

STAHLMAN BEEKEEPING NOTES

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These bee notes will be published twice a month until the 2025 bee season begins. Please note this change in publication dates.

Anyone keeping honeybees by late September needs to be thinking about winter survival!



There are some late “honey flows” for bees to save surplus honey for winter survival, but they are close to coming to an end. The two that I have depended upon over many beekeeping seasons are goldenrod and aster. However, any of you wanting to explore what is blooming in your neck of the woods should be reading the monthly articles written by Ed Szymanski in the [American Bee Journal](#). He mentions a good number of flowering plants that may be in your neighborhood. I realize that some of these plants are not plentiful in numbers and thus, some plants will not provide a hive all it needs. But he does mention a few such as Ironweed, Joe Pye weed, in addition to my favorites goldenrod and aster that grow almost anywhere in the U.S. Plants that can be planted in your own garden would include cosmos (*Cosmos bipinnatus*) and zinnia (*Zinnia elegans*) which can be found growing in many household gardens.

If colonies have not collected enough surplus honey for winter (an estimated 60 pounds of honey) feeding will be required. If one is feeding before cold weather sets in, liquid sugar syrup 1:1 can be used and the advantage to this, by feeding now, bees will store it where they can use it later. Dry feeding is advised during cold weather because adding moisture to a hive can become a major problem. I am currently using a top feeder with 1:1 sugar syrup on my bees because my bees are located in a poor nectar

producing area.

The October issue of ABJ also carries my Basic Beekeeping Article which includes information about types of feeders one can use.

This week has been a very interesting week for me even with all the rain we have been getting.

I can say I worked bees in the rain – something not recommended – on Monday and Tuesday of this week.

I was invited to help work on a scientific bee research project at North Carolina State University's College of Veterinary Medicine with two other local beekeepers. We volunteer to help with hives on the campus when called upon. First of all, I am always curious about what universities are doing researching honeybees. I was lucky to get a look at what was happening at The Ohio State Bee Lab a number of years ago when the lab was studying pheromones. There I saw honeybees in a halter mounted below a microscope lens and a camera showing the bees reaction to various chemical formulations. I was told they were studying smart bees and dumb bees. Phermone study was big back then and other important things such as determining the length of the glossa (tongue). Some plants bees visit such as red clover require a bee with a long tongue to get the nectar produced by the plant. My beekeeping education did not include the study of honeybee anatomy and how to dissect bees. That requires remembering a lot of words and it is a foreign language to me. Words like (labrum, stomodeum, mentum, lorum, paraglossa, and labial palp). All located on the head and studied to understand how sense organs of taste or smell affect bee behavior.

I am a bit intimidated when I know little about how specific requirements are established to carry out a research project. I might compare this to woodworking. I can build a bee hive box. The tolerances are just to be close. A finish carpenter wants exactness. A crack or gap is not acceptable.

Thus, I would like to share a little of what I was asked to do. It was raining hard at times during the day. The lab was close to a hive that had been prepared so live bees could be studied. I was told they had been treated for varroa mites. A tent shelter was put up over the hive to prevent rain from falling down into the hive.

The research group consisted of seven members of the Veterinary Medicine College. I was, along with another local beekeeper, asked to help gather bees from the hive for the study. Up to that point, I really didn't know exactly what I was expected to do. I joined them in a group presentation on how the study was going to be conducted and the job each member of the group was assigned to do. I am not going into details but I did understand that my role would be to help get 10 worker bees in the brood area out of the hive into a plastic container alive. No smoke could be used when the hive was opened to remove them from the hive. It might affect the results.

A container would be used to collect bees in one hour intervals -- 9 containers in all each with exactly 10 worker bees. By the way, the part of the experiment I participated in was a two day commitment on my part. The study involved a lot more because each bee in the study was marked and returned to the hive in a container and examined the next day before they were released to roam about the hive.

This is something new to all of us. I never thought that a College of Veterinary Medicine would ever be involved with honeybees. I am finding out that snakes, fish, and other critters are all involved in the work they do.



