

STAHLMAN BEEKEEPING

NOTES FOR 2023

Issue # 23 June 17, 2023 An Absconding Hive

We are just a few days from the summer solstice which marks the beginning of summer. From June 21 on to fall, our daylight hours will begin to shorten. It is also the time that I consider getting my bees ready for winter survival.

Let me begin this weeks article with a visit I was called upon to do this past week. I usually have answers to problems and try to share as much as I can about beekeeping techniques.

A reader of my notes contacted me to check a hive of bees this last week. Not a problem – in fact a drive of less than 10 miles.

I know the desire to make more colonies is a driving issue with new beekeepers and older ones as well. A lot of information is on the internet on methods to achieve this.

In this particular case, the beekeeper had a question – “I bought a package of bees this spring and they were doing pretty good! I checked them this week and they are gone!”

One can not answer a question like that on the phone. I drove over to the hive location. It was true that the hive had no bees. Foundation in frames had been drawn out which supported the beekeepers statement “They were doing pretty good.”

I asked and was given one frame from the hive. Frames can tell a story.

What could I determine by looking at the new hive [started in 2023 by a beekeeper who checked on the bees occassionally]? This is a lesson learned the hard way! Some background information is helpful.

He started one hive in new equipment with a three pound package of bees.

Start date – March 18, 2023 Money invested \$140.00 for the bees and approximately \$300.00 more for hive equipment and tools. He took a beekeeping class.

The beekeeper’s expectation was to harvest some honey this year.

IMPORTANT POINTS

The life expectancy of a worker bee varies throughout the year.

Those born from late spring to mid-summer live maybe an average of 40 days – ½ of that as hive bees and the other half as forage bees and defenders of the hive.

Winter bees live much longer.

Every bee in the hive right now will not live to see September except the queen.

Old queens egg-laying abilities decline. It has often been reported that the queen will lay 600,00 eggs in a lifetime.

You should be seeing fewer drones in hives at this point in the bee season.

A hive with a lot of drones could be an indication that something is going wrong within the hive.

My look into the hive clearly indicated a few bees – most likely visiting and checking out the hive. I pulled each frame from the brood box. Most were well drawn comb frames. Those to the outside near the walls of the hive had been started with some wax but still much more to do.

There was no honey, no brood and a few cells were filled with pollen. Definitely no bees!

One of the frames from this hive told me everything:

- At one point, this hive was thriving.
- Wax moth had not gotten around to do any damage and no webbing or tunnels could be found.
- No small hive beetle larvae could be found.
- The beekeepers most valuable asset was the comb in the frames which needed to be protected from the two pests mentioned above. This is the positive message.

The pictures of the frame tell the story as clearly as anything I could imagine.

At some point the hive became queenless, emergency queen cells could be found on several frames. The fact is all of them were built at the edge of capped brood -- worker cells told me that at the time the queen disappeared some event caused her to die suddenly.



Brood had been raised in this hive before the queen disappeared. Dark comb indicates several cycles of brood was raised. Each cycle requires workerbee development of 21 days each. That first cycle would have covered the rest of April. We can say the queen was present and laying very well

into early May as indicated by the dark worker brood cells. But something happened in early May – The bees reacted to the natural event of a queen loss.

