

Stahlman beekeeping notes for 2021

Issue # 40 Stress on honey bees & Absconding bees

So far this year I have concentrated on building my hives into strong hives for winter survival. I have left a good amount of honey on the hives for the bees to use this winter. I am treating for mites.

What else should I do to help my bees survive?

I am now looking at environmental conditions that affect my bees. Here are a few of the issues we as beekeepers need to be concerned with: All can effect the stress factor facing a hive of bees.

- Location
- Wind
- Dampness
- Predators
- Cold & feeding

Location

Most of this is beekeeping 101. In some cases, the beekeeper cannot control environmental conditions. But this article will discuss a few that the beekeeper can control.



I have kept bees for many years. When I look for locations, I take into account where the sun comes up in the morning and the direction of the prevailing wind.

When I work bees I like to have some shade but I also realize that bees that get direct sun seem to be able to combat Varroa mites better than hives in shade. They also go to work earlier in the morning! One other factor I consider important is that the bees should not be visible from a road.

Another factor is access to the bees so I don't get stuck getting to them. I do drive my truck right up to the bees.

The locations I select are near water, in areas where the possibility of good harvests can be found by the bees, and high ground. Flooding in bee yards is bad news for the bees and the beekeeper.

Beekeepers often struggle with finding a place on their property in urban areas to place bees. Most of my friends do not have the advantage of moving bees to areas like I select. In fact, if you are keeping a few hives, your own backyard will do. My home has a HOA and we are allowed to keep bees. I have placed my hives so they face toward the morning sun. Don't be worried if your hive entrance does not face the morning sun – the bees will be okay as long as they have a flight path from the hive. The biggest problem one faces keeping bees in urban areas are neighbors. If you have good neighbors be thankful and we should always be considerate beekeepers.

I still advise beekeepers to make hives less noticeable. Color of hives make no difference to honey bees. White painted hives are easy to spot. Gray paint is less noticeable.



The best example of this are the bees located in the front yard of a beekeeper I mentor. This is Cary who studied the situation to a great extent. I am sharing his solution. The location he selected has a number of advantages. Note the barrier of trees behind the hives. But maybe you are overlooking something else that he did.

These hives are painted on three sides with gray paint and the front of the hives facing the front of the house are painted white. He enjoys looking out his front window at white hives. Neighbors drive by and don't see them.

Wind Breaks

In the three pictures I selected for this article, one thing stands out – the bees are sheltered from the prevailing winds. Wind breaks have been recognized by beekeepers as being a good factor in protecting bees. This is especially true during the winter (cold) season.



Note the wind break of straw bales behind this hive. Fences, buildings, trees and shrubs all help block strong winds and hide bee hives .

Remember Langstroth's advice: The hive entrance should be well protected from piercing wind!

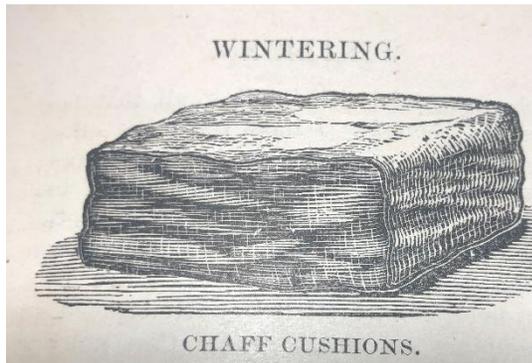
Adding entrance reducers are in order before cold weather sets in! If you have screened bottom boards, it is time to insert the protective material (usually a plastic sheet that fits into a slot under the screen) to stop drafts from going up into the brood chamber.

Dampness

Honey bees need dry quarters in which to live. Upper entrances are good – The inner cover with an escape entrance is helpful. In the past some beekeepers especially those in the northern states, drilled holes in supers above the brood chamber. It allowed moisture to escape from the hive and served as an upper entrance for a hive covered in snow.

Important management step -- Slope bottom boards slightly to allow water and moisture to drain from a hive.