This photo was taken by Anya McQuirk one of the volunteer beekeepers working on the project. She is doing data collection using broodminder technology and is a highly qualified beekeeper. You can see me here collecting the first bee to be put into the plastic containers used in the experiments. The plastic boxes were something like little gas chambers that held the bees. Note the green port that was used to admit treatment into the container. These boxes also had an additional port to hook up to monitoring equipment. Because this was slow going and the bees became more aggressive, I had to put on a bee veil. I do enjoy doing this. And yes, bees were being handled individually and counted as they were being put into the containers. We did change our collection process when a medicine bottle was used to scoop up the bees making it less

challenging and quicker to get the 10 worker bees than doing it one bee at a time. That is the value of having input by some skilled beekeepers to avoid getting stung and it sped up the process. Thanks Tom, a staff member and beekeeper, for helping me avoid a lot of bee stings. It was I might mention better prepared on the second day. This hive became more aggressive each time it was opened.



This is another Anya McQuirk Photo taken as we made sure each box had only 10 bees. It is interesting that if we had too many bees in a box those extra bees had to be removed. You might ask how this could be done because all the bees collected in this container were running around and able to fly.

- Bees fly to light and thus collect near the top of the container making it possible to lift the container up to pull the extra bee or two out the bottom.
- Many years ago, scientists listing insects by intelligence put the house fly well above the intelligence of the honey bee. The simple way they used to determine this was to put an insect into a deep jar with an open end and place the open end away from a light source. Flies found their way out of the jar quickly while

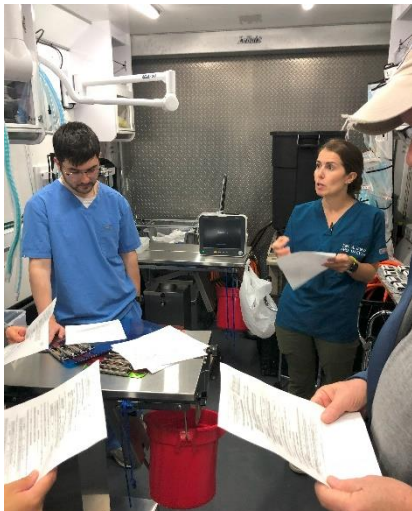
bees collected at the closed end near the light source and remained in the jar. Maybe you notice that bees fly up to ceiling lights or windows when taken inside a house or room. Inspecting bees at night with a flash light with a clear lens is not wise. Commercial beekeepers often move bees at night and they must see what they are doing. An interesting thing about light is bees don't see red. Thus, red lens avoid the problem of bees flying to places where beekeepers are working. Bees instead will fly around headlights on a truck for example if they are flying at all.

Back to the laboratory

Everything about beekeeping is now shifting to science. One would think that after 300 years when we first accepted the idea that a colony has a queen rather than a king, we would know

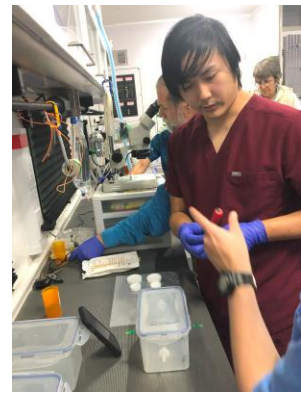
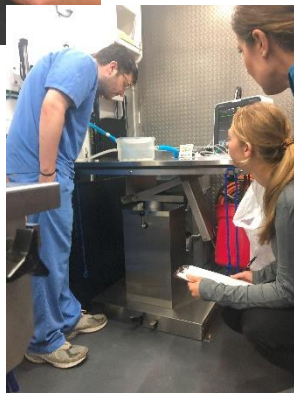
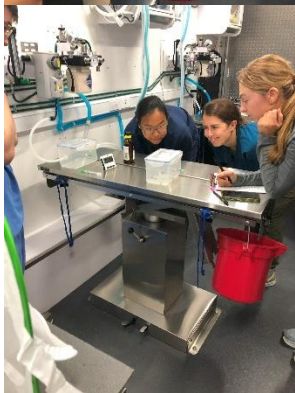
everything there is to know about honeybees. Not so! I did an internet check on future issues connected with keeping honey bees. Our expanding travel and world trade has opened up avenues for pests and diseases to enter the U.S. Maybe you should be aware of something called *Tropilaelaps spp.* *Tropilaelaps* are ectoparasites that reduce the lifespans of individual bees and reduce their overall health and are projected to be a major threat to honeybees in the U.S. They are found currently in the Philippines, Thailand, Vietnam, India, Sri Lanka, Afghanistan and Pakistan.

