Point to consider:

- Early in the season make sure all frames in the brood nest are well filled with good worker comb. Bad comb reduces available cells for the queen to lay eggs.
- Do not over feed a hive of bees – Feeding encourages the storage of sugar syrup in the brood nest. Bees need food but don't over feed.
- Many of the methods require the removal of frames of brood in the brood nest to be replaced by drawn comb or frames with new foundation.
- Removed frames can be used to start new hives (increases) or moved to a location above the brood chamber. (Checkerboarding) (Demaree method).

Swarming season usually ends when honey flows stop. Making increases is quite easy. It is called splitting hives. That is the topic next week.

I also feel beekeepers should have a small nuc hive in addition to a regular hive or two. The nuc hive is insurance. Frames can be borrowed from it to address problems in the hive or two in

the apiary – such as having a queen failure. The spare queen in the nuc is available immediately.

If I am asked what to do **if additional hives are not wanted**:

My answer is:

– remove brood frames to a nucleus hive and replace the removed frames with (new foundation or drawn comb). Maybe a hive died out over winter and you want to create a new hive from a surviving hive that is strong.

– sell brood frames to other beekeepers. A good frame of brood with bees is worth at least \$20.00 or more. Nuc's are selling for \$160.00 to \$200.00 this year. They have five frames and a queen!

-- help other beekeepers. (Develop a network of friends – who can later help you).

-- manage the hive by moving frames from the brood chamber to an upper box the same size of the boxes in your brood chamber. All the new bees will add to the hive's ability to gather a great honey crop if the hive is in a good location. Check out Demaree System of beekeeping on the internet.

-- Just let them swarm naturally. The swarm will add to the pollinator needs in the area.

I will be writing more about various methods to get honey crops as the bee season progresses.

An old adage –

"A swarm of bees in May
Is worth a load of hay;
A swarm of bees in June,
Is worth a silver spoon;
A swarm of bees in July
Is not worth a fly."