Some beekeepers go way back into beekeeping lore by adding heat and moisture barriers above the top super on a hive. If we go back to 1886, bee books talk about chaff cushions. I am not sure how many beekeepers go out to collect chaff but it is available if one wants to go to the trouble. Chaff was the husks of corn in most cases. Beekeepers have substituted leaves, peanut pods, cotton, and now Styrofoam in place of corn husks. Any thing that will absorb moisture and retain heat from the cluster of bees in the hive.



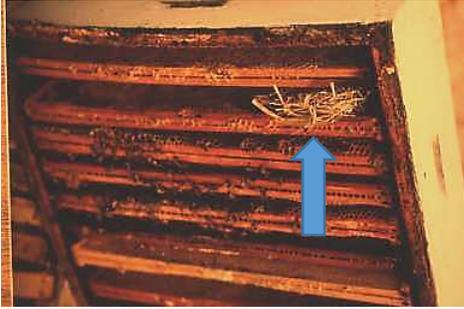
A.I. Root advised his readers to use burlap for the cushion case, fill it with chaff loosely – 6 inches of chaff over the cluster may be better than a foot or more. The cushions should at all times be perfectly protected from wet or dampness.

Let me quote him, "I pushed my hand down into the chaff; and long before it reached the bees, the warmth was very apparent; as I touch the cloth that covered the combs I made the remark that I must have touched the cluster; but as I slid my hand to the other end of the hive and then over and around the sides, I was obliged to admit that the cluster either filled 8 frames, or that the chaff had the astonishing property of so confining the heat that the whole hive was warmed to a temperature that reminded one of handling a setting hen."

I am adapting top feeders this winter to be something like a hive cushion by filling them with chaff. I will see if it works. Next Spring, I will just dump the chaff out of the feeders and use them the way they were intended. A top feeder should work very well – they will provide for upper ventilation over the clusters and provide the blanket that beekeepers of long ago used to get hives thru the winter. I might even try using the division board feeders to reduce air space within the hive by filling them with chaff. I am thinking of shredding old newspaper as my chaff.

Predators

Mice



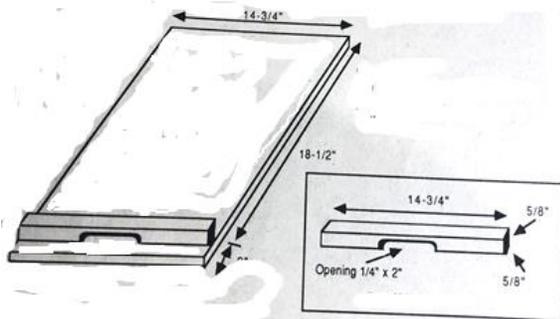
During winter mice seek shelter in bee hives. This is a nest. Mice are not bothered by bees because the mice build a nest that honey bees can not penetrate. In a very short period of time this nest produces this:



Seven babies to grow up and spread the damage.

Not near as much damage as bears.

One can use wire screen over the entrance or an entrance reducer to keep mice out of the hive. The wire screen mesh of $\frac{1}{4}$ inch is adequate. It is available in hardware stores.



Here is an idea for an entrance reducer and bottom screen draft closer. This is easy to build and dimensions shown are for a 10 frame hive.

I have used these successfully and one will save time and effort in the spring when you want a clean bottom board. Masonite is used for the slide ($\frac{1}{8}$ " material) or an even thinner material

such as Plexiglas would work. The reducer is designed for a $\frac{3}{4}$ " entrance. It is nailed, glued or stapled to the slide. I make a lot of my own equipment and this is one item very easy to build.

Bears

Even a bear fence does not always protect a hive of bees. It takes a serious bear fence before a bear can be stopped.



Photos provided by David D. Jones of Hillsdale, Va.

Is there anything that is bear proof? How about a double electric fence?

If you want to build a bear fence don't go cheap!

Cost: Cheap: Electric bear & nuisance animal fence \$166.99. Most likely a waste of money!