Yes, we know what COVID is but how are your bees doing? The following are concerns that beekeepers may be dealing with: Israeli Acute Bee Paralysis Virus, Slow bee Paralysis Virus, Lake Sinai Virus 1, Kashmir Bee Virus, Chronic Bee Paralysis Virus, Black Queen Cell Virus, Deformed Wing Virus A, B and C plus many more. You can not see viruses but you can see symptoms. Soon, very soon we may be relying on a Veterinarian to help us save our bees. The research I had the opportunity to witness involved studying honey bees.

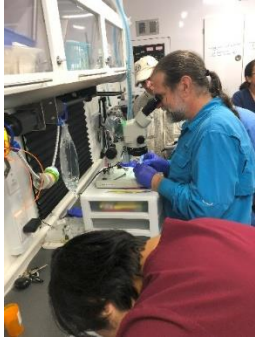


I am going to share that I was impressed with all the individuals involved in this project. I hesitate to use their full names and position but will refer to them by first name only. I can say there were 3 DVM (Doctors of Veterinary Medicine) three students, and support staff members involved: Samuel, Julie, Dan, Caroline, Stephen, Ashley, Tom, Anya and myself.

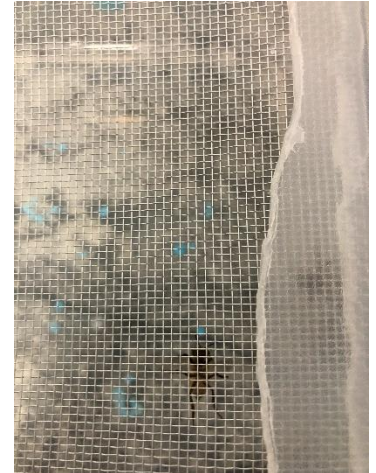
The first step was to make sure everyone was informed and understood their job. Tom, Anya, and I went to the bee hive to get 10 bees. This was done each hour until all nine samples were collected. This photo journey is the sequence of the events taking place on day one. Much of this was repeated over and over hour after hour.



The bees were put to sleep and records were kept on when the first bee showed no movement to the time when the last bee showed no movement. All the time data was collect on the montor and notes were taken. The last picture above shows Stephen receiving the container with bees and he prepared them to be put under the microscope.



These pictures will give you an idea of the work involved. The photo on the right is a picture of the 10 bees marked by Tom with a blue marker after they revived from the anesthesia. The study required a strict recording of any thing regarding each single bee such as movements, physical features, and mites that might be



attached to its body. I am not sure exactly what the data collected will reveal or other details of the study that I would be allowed to release.

What I can say is I was impressed with the scientific methods used and how careful the bees were handled. It is wonderful to have young people like this involved with studying honey bees and getting into the act of actually having hands on work with them. And yes, they also suited up to do some work in the bee yard as well.



This final photo shows the bees being returned to the hive where additional data will be collected over the next few days. This is Tom and Caroline I think. Thank you NC State for including me in this project.

Moving On

I did receive some comments about last week's attachment on abandoned bees.

I appreciate that some were interested. I am attaching the 2nd of three articles I wrote in 2013 for the Walter T. Kelley monthly newsletter.

I am not sure how long the surviving bee hive had bees in it but several items such as frame design in the hive indicate this hive was at least 40 years old. Anyone curious about what a hive unattended for 10 or more years looks like, check out this attachment.