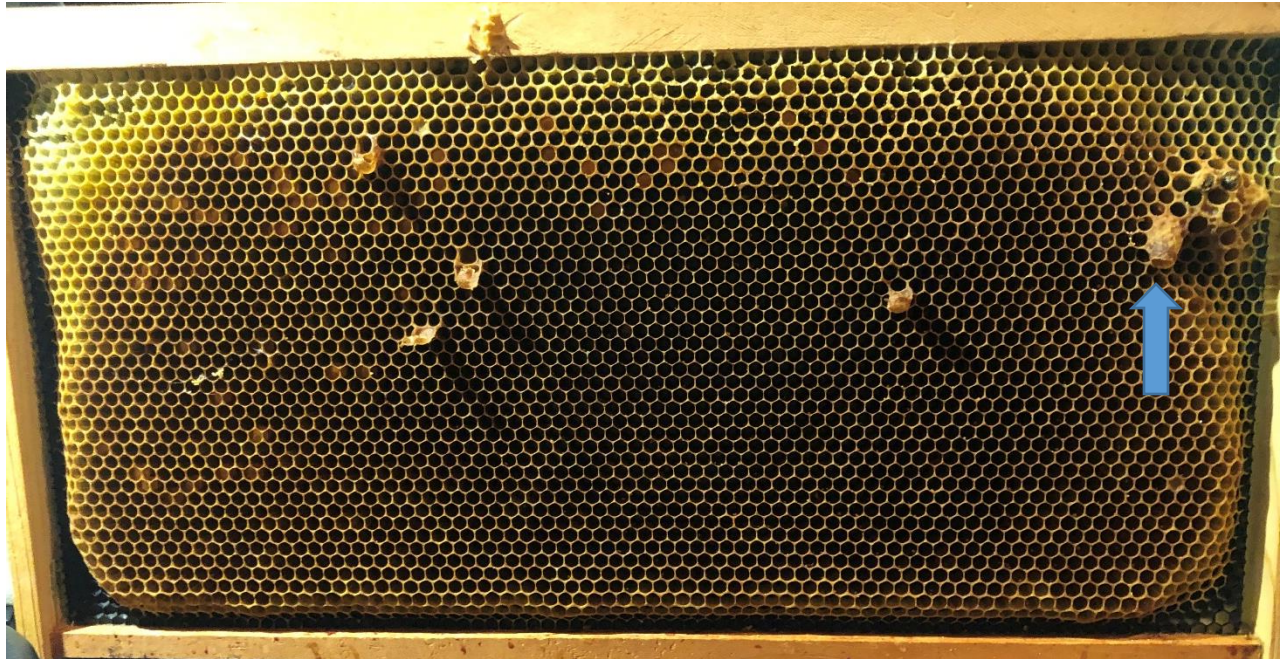


Note all these queen cell cups and the location where they were built.

When a colony of bees is without a queen, they will begin within 24 hours to build what are called emergency queen cells to replace the queen.

The bees select young larvae 4 days old to feed and by nature begin a process of raising a new queens.

At the time the bees began raising new queens, all the cells in the middle of the frame contained capped brood. Only larvae of the correct age were located near the end bars and the bottom bar.



This side of the frame shows queen cells that were tore down by the bees after one of the new queens emerged from the queen cell in the upper right corner of this frame. All existing worker brood emerges about the time a new replacement queen begins to lay eggs.

I know the hive did raise a replacement queen in their effort to survive. For some reason, the young queen failed to lay eggs or may have failed to return to the hive from a mating flight.



A sign that a queen did emerge from this queen cell. Note the open end on the cell.

This placed this colony in dire straights. No eggs, no new

worker bees to replace the ones that die.



The queens in these cells were being raised but they did not emerge -- an emerged virgin queen found and killed them.



A dead virgin queen still in her cell. Worker bees clean out the dead queens and chew down the cells leaving only some disfigured comb to indicate where it was located on the frame.

It is common in many hives to find old queen cell cups.



The queen cell cups at the bottom of this frame have no eggs or larvae in them. They are left over cups which turn dark with age.

Can you spot the queen in this photo.

Hint, she is marked with a red dot.

Then there was a tale-tell sign of wax chips on the bottom board. The hive was robbed of all its food resources. Debris and dead bees on the bottom board are signs left behind when a hive is robbed.



Wax chips on the bottom board with some dead bees and bee parts.

Strong healthy hives keep the bottom board somewhat clean!

Since the honey flow ended a week or two ago, this hive has been robbed – leaving no food for the remaining bees. Some may say Varroa mites caused this hive to die!

My take on this situation:

There was a lack of understanding of what to look for when a hive inspection is made. A good bee population is great, but if new worker bees are not replacing old dying bees, hive populations decline – sometimes rapidly. After being [queen-less] for 21 days, a hive will have some worker bees develop the ability to lay unfertilized eggs. These eggs become drones, and the worker bee population will continue to decline. Eventually the hive is unable to defend itself against robbing. It is possible they were weakened by mites, but without brood --

A hive without food and no larvae to feed is in trouble – big time!

If they did have a queen, she was not laying and when the hive was robbed the remaining bees and possibly the queen absconded. Where they went is anyone's guess. Some speculate that they join bees in another colony.

I have seen something like this happen with mating nucs. A young virgin queen takes a mating flight and the hive bees take off with her – making small swarms with virgin queens.

I found this definition of Absconding:

Abandoning of a nest by a colony which forms a swarm and presumably reestablishes itself elsewhere.

Causes:

- Disturbance or lack of resources.
- Partial or total destruction of colonies by predators including bears, humans and wax moth.
- Introduction of unmanageable mite populations or hive beetles.
- Difficulty in regulating temperatures
- Beekeepers manipulations
- Resource-induced absconding primarily due to dearth – lack of nectar, pollen, water.

Absconding is a particularly poor strategy for bees, since absconding swarms would be unlikely to collect sufficient honey to survive the following winter.¹

¹ *Notes taken from The Hive and the Honey Bee published by Dadant Publications.*