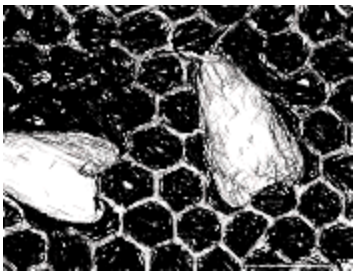
Stahlman beekeeping notes for 2021

Issue # 25 June issues – Another Summer Pest (Wax Moth)

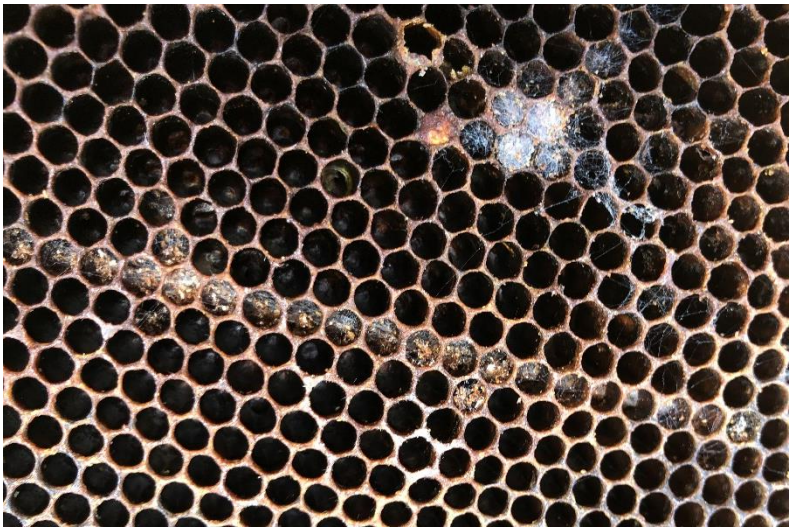
Wax moth damage causes beekeeper a great deal of loss in the value of equipment and destruction of drawn comb. Many insects live in a hive of honey bees. It is common to see cockroaches and ants in a bee hive. But often beetles and spiders make a home in a hive and there are many others less noticeable. While many of the insect pests use the hive as a resting place, wax moth attack stored equipment and weak hives of honey bees.

Warm weather is ideal for wax moth to grow and reproduce. They are called wax moth but I have found that they will ignore new bees wax foundation focusing on dark brood comb.



This picture is about the actual size of the greater wax moth. The female moth deposits her eggs in small crevices in hive parts. According to the literature I checked, the eggs hatch faster 3 to 5 days in warmer temperatures and are delayed by cold temperatures. They are especially a problem from now thru late summer and a warm fall.

If a frame with comb shows any of the following evidence of wax moth, it will not take them long (two to three weeks) to destroy the comb and cocoons impressions will be left in all woodenware harboring the cocoons.



The female wax moth enters a hive and lays eggs usually at night.

One might see a wax moth in the hive as shown in the introduction. Female wax moths lay eggs. Once the egg hatches it feeds on honey and burrows into pollen or cell walls and migrates to the midrib of the comb. There the wax moth larvae becomes

very active. The amount of destruction depends on several factors. One is temperature. The other is the absence of light.

I like the quote from "Beekeeping" by John E. Eckert and Frank R. Shaw: "It has been aptly said that the wax moth never causes the death of a colony but is merely the pall bearer at its funeral."

Dead or weak hives are a target. Stored comb is also a target. There are two species of the moth (*Achroia grisella Fabr*.) and (*Galleria mellonella L.).* My experience has always been with the Greater Wax moth named *Galleria mellonella L.* – covering beekeeping in the north and the south. There is no doubt it does its dirty work when the temperatures are shirt sleave comfortable or hotter.

As you may know I was a county bee inspector in Ohio for a period of time. I saw some pretty bad situations with both hives that were weak and stored comb with moth damage. I would like to share just one of the stories about stored comb.

I am not sure how many of you want to store comb honey over winter in your basement, I can tell you how not to do it! Do not put your comb honey super into a black plastic garbage bags and store it near the furnace in the basement. Unknowing that wax moth eggs are almost everywhere in a hive – even stronger hives – the beekeeper placed the super with some of what he thought was some of the finest comb honey he ever produced in a black plastic bag and sealed it. When he went to the basement to get the comb honey ready for Christmas gifts, he found a mess. Moth larva, cocoons and adult wax moths and their webbing had destroyed all that he had hoped would be excellent gifts. A LESSON LEARNED THE HARD WAY!

