

# Stahlman beekeeping notes for 2021

## Planning for 2021 – Wintering Principles

## Issue # 2

May I say, welcome to those added to the mail list from this past week! Each request is handled by me and any ideas you have to share will be appreciated. Since this newsletter is now going out to beekeepers located in regions from R.I to Michigan to Mississippi and Georgia, I will adapt material to fit various areas. I understand that my readers are mostly hobby beekeepers and when I buy my powder sugar in 50 pound bags, smaller sizes are available for the person with one or two hives.

Bear with me as I share an event in my life that I often compare with keeping bees.

In the 1960's my beekeeping was interrupted by college, marriage, and the Cuban Missile Crisis. I was trained to be a radiological officer in the detection of radiation if an atomic attack came from Russians firing missiles into the U.S. (That was a scary time) I spent two summers learning a lot of things about myself. I also had the opportunity to learn how to fly an airplane – (my instructors were former W.W.II pilots) one instructor was a B-25 pilot and another a hot shot guy that had a different approach to flying than did my B-25 pilot.

(I was working for a private license not military). The goal was to fly an airplane by myself! I am sure that experience taught me that what happens is not always what is in the book. There is something called taking your first "Solo" flight. I was told that what goes up comes down! That meant I was on my own when that airplane left the ground. It was not only necessary to get back safely, but they were concerned about their airplane as well. (I thought maybe the airplane was more important than I was.)

There is one story in that experience I want to share with you. Hopefully, it will be an interesting story about a serious problem with a bit of humor thrown in! (It might have everything to do with beekeeping!) I have cleaned up the language.

In our group was a "Jump Master 82<sup>nd</sup> Airborne Division". Just like in beekeeping, everyone has a war story. His story:

A group of soldiers had gone thru the basic jump school to parachute from an airplane. The training consisted of classroom and practice jumps from a platform. The time finally arrived for the students to make their first jump from an airplane. They waited (standing hooked to a static line) as their turn came to jump from the plane. They could see what happens to a person that freezes at the door. The jump master had a bar just behind the door and students were taught to go immediately when they

reach the door. The jump master grabbed the bar and with both feet - helped anyone jump out the door that might take a second too long.

As a guy was leaving the plane, he remembered the training indicated that he should count to three, pull the rip cord to open the chute, and a truck would be waiting to pick him up. And if the chute did not open, there was a reserve cord to pull! Well, he did as instructed – counted to three and pulled the rip cord. Nothing happened! No problem – he pulled the reserve cord! (It did not open the chute). With his mind racing he thought “the D\_ \_ \_ truck won’t be there either!”

I think beekeeping is something like that! Some things just don’t go the way they should and every beekeeper has at one time or other experienced something like that guy making his first jump.

Books, classes and beekeeping information sometimes fail to paint a clear picture for what is to come.

Here in North Carolina – This area has mild winters but winters are winters no matter where you live. If you live in southern Georgia, you will have bees developing several weeks before my bees reach the same stage of development. It is interesting that the weather in the mountain areas of southern states is more in tune with weather in Ohio.

Winter Beekeeping -- I just finished looking at a few hives this week in an out yard east of Wake Forest. (I call any place I keep bees not kept at home “an out yard”).

This picture was taken this week and shows a typical winter cluster. I removed the inner cover with the temperature in the mid 30° range. No bees were flying and the hive was open for no more than a minute. Just enough time to take this picture. In fact, the bees were tightly packed in the winter cluster and a few ventured to start moving from the cluster because of my actions.



But I was able to make a few observations of the bees in this hive in that short period of time –

This may look like a small cluster of bees but when the weather is cold, the bees shrink the size of the winter cluster. As temperatures warm, the cluster is larger and eventually it may appear that all the frames are covered with bees.

It is important to know the honey bees in a nest like this have honey stores close to the cluster during cold weather. I have seen clusters like this dead because they could not travel the one or two inches to reach food stores in outside frames.

