

THE MARIN BEEK NEWS

Volume 11, Issue 11

November 2019

What You Missed

Our last meeting featured a talk by [Jon Zawislak](#), Apiculture Instructor, University of Arkansas, Division of Agriculture, Cooperative Extension Service. The title of his talk was "Managing Small Hive Beetle."

Small hive beetles (*Aethina tumida*) are an invasive pest of bee hives. They are part of the family nitidullae, which is the sap beetle family. There are over 4500 species of sap beetles worldwide. Small hive beetles (SHB) tend to be about 1/4" in length. They are originally from Southern Africa. They probably came on a ship but it is unknown how they actually got here. They can survive on rotten fruit or sweet cattle feed. They can also go a while without food.

There is also a large hive beetle (*Hypostoma fuliginosus*). It is much larger than SHBs. Both inhabit bee colonies in Africa but are not considered serious pests.

They were originally found in the U.S. in South Carolina in 1996 but not identified. They were found in Florida in 1998. They were thought to be fly maggots so no one reported them until it became a large problem.

They spread quickly; by 2001 they were over most of the eastern U.S., probably spread more quickly by commercial beekeepers and packaged bees.

They are opportunistic pest. Don't kill hives but usually take advantage of weak hives. They are not easily removed. If they are taken from the hive they can fly back. They have a tough shell – hard to sting. SHBs move quickly. Stingless bees in Australia will annoy the beetle until it turtles up and then cover it with propolis.

Bees can tolerate fairly high numbers of adult beetles. SHB populations can explode when conditions are favorable

Life cycle:

What's the Buzz?

Our next meeting will be on Thursday November 7, 2019 at the American Legion Log Cabin, 20 Veterans Place, San Anselmo, CA. starting at 7:30 pm. The meeting will feature presentations by Marin Beekeeper members Anna Taylor, Marina Wright, Mary Nordquist and Bonnie Morse about various hive products.

Upcoming Meetings:

December 5, 2019

Megan Denver and Jorik Phillips, [Hudson Valley Bee Supply](#), [Bees for Development](#), "The Resource Hive" and auction to benefit Bees for Development

January , 2020

[Toni Burnham](#), DC Beekeepers Assn, Regular Bee Culture contributor, "Teaching Bees to Kids"

February 6, 2020

A Panel of local beekeepers, "Beekeeping in Other Countries"

March 5, 2020

[Andony Melathopolous](#), Asst Professor, Pollinator Health Extension, [Department of Horticulture](#), Oregon State University, Topic TBD

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April 2, 2020

[Meghan Milbraith](#), Michigan State University Extension, [Northern Bee Network](#), "Why Bees are the Coolest"

May 7, 2020

[Anne Leonard](#), Associate Professor, University of Reno, "How Flower Rewards Shape Interactions between Bees and Plants"

June 4, 2020

[Wyatt Mangum](#), American Bee Journal columnist, Author *Top-Bar Beekeeping: Wisdom and Pleasure Combined* and *Bee Child*, "History of Bees and Hives in America"

July 2020

Marin County Fair

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- Takes place both inside and outside of the hive.
- Adults invade a bee hive through whatever small openings they can find.
 - Can even walk in through the entrance.
 - Can come up through screened bottom boards.
- Honey bees harass & pursue but beetles will find a place to hide that bees can't reach them.
- Beetles have figured out how to get fed by honey bees, much like drones do.
- More beetles get into the hive throughout the year. They are good at hiding.
 - If bee populations is insufficient, beetles can quickly overwhelm a hive
- Weak or small hives are more susceptible to beetle infestations
 - Swarms
 - Splits
 - Diseased hives
 - Varroa
 - Queenless
- Beetles can quickly mate and deposit eggs. Bees will usually remove eggs and larvae as long as there aren't too many beetles.
- One female beetle can produce over 400 eggs. Within a few generations you could have thousands of larvae.
- They eat lots of different things, larvae, their own dead, anything with protein. When they get on

your honey they poop on it, which has yeast in it which ferments the honey. This is called a slime out.

- They then leave the hive to pupate in the soil. They like moist conditions to pupate.
- In a few weeks they pupate and then the adults disperse to seek new host bee hives. They can go without food for quite some time and are good flyers.
- SHB larvae are about ½ the size of wax moth larvae. They don't destroy the comb but ruin the honey. It becomes unfit for human consumption.

