

# STAHLMAN BEEKEEPING

## NOTES FOR 2023

Vol. 5 Issue # 3 January 21, 2023



The Ulster Observation hive being used at the Ohio State fair in 2012

Observation hives have entertained both youth and adults when used as an educational tool.

I have owned several over the years to take with me to share honeybees with groups I was asked to talk to. The bees were far more interesting than my talking about bees.

They are used by honeybee researchers to study the various mysteries associated with bee behavior.

But there is the possibility that a person with limited room could keep bees in an observation hive and actually be a beekeeper. Keeping bees in an observation hive is a challenge.

I would think one who wants to enjoy bees and share the pleasures of keeping bees -- an observation hive would be a good solution to the

question I was asked.

There are issues that anyone thinking about keeping bees in an observation hive must address.



Putting bees into a temporary observation hive is easy. One does not need to think about maintaining the bees for a long time. The transfer of a frame of bees with brood and a queen into a one frame observation hive can be done in a few minutes. The bees are put on display and once that objective has been achieved, the bees are returned to a hive to resume life as

normal.

Keeping bees in an observation hive permanently requires a greater effort. It will be a challenge to keep them alive just as it is with a standard colony of bees. Anyone wanting to keep an observation hive must be aware of some issues to be dealt with.

### IMPORTANT POINTS

A question came up several weeks ago and it has taken some time for me to answer it.

The question: Can I enjoy bees without buying all the equipment needed to keep them?

I mentioned that one can rent hives here in the Raleigh area. Someone will take care of them and let you watch and help take care of the hive.

That was not what they wanted to do – It still cost too much. And then I suggested joining a local bee club with an apiary!

Then I mentioned they might get an observation hive. “They wanted to study, watch and learn about bees.”

Quote from I.H. Jackson:

“Remember that, although you will always find beekeepers ready to help each other, it is everyone’s duty to give as well as to receive help.”

Lets consider some of the issues:

### The enviroment

- Bees spend their lives living in a dark space with little light other than at the entrance to the nest.
- Honeybees need room to cluster and expand as populations grows.
- They need room for pollen and honey storage.
- Any violation of the bee space rule is naturally solved by the bees.
- Climate conditions are vital to bees survival – ventilation, keeping cool during hot periods and warm during cold periods.
- Bees must be able to fly.

### The biology

- A colony must have a queen and worker bees. They may raise drones.
- The queen is capable of laying 2000 eggs a day.
- Bees naturally swarm when crowded.
- Bees remove debris from the nesting area.
- Bees need both nectar and pollen (food) to survive.

### Management

- How does one remove frames with bees from the observation hive?
- Where does one locate an observation hive?
- How portable is the observation hive?
- How do you get bees into an observation hive?
- How large should an observation hive be?

### The benefits of keeping bees in an observation hive

- You can see and study the bees: What are they doing now?
- You can hear them.
- You can smell them.
- You can share your love of bees by inviting friends over to see your bees. No problem with someone getting stung. It will be one of the best conversational pieces of furniture in your home.

There are many styles of observation hives. I am including a pdf file with some plans for constructing an observation hive that could be built for educational use only.

### The first I would recommend:



This is a five frame observation hive originally called the Ulster hive. It became popular in the U.S. following Apimondia in Australia. This is an excellent educational tool to share honeybees with the general public and to keep around to supplement other beekeeping activities. Actually it is a 5 frame nuc with multiple uses.

Most bee catalogs will refer to it as a 5-frame observation hive. The upper observation section is held to the nuc by latches. A queen excluder keeps the queen in the upper observation area while bees, frames of brood, and food

stores are held in the bottom nuc. This extends the time bees can be displayed – often days at a time.



When used in public the bees are confined to the nuc and the panels covering the bees behind the glass windows are removed.

When not being used as an observation hive, the hive can be set outside taking up very little space. It could be used in many ways, but usually as bee populations grow, frames can be removed to help start another hive or reinforce a hive needing some help.

Left to its own, it will likely swarm several times during a bee season.

### Observation hives used inside a home:



I can share several permeant observation hives with you. If one is serious about keeping bees inside, I would recommend that one visit a beekeeper who has one willing to share their experiences. This observation hive is owned by Kory Goldsmith and Daniel Harden. It is attached to the wall and swivels, providing several viewing points. Daniel builds observation hives. Maintenance is required to keep the glass clean and inspection often may require the removal of the hive in order to remove frames and make adjustments as needed.



This observation hive was designed by Doug Eason of Raleigh. It is uniquely designed. This observation hive holds 10 frames in 5 individual sections. This means that one may not be able to see the queen at times but because the queen does move about, and lay eggs in available cells, and the bees build comb, feed brood, and do all the things that happen in a regular hive, there is a lot to be seen - even the queen at times.

What this observation hive offers:

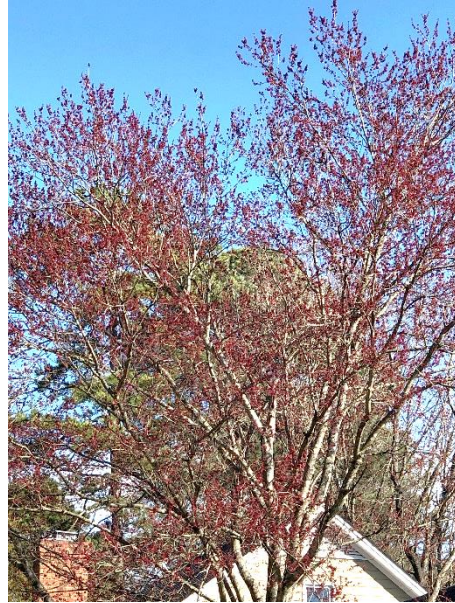
This observation hive allows for the addition of sections as the bee population in the hive grows. Almost like adding supers. Sections can be removed at any level for individual inspection without releasing bees into the area where the hive is kept.

- The space available allows for normal population growth.
- Keeping this hive clean of debris is easy.
- It is easy to requeen and do mite counts. Almost any task required of a beekeeper—including collecting some surplus honey and making a split.

## Pollen Report mid-January in Raleigh, N.C.



January 13, 2023 a neighborhood in Northwest Raleigh, N.C. Two Maple Trees in bloom.



An early blooming maple tree is easy to spot. The pollen sample I took from a flower bloom is shown below.



The blossom

Acer Pollen grain from one of the trees shown above.

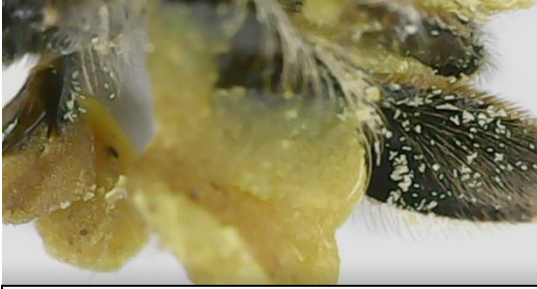


I depend upon Ronald O. Kapp's Palynology guide "