We have a serious problem with small hive beetles. I use beetle jails in my hives to control SHB and evidently this trap is working. If not, one would see beetles on

the top bars running around among the bees. Evidently small hive beetles find heat above a cluster a good place to survive. I will describe the biology of the cluster in next week's article.

The check of the hive also indicated that the hive was alive and evidently without pulling frames, it was important to make sure I should place a medium super above this cluster to allow room for bee populations to expand. I rather not use liquid feed during the winter season. Moisture can be a big problem within the hive during winter like weather.

I feed dry patties to my bees when they need winter food. Some beekeeper use fondant or candy boards. The important point I want to make is that without food - bees die! By lifting the back of this hive using the hand hold, I was able to say it had good weight. However, I want to move honey frames outside this cluster up next to the cluster so they can reach food easily. Weather temperatures will vary even during a single week. Thus, I turn to the weather.com site to check to see when I will be able to open the hive so I don't do damage to the bees.

Just as soon as the day time temperatures are in the 60° F range and bees are observed flying and returning with pollen on their legs, I will begin opening my hives to inspect frames:

I will be looking for evidence that the queen is laying eggs – If I see eggs, larvae, and capped brood (newly capped) I will assume the queen is okay. If I see small hive beetles, I will make sure hives have beetle traps installed. I will also check to see if drones or drone brood is present. That is a pretty good sign that the bees are doing okay. It is a bit too early to worry about swarming issues.

I am always concerned with a hives health. When hive populations grow, I will do a simple sugar powder shake to see if I have Varroa mites or to help determine what level they are at. There will be more on how to inspect for Varroa mites in a later issue.

It is still too early to make up splits without buying queens (if you want to make a split without a queen on hand at this time, the effort might be a waste of time because virgin queens without a drone population to mate will results in failure.

It is also a good idea to leave mouse guards (entrance reducers) in place until the weather becomes more settled.

I am asked how I keep bees – The answer is: Okay! – Each of us has the privilege to be different. I would suggest that if you try anything I suggest do it on a small scale with a hive or two and find out if it works for you, then expand on that experience. The lesson I have learned keeping bees is: Go slow when thinking about changing management styles. It is always good to try experimentation in your management techniques to determine what works for you.

I am among a group that feel single deep hives are best for overwintering hives of bees even in the north. In fact, some even consider overwintering bees in nucleus hives. I have done that in Ohio with some limited success. I am not in the group that look at hives prepared in the fall as okay until I get a chance to check them out in the spring. Even in winter, I am checking hives to see if they are flying on warm days and often check to make sure they are

not being robbed out. If I find a failing hive, I work at trying to save it. (Check out next weeks article)

Single deep hives for over wintering - may not be for everyone! At one time I moved bees from Ohio to Georgia during the fall. More single deep hives can be moved on a load than double's or story and half hives.) But I learned that bees in single deep hives seemed to survive winter better than double deep hives. It does require more work to manage bees in single deep hives.

I generally move bees to single deep hive bodies as soon as the brood area in a hive is reduced to three or four frames. I keep bees in 10 frame Langstroth hives which allows me to use 9 frames rather than 10 frames. Queens usually begin to reduce egg laying by October in the north and a bit later here in North Carolina. In some areas of the country, queens can be found laying eggs into December.

I move the brood frames to the middle of the brood box and place all frames with honey stores next to brood frames. This means that I need at least five good frames of honey stores for each hive. When I can manage my bees I will move frames from the outside of the box next to the winter cluster of bees.