Damaged combs can be recovered:

- Freeze for 72 hrs to kill all stages of SHB.
- Wash thoroughly with water.
- Remove all honey, beetles, yeast etc.
- Allow to dry outside completely.
- Let strong hive repair the comb.

Beetle larvae can be a nutritious snack, particularly for fish. Chickens also love SHB larvae.

Opportunist or predators?

- They do eat larvae and have been known to attack adult bees.
- They also can transmit bacteria as they travel from one hive to another.

Detection:

- Visual
 - Inside the lid
 - Top of inner cover.
 - Outside frames
 - On the bottom board (usually near the back)
 - In supers
- Place cover on the ground in full sun
 - Place super on lid.
 - Beetles will try and get out of the sun.

Odor like decaying oranges indicates fermenting honey, which attracts more adult beetles.

What to do?

- Keep colonies strong and full of bees
- Reduce stress from mites etc.
- Eliminate, re-queen or strengthen weak colonies

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- Small/weak colonies are at greater risk
 - New splits
 - Nuc colonies
 - Mating nucs
- Place hives in sunny locations.
 - Beetles prefer shady, damp locations.
 - Beetles avoid bright sunlight.
 - Often observed on the outside of the hive near dusk.
- Keep equipment in good repair.
- Don't over super.
- Don't create too much empty space.
 - Bees should be able to cover 75% or more of comb.
 - Add new supers without disturbing the whole hive.
 - Remove/consolidate in the fall.
- Don't feed pollen patties more than bees can consume in a few days.
 - Don't throw patties on the ground. Beetles will still consume it on the ground.
 - Keep paper on patty so there isn't a lot of surface exposed.
- If you trap pollen, empty the traps every few days. Otherwise it is an attractant to SHB.
 - Freeze the pollen immediately to kill whatever might be in the protein.
- Maintain a tidy apiary
 - Don't toss burr comb on the ground
- Maintain a clean honey house
 - If you find SHB in the honey house put a low watt bulb close to the ground over a pan of soapy water. Adults are attracted to the light.
- Bee escapes are great for separating the bees from the SHB.
- Extract honey as soon as you remove it or else store it <40% humidity.
- Don't leave frames out for bees to clean up.
- Soapy water is best way to kill insects
- Remove dead-outs immediately. SHB will easily find them. Freeze or fumigate, clean up right away. Capped honey can be left for bees to rob.

Use caution when combining colonies or exchanging comb and woodenware. Beetles and eggs can be transferred. Prevent prison breaks; manipulating hives releases SHB from confinement. The bees must then round up the SHBs. Have a purpose when you go into your hive.

Control adult SHB population.

- No silver bullet that gets rid of them all. Anything you can do to get rid of some is a good thing.
- Use mechanical traps
 - Vegetable oil good in traps – but goes rancid
 - Mineral oil better but more expensive
 - Tray traps need to be kept clean – bees drop stuff into it.
- There are a variety of traps available
 - Sonny-mel trap
 - Guardian bee hive entrance trap
 - Beetle jail entrance trap
 - County Rubes SHB trap
 - Beetle jail bottom board rear trap
 - Beetle baffle
 - Beetle Jail - Baitable
 - Beetle bee gone towels – Swiffer sweeper pads (traps the beetles in the towels)
 - Greenbeehives.com offers instructions to make your own bottom board trap.

Beetle bait:

1 c water

¼ c apple cider vinegar

¼ c sugar

Chopped peel of ripe banana allow to ferment 1-2 days

- If a larval infestation is discovered, the colony was probably already in trouble.
 - Salvage supers (freeze).
 - Move hives away or treat soil.

SHB larvae are vulnerable. You can kill the larvae and pupae in the soil using a soil treatment.

- Soil can be treated with entomopathogenic nematodes (limited success depending on soil type).
 - Purchase and water into soil - Southeasterninsectaries.com
 - Steinernema spp
 - Heterorhabditis spp
- Nematodes enter host.
- Release bacteria that kill the host.
- Nematodes feed & reproduce.
- Offspring persist and seek new host
- DIY nematode rearing -

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Slideplayer.com/slides/6223032

You can also treat the soil with a permethrin drench – gardstar

- Prevents adults from emerging.
- You need to remove sources of water.
- Mow down vegetation.
- Mix and apply to ground 18 to 24" around hive.
- Permethrin is toxic and corrosive (be careful when applying).
- Poisonous to honey bees.