Better: \$249.99 Electric perimeter fence. Sooner or later the bears will get thru it.

Three or more fences about two foot apart around the hives. (Electrified)! More effort to build and more costly.

A double fence plus bees confined to an area 8 x 8 on a concrete pad also protected by an electric fence was required to prevent bears in this beekeepers bee yard. The beekeeper lost hives two years in a row and decided not again. The cost was more than the cost of bees and equipment to repair the damage. Note that he even had wind protection around his bee hives, but the bear carried the hives off and scattered all the frames in them. Only thing to do is gather up what could be repaired and start over!

My friend, Billy Engle, had bees in Northern Georgia. He mentioned that he found a way to discourage them – put strips of bacon on the exposed charged wire connected to a good charger.

I also knew a beekeeper in Georgia who bought an old school bus to hold his bee hives during sourwood flows.

That did work out well – he cut port holes into the side of the bus. He welded metal to metal around the entrance openings with sharp prongs. Bees could fly from the entrances but bears trying to claw at the openings were punished. By the way, the windows of the bus were covered to preserve the darkness inside – bees loose inside the bus tended to fly toward the windows rather than back to the hives.

Cold and Feeding issues

Bees die from cold only when the bee cluster can not maintain sufficient heat. A large cluster of bees can survive a really long cold spell. I again will go back to some of the early comments made by A.I. Root.

In his autobiography, Root describes building a house-apiary to help bees overwinter. Maybe you have seen pictures of it. His greatest mistake was thinking that keeping the building warm would lead to greater survival of the bees. Just the opposite happened.

Can you guess what the center box with "H" stands for? Try Heat!

This house could hold 18 hives on each level.

Most of them died! Why?

ten may...
 A represents one of the heavy outer doors, and B, the light door with glass sash; these doors are the same, on both the east and west sides of the building. G is the shelf that runs entirely around the room, on which the hives are placed. It is about 3½ feet from the floor, and should be about 18 inch-

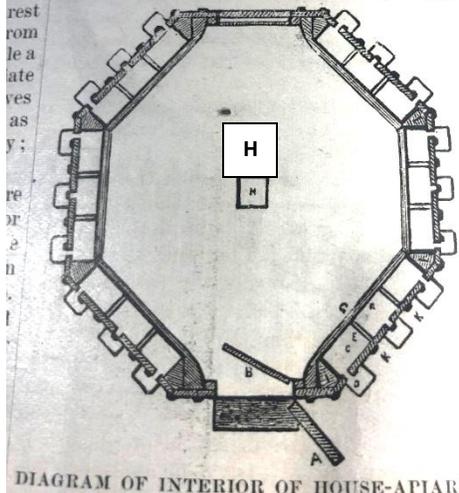


DIAGRAM OF INTERIOR OF HOUSE-APIARY.

The interior of the building was warmer than the outside air! The bees being warm inside left to fly outside.

Many bees took to the air from the hive entrances.

The hives lost bee population because bees hit the cold air, fell to the ground and died.

Bees cluster when temperatures begin to drop below 58 °F. The cluster gets tighter to conserve heat as temperatures continue to fall.

They do not heat the interior of a hive. There is heat lost from the cluster which warms some of the air around the cluster and the area above the cluster. It is only in those areas that bees can move to get honey stores. The bee cluster heat allows movement within the cluster and the temperature of a cluster when the queen begins to lay

eggs increases to 92° F or close to it.

May I also add in A.I. Roots words, "I am now going to have for my next hobby, hives crammed full of stores, and no tinkering during cool or cold weather; no dividing until natural swarming commences, and, if honey is the object, perhaps no dividing or swarming at all, if it can be avoided."

And then A. I. Root says, "at present I would give up feeding **if every colony is well supplied with honey stores!**"

And remember, earlier, I quoted Richard Taylor (issue # 39) "Sugar syrup is not the equal of honey." Bee Talk Page 570 Gleanings in Bee Culture October 1987.