For feeding bees during the winter season, I make up my own sugar patties. I make up pancake size patties out of powder sugar and corn syrup. I make the patties at one time and store them in 5 gallon buckets. The proper mix is to create a dough like consistency as dry as possible, yet it will form a ball and can be flattened out with a rolling pin without falling apart. If too sticky, it will melt down on the bees – making for a real mess and it would be harmful to the bees below. Important note: If one uses honey in place of corn syrup, any unknown source of honey could carry AFB spores and since feeding usually involves feeding a number of hives with the same batch of sugar patties, a disease such as AFB could be spread to a large number of colonies. **That would be the worst learning experience one could ever have!**

I add a medium hive body with drawn comb and honey as the weather begins to warm. My expectation is that by late January or February, these hives will have big populations of bees. I do use top feeders to add liquid sugar syrup when the weather warms - February to late March and April to encourage brood build up. I will be sharing pictures of work in the bee yard this year. If this method appeals to you, I have learned from experience to try new ideas slowly.

Although it was good for me to see this winter cluster, it is not a good idea to open a hive during really cold weather. When I check my bees during the winter season, I do not pull frames to check for queens. I check hive weight by lifting the hive slightly to make sure it has what I consider enough weight in honey stores to survive and if I want to peek a look, the hive cover is removed to see if the bees are around the inner cover hole. The hive is never open for more than a minute. Some bees will stir and move slightly. If open for a longer period, the winter nest is disturbed with the possibility to doing harm.

From a short examination like this, I know the bees are alive, the cluster is tight and looks good, and the hive has enough food stores for the next several weeks. When I see a hive with very small winter clusters, it doesn't mean they are going to die, but I mark those hives to be the first to be checked on the next visit to the bee yard. Day temperatures must be in the 60 degree range with the bees moving about the hive and not clustered for me to think about pulling a frame to check for brood and a queen. If they are still in a cluster, I wait for warmer weather.

**This same pattern occurs only a month later in Ohio and later in Michigan. Anyone keeping bees must be aware of climate conditions where the bees are kept. We see early swarms in late February and early March in North Carolina. Those in northern states may see them in late March, April and May.**

**One of the early lessons I learned is that some hives die every year no matter what is done to keep them alive. Bees are much easier to replace than bee equipment and if a colony looks like this early in January, it has a great chance of making it to the spring splitting season.**

**I grew up in northwestern Ohio where we had temperatures that varied from below zero to a rare day when the temperature might reach 70 degrees F. I have seen snow over my mail box and roads completely closed because they were not plowed. That might sound like a terrible situation for the bees but let me explain that deep snow insulates the hives from bitter wind and cold. Bee hives require upper entrances for moisture to escape from a hive in those conditions and for bees to take rare cleansing flights.**

**Let's take a look at the way honey bees react to climatic conditions during the winter season.**

**Honey bees do not hibernate. They have the ability to generate heat and can survive the severest winters – I have talked to and visited beekeepers in Dawson City, Yukon Terr., in Canada. Temperatures can get down to -50 degrees during the coldest winter season (a long winter season). Yet honey bees do survive in managed hives.**

## **Winter beekeeping rules for survival are:**

**# 1 Prepare for winter in late summer!** We need to give the colony of bees the best chance of living in comfort and survival to rigors of winter. We as beekeepers must preserve the internal heat created by honey bees by every means in our power! Those Yukon beekeepers bury their hives in snow or move them into shelters that protect them from the harsh weather conditions. They have long winters and short summer seasons but their bees do survive as long as bees have protection from the weather and enough food.

Honey bees that swarm and build a nest on the limbs of a tree do not survive winter conditions in the cold regions of the country. One can say that honey bees only keep the cluster warm but when they are exposed to the elements of wind, rain and cold, they do not survive.

**#2 Ventilation is important.** Bees cannot live in “hermetically sealed hives!” Honey bees bathed in moisture contained in a hive will die. Moisture within the hive must be vented out by some means or other. Most beekeepers use an inner cover with a vent hole in the center of the cover. There is a dead air space between the inner cover and the top cover which provides some protection to the bees below. If you have an inner cover without an upper entrance, I would highly recommend a slot be cut in it to allow for some air exchange and a chance for bees to have an upper entrance to use just in case the bottom entrance would be plugged up. In days past, it was common to add something called a quilt between the top cover and the top bars of a hive to provide insulation and conserve heat. In fact, hives in English bee hives had roofs or top covers with space far more than our common telescoping cover to provide a rather large dead air space. In the U.S. this is seen in the garden hives sold with hip roof covers. Thus, some beekeepers will advocate placing a packing over frames and ample “attic” spaces and even reduce the number of frames by using something called dummy boards. Dummy boards are placed near the sidewall of the hive – thus providing dead air space between frames and the side walls of the hive body.