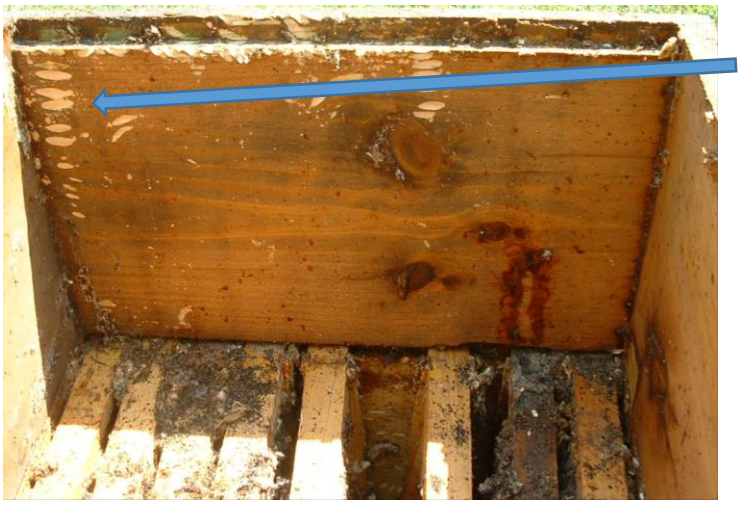
Many honey producers use queen excluders with honey supers. One important reason: The bees draw wax on the foundation without brood being present. Thus, the brood free comb and frames are not attractive to the wax moth. This is called virgin comb and it has been learned that wax moths can not live on pure beeswax. Comb stored wet – comb extracted and still having honey in it could be attractive to wax moth.

Wax moth feed on the combs for the protein contained in the pollen, larval skins, honey and other materials in the comb.

Wax worms can grow to be about an inch long and make great fish bait. They also can eat thru comb leaving behind a webbing. Their growth depends on quality of food and extends

over a period of many weeks. When fully grown the larva gnaw out an oval depression before spinning a dense, white cocoon.

This depression leaves a scar on the wood frames and wood hive body. Plastic equipment is not affected because the larva cannot gnaw plastic. But they will fill empty spaces found in plastic equipment.



The gnawed depressions can easily be seen on this hive body.

This is a cosmetic issue and the equipment can be used without fear that it will have some effect on bees.

I prefer to use black plastic double waxed foundation when I buy foundation. I see so much in the blogs about not ever buying plastic foundation. The problem is not the plastic. Bees will build on it!

If wax moth take over a hive with plastic foundation, the frames can be restored to use by a good cleaning – power washing.

If the midrib is wax, forget it. The wood frame may be salvaged and maybe one can place the frame in a solar wax melter to get some beeswax still left on the frame. This kind of damage can happen in a weak hive or in stored comb. It can make a valued drawn comb frame worthless.

Speaking of plastic:

I am hooked on plastic foundation sheets and if you have decided against it, that is okay. Yes, I like the wood frames much better than the plastic frames. Plastic gets brittle with age and cold.

One caution--plastic warps in hot heat. Do not place plastic foundation in a solar wax melter.

This is the result of placing a medium frame in a solar wax melter. The plastic also melts.

The best answer I have found is washing plastic frames with a power washer. Just make sure you place the frame in a solid support before you apply water pressure.

The plastic foundation can then be rewaxed if one has saved wax from burr comb or honey cappings.

Coating plastic foundation with bees wax.

Before any attempt to coat foundation with hot bees wax, one should make sure the operation is carried out in a safe location. (Not the kitchen)

First, wax must be melted and remain heated in a liquid state. A temperature above 148 degrees F. is required. One must not let the wax reach a boiling point. Avoid burns caused by hot wax. Arm coverings are important as well as the possibility that if tipped or spilled, hot wax can cause serious burn injuries. More than one house has burned to the ground by someone melting bees wax on the kitchen stove.

Wax fires are hard to put out!

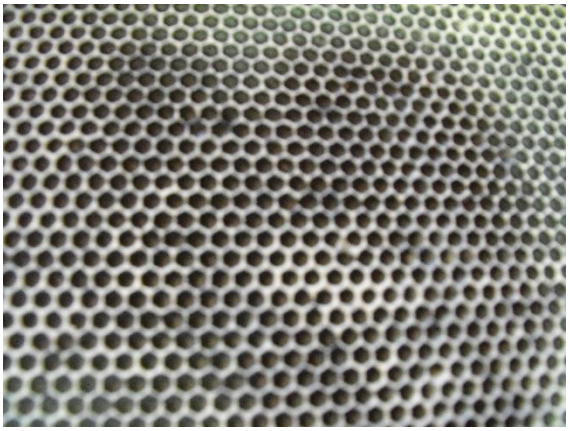
Second, a method must be determined to get the wax from the pot to the foundation. A good covering on a work table is almost mandatory. I like the simple method of rolling hot wax on the plastic foundation sheet. The paint roller used here must be dipped in the pot, moved to the flat sheet of plastic foundation, and then rolled briskly back and forth until the foundation is well waxed.

Wax can be seen being applied to the plastic foundation in this photo.

When the top side is finished, the roller has generally cooled and must be again dipped into hot wax.

The plastic sheet is flipped so the bottom side can be waxed.

If one has everything set up well before hand the operation goes fast.



The finished sheet is ready to be installed in a frame and given to the bees. I have found that the bees will quickly draw comb again on this old plastic foundation. If the foundation is given to the bees without being waxed, the bees seem to ignore it completely.

I will have photos later this summer to share the way the bees draw out this rewaxed sheet of foundation. From past experience, one will not notice the difference between old and new plastic foundation unless you use old wooden frames again.

Next week we will look at another early summer problem – too many bees!