

Stahlman Beekeeping

Notes for 2022

Small Hive Beetles



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It is not unusual to see a few hive beetles scurrying around the inner cover and top bars of a hive when it is opened at this time of the year. Beetles have a tough shell to protect themselves against honeybees. They are easy to spot – they are dark brown to almost black, oval shaped, and when full grown are no more than $\frac{1}{4}$ inch in size.



They are often seen gathered as shown in this photo in a corner of the inner cover. Strong hives of bees are the best defense against SHB.

They were first discovered in the southeastern USA in 1998. They are well adapted to find bee hives. They feed on larvae, honey and pollen. Bees will often abscond from the hive when the hive beetle population grows. I am amazed at how fast they can ruin good comb. The first sign of hive beetles will be adult beetles observed running in and out of honey

comb cells or seen running on the top bars. Bees will often corral them into corners of inner covers, and bottom boards as shown above.

Unlike the Varroa mite, the bees cannot grab it or chew off its legs. When confronted by a worker bee it pulls in its legs and holds itself tightly to the frame or enters a cell where it is safe. Trying to kill them with the hive tool is not very effective. They also have wings which allow them to fly. If they drop or are shook off frames, they can easily re-enter the hive.

Any crevice such as a split bottom bar on a frame provides a great hiding place. When exposed to light when a hive is opened, they run. Those of you trying to smash them know how difficult that effort can be.

Weak hives are targets for small hive beetles. The small population of bees are helpless trying to corral them. The beetles free of being harassed by the bees mate and duck into and out of cells laying eggs. It is not unusual to see up to five or six young larva in a single worker cell. The larval stage causes considerable damage to comb in the hive.

These larvae will pupate in the soil beneath a hive. Within 8 to 60 days depending on climatic conditions, they emerge and according to the literature they have olfactory means to find bee hives. I have never seen a swarm of small hive beetles but in their native habitat of sub-Saharan Africa, small hive beetles have been known to cover the entire front and entrance to a bee hive. Within hours the bees abscond the hive. (Source – Bee Culture Magazine report of Small Hive Beetle – Thoughts from South Africa July 2001 page 7 published by The South African Bee Journal).

I have never seen anything like this! I found a weak hive that was taken over almost completely by small hive beetles. This was a weak queen-less hive a month ago. By adding several frames of brood to help, I was hoping it could raise a queen and recover. A check two weeks later indicated a fair population of bees, queen cells, and I was satisfied that they would raise a queen. After some inattention – a vacation and other tasks to do, I inspected the hive expecting to see brood. This is what I found:



No brood, cells filled with small hive beetle larva, and a slimy watery appearance of the comb surface. This happened so fast --I was caught off guard – I knew this hive was lost. There

was no way I could just put these frames into a freezer and reuse the frame as it was in another hive. Fortunately the comb was built on black plastic foundation.

By the way, the hive had beetle traps on it.



Some beetles were trapped and many adult beetles were in the hive as well, but the population of larva was huge.

It was clearly a mess and this hive was crawling with larva. I was faced with a problem! What could be saved?

First, the biggest mistake I made was assuming the hive would raise a queen and build up so it could survive into next year!

Second, I have never seen how quickly small hive beetles can destroy a hive. I have dealt with small hive beetles before and always considered a control such as beetle traps would take care of the problem. Not his time!

Third, I was not only dealing with a dead out hive – I was dealing with how this “time bomb” of young beetles could be destroyed.

Maybe something like American foulbrood – burn everything! A burn barrel would take care of it. But this hive was new including the super, frames and foundation. The earlier bees had drawn wax on the frames and my thinking “what a waste to burn it “.



The beetles had not harmed the hive body, top cover, inner cover and bottom board. There were beetles but the comb was a mess. A decision was made: save all I could!

I have a solar wax melter and temperatures are hot. Why not use the hive tool to remove all the comb (This can be done when the frame has a plastic insert of foundation). Otherwise, I would have cut all the comb out of the frame.

As can be seen the hive tool scraped comb off the frame into a 5 gallon bucket. It is a messy job that takes some time.

Next, all the larva possible was put into the bucket and the frames were washed, cleaned and laid out to dry in the sun. Not for long because plastic

foundation will begin to warp in the sun. Any larva still hiding on the frame got cooked by the sun.



This is a view looking down into the bucket. Larva and wax were in the bottom of the bucket.

Question: Could the honey in the comb be saved and how about the wax?

First, the heated contents of the bucket produced a quick flow of liquid honey in the solar wax melter. It was not palatable. It had the appearance of being very cloudy, somewhat brown and dark. It was not appealing at all. I am sure I did not want to use it to feed back to the bees. My first thought was to dump it down the toilet. Then another thought - could I use it as a bait in my beetle traps. I will work on that idea



and report on results later this season. I am sure it contained a good amount of pollen and slime. Maybe hive beetles will like the smell. It does not smell good to me. I did not want to taste it.

It was a different story with the wax. I am not sure at this point how much wax can be recovered. However the

slum-gum indicates that it is going to be worthwhile.



This is a picture looking down into the wax melter after the wax cooled from being exposed to the sun. It will take another hot day to complete the job.



The sun did a job on those small hive beetle larva. Cooked them. There is still wax to be recovered from this mess.

Now how do we control something like this from happening again?

1. Check the hive more often especially for small hive beetle larvae in honey comb. Also any stored honey comb with capped honey! Harvested honey should be extracted immediately after harvest.
2. Beetle traps are helpful but not the answer to the issue described here. Screen bottom boards allow small hive beetles access into the hive.
3. Strong hives of bees seem to be the answer. At least they control the hive beetles from laying eggs in comb by harassing the adult beetles and corralling them into areas of the hive away from comb.



4. A beetle tray placed below a screen bottom board.
5. Some claim setting hives in full sun helps. I am not so sure of this because I have bees in both conditions. They do show up in hives in full sun.
6. Reduce space in a hive forcing the bees to be more congested. This allow bees to be able to protect hiding space for beetles.
7. Place a barrier below the entrance of the hive. I use old roofing and heavy plastic. This also accomplishes keeping grass and weeds from growing

in front of the entrance. Just keep in mind that these larvae are hardy and can crawl.

8. Chemicals are available. Check to see if they are approved to use around bees. Check-mite + is the only treatment approved to use in the hive for hive beetles. Drenches to treat the ground are available.

I would like to acknowledge help in working with this hive to Daniel Bowling who is a friend who made taking pictures of this possible.