**#3 Dry and sheltered hives assist the bees in surviving the winter season.** Wind breaks, and barriers are good for bee hive locations. Low moist ground should be avoided. Plastic hive bodies, top covers and inner covers were at one time available for beekeepers to use in their hives. They proved to be poor because of condensed moisture on the inner cover ceiling or on the side walls of the hive – the result was dead bees. Plastic foundation on which bees build comb seem not to be a problem for condensation.

**# 4 Bees must have food to survive the winter.** Often beekeepers take quite a bit of honey from a colony of bees expecting them to locate and find more resources to make up for the honey taken from the hive. Mother Nature is not kind to any animal living if it cannot find food resources. Thus, it falls on the keeper of a hive of bees to make sure the hive has food resources to help the bees survive the winter.

**#5 Honey bee health is a prime concern especially with the most serious problem today (tracheal mites).** The beekeeper must develop a strategy to reach a threshold level that prevent mites from killing the bees in the hive. Treatment must begin before the winter season starts. It is quite common to find a hive without even a single bee left in the hive. They just disappear. This is different than finding a hive with a cluster of dead bees – most with heads in a cell and no honey within a few inches of the cluster. Again, the keeper of the bees must address the issue of a colonies health --often during the spring, summer and fall seasons.

**#6 Treatment for disease needs to begin early in the year.** Any surviving mites in a hive can quickly overtake a colony of honey bees. I find treating bees before brood rearing begins in the bee season is a great way to control tracheal mites. Oxalic acid works well when applied both in the fall and early spring.

### **Finally, a bit about bee populations.**

It is clear that a colony of bees cannot survive if there are not enough bees to provide the heat generated by a cluster to protect the population of bees from winter cold. Bee populations in a colony depend on the ability of the queen to lay eggs in the numbers required for survival. There are really two parts to the cycle of bee population in a hive of bees. One begins with spring build up (a period when trees and plants begin to show green – food becomes readily available and daylight hours get longer and warmer) and the other (a period of population decline when crops and plants fruit, or go to seed – food becomes less available and daylight hours shorten and days get colder).

I have followed the practice of using my iPhone to take pictures during the bee season. The pictures are dated and I can locate them later after a bee yard visit. The time stamp on each picture helps considerably when I try to make sense of what I took the picture for. It is a record – a very valuable record from year to year. **[Beekeeping requires a beekeeper to look ahead to what colonies of honey bees should be doing and determine what management tools and techniques one should use in saving the bees.](#)**

A new beekeeper last year described his beekeeping first year as drinking from a fire hose! So much is written and published that it is impossible to know everything. In 2021 I intend to write a number of articles. I will share thoughts on the (what and why) of what I am doing and how I am working my bees in the 2021 season. Although, I am an EAS Master Beekeeper, worked in the commercial beekeeping

business, taught many bee school classes over a period of 40 + years, held many offices in bee organizations, I still am learning about beekeeping. It is a challenge. When you pull the rip cord, I want your chute to open!

Right now, I am seeing a lot of pictures posted on the bee blog sites of dead hives. I will address that as best I can with some pictures of hives that died out during this winter season. Anyone reading these notes should be aware that if you have bees alive right now, we are not yet out of the woods. There are things that can and should be done during January. I have taken my weakest hive (it does have a queen) and placed the bees into a five frame nuc. They have three frames of capped honey and occupy the space between two frames. Pictures of them will be in next week's article. Can they be saved? Pro and con on trying to save them!

Best wishes to you all!

Dana