To me the greatest issue for honey bee survival is not only the treatment for Varroa mites but the lack of nutrition from natural sources of nectar and pollen. It is a wise decision to save a few frames of honey for each hive. One could easily store frames of honey in a freezer to give back to the bees before real cold sets in. I set extra honey next to the brood cluster or above the brood cluster so bees can easily get it. That honey could be the difference between a good strong hive or a hive lacking good strong bee populations in early spring.

Keeping bees in buildings:

Some bees are held over in Canada and in parts of northern U.S. in buildings especially built to allow for good ventilation, dim red lights or no light, and a constant temperature around 40 °F. The biggest problem of overwintering in a building is overheating. Ah! A.I. Root discovered that 150 years ago.

Absconding

A number of beekeepers are reporting that the bees just left their hive – gone and evidently with little notice to the beekeeper. These reports generally occur in the early spring and late summer.

It is a mystery to explain why bees just up and abandon their hive. This is something that happens with honey bees. Reports of absconding goes back years.

Bees absconding a hive is different than a hive of bees swarming.

Swarms usually leave brood and a group of queen cells behind in the hive. The hive loses its queen and about one half of its bee population. However, the hive will recover and continue to rebuild almost as if nothing has really happened. Beekeepers examining a hive that swarmed will note a reduction in bee population, the presence of swarm cells, and a break in the brood cycle.

A hive that deserts its hive completely is what we refer to as absconding! One may find some capped brood present – it is unusual for a hive to leave eggs and larva.

The hive may have "been" queen right or queen-less. But characteristically, the hive will have no bees or just a few bees. It will have no honey stores. A package of bees that leave a hive a day or two after being put into the hive will leave a caged queen behind. But the bees are gone!

The abandoned hive is a loss! If it happens in late summer, the equipment can be cleaned up and used on other hives or stored for use the following season. Never-the-less the bees are gone.

It is well understood that Africanized bees often abscond – completely leave the nest. This is true due to the climate conditions in Africa where bees are known to migrate as a response to seasonal conditions such as loss of food and environmental conditions.

The European honey bee does abscond but is not as prolific as Africanized bees.

Sometimes we are left scratching our head why the bees up and left! But, there are some known reasons for honey bees leaving a hive.

If a hive absconds, there is generally a reason for it even though the beekeeper is completely unaware of the reason.

Normally honey bees with brood in a hive will remain in the nest. It is known that if a hive of bees is set on fire, the bees will remain and fly thru the flames as the hive is destroyed by fire. Honey bees like most insects fly to light.

One may ask "Why would honey bees fly to their death rather than abscond?" I don't have an answer to that question? Honey bees are remarkable creatures. I happened to be aware of studies done at Ohio State University bee lab on smart bees. I cannot remember that I ever heard of smart bees before. But I know that bees can be trained to do a number of things and they can be depended upon to react in a very predictable way to certain stimuli.

The reasons given for bee absconding are as follows:

- Lack of food/dearth (lack of water and flowering plants)
- Repeated nest disturbances – predators
- Often observed with no flight activity and robbing of hives.
- Other reasons might have to do with the apparent lack of room for expanding the nest == also a contributing factor with swarming.
- Hives that are weak and discouraged –lack food and are facing attack.
- A package of bees installed will depart leaving the caged queen behind. Often a package is shook from bees that the queen is accidently put into the package. It is not uncommon for them to swarm from the new hive leaving the queen that came with the package unattended to.
- Mis-management such as a hive becoming too hot or too humid. In some regions of the country bees are placed under shade structures to avoid the high heat.
- Ants and other pest causing unrest within the hive.
- Queen is lost and bees are unable to raise a new queen.
- A hive of bees without brood will depart—good example is making up nucs without providing a brood frame to hold the bees.

In many cases it is a mystery of why bees leave a hive - Not as a swarm – but abandon the dwelling. They often drift to other adjoining hives or as the case with Africanized honey bees, migrate to better locations with food sources.

To quote A.I. Root – "Bees desert their hives because they are short of stores than for any other cause."