Treating the soil doesn't prevent SHB invasion. Adult beetles can disperse several miles to seek new host colonies.

Treat only if you see high number of larvae in hive.

In hive pesticides are of limited use for SHB. Checkmite is only chemical approved for treating SHB.

- The beetles are here to stay.
- It's not the end of the world
- Most infestations are manageable
- Good beekeeping practice
- Control adult SHB population

You can find more information about SHB and beekeeping on the University of Arkansas Extension website at uaex.edu/bees. For the paper about managing SHB google uaex FSA7075.

Hive Tips

By Bonnie Morse, [Bonnie Bee & Company](#)

Reducing Hive Size

Temps are dropping and your beekeeping season is winding down. Time to start thinking about winter preparations, if you haven't already (though the bees have been getting ready for months). Remove unused space and unneeded honey. In our area, bees need about 30 lbs. of honey per colony going into the winter. For smaller colonies, a guide would be to have about 50% food / 50% brood.

If you have a box on top of the hive that has no (or very little) built out comb on the frames, it needs to come off for winter. It is highly unlikely the bees will be building comb up there this season and that is a lot of dead air space where heat generated by the cluster will escape to.

Mites!

Fall is a time for increasing problems with mites in colonies. Bee populations are reducing for winter and

mite numbers are going up in colonies with little mite resistance or tolerance. This can lead to crashing colonies.

Ideally, you started checking your levels in August...if not sooner. But that doesn't mean you are out of the woods, even if you treated your colony or they had a low infestation %. There is a high hive density in some areas of the county (particularly in high population areas along the 101 corridor) and the problems of one hive can quickly become the problems of another through drifting and robbing.

Where are all the drones?

Drones are few and far between in most colonies right now. Some resourceful colonies still have some drones around – and are even continue to raise drone – but they have all but disappeared in others.

What does this mean to you? Well, if you have a colony that supercedes the queen this fall, the new queen may have difficulty mating, or getting well mated. It also means you should be particularly careful during hive inspections as a colony may have a more difficult time replacing a killed or injured queen despite weather that would make mating flights possible.



Getting Ready for Winter

Bee Classes

Beauty from the Hive

(Saturday, November 9, 9:00am – 12:00pm, \$85, includes materials fee)

Using the recipes from Janice Cox's books and ingredients from the hive, we will make: 1) Bath bombs, 2) Bath salts, 3) Hand cream, 4) Lip balm. You will get to take home your creations.

Location: The Fairfax Backyard Farmer, 135 Bolinas Rd, Fairfax

Register through [The Fairfax Backyard Farmer](#).

Backyard Beekeeping (Saturday, November 23, 9:00am – 12:00pm, \$60.)

Considering becoming a beekeeper? Take the first step by learning about this fascinating and important pollinator. This is a great time of year for new beekeepers to start planning so equipment is ready and bees are ordered in time for the 2020 season. In this class, you'll learn about the roles of the queen, workers and drones within a colony and how they interact with seasonal cycles. Learn about basic considerations you'll need to take into account before jumping into this exciting new hobby including where to place your hive, equipment options and sources, bee sources, and time required.

Location: The Fairfax Backyard Farmer, 135 Bolinas Rd, Fairfax

Register through [The Fairfax Backyard Farmer](#).

Limited to 12 people.

Online workshops in November with Michael Thiele.

Info at: <https://www.apisarborea.com/events/>

December 5th Meeting:

Megan Denver and Jorik Phillips from Hudson Valley Bees will be discussing "The Resource Hive". There will be an auction to benefit the outstanding work of Bees for Development. 'Tis the season to be generous, so pick up some treasures (an 1889 copy of Langstroth's book and an antique Swiss smoker are among the offerings) and help support the work of this non-profit which helps lift people out of poverty in countries including Ethiopia, Uganda, Trinidad and more. If you have any items or services to donate to the fundraiser, please contact Bonnie (bonniemorse10@gmail.com) or Marina (marinamy53@gmail.com) by December 1st!

Bring a holiday treat to share!

Thanks a Lot

Since it is the Thanksgiving time of year, I would like to acknowledge some of the people who help make the newsletter better.

Thanks to the contributors including Bonnie Morse for Hive Tips and other articles throughout the year, Marina Wright for keeping us informed about what is happening in the library, and Dave Peterson for writing about goings on from time to time.

I also want to thank my wife, Karen, who proofreads the newsletter every month, making me look like a much better writer than I actually am.

Rob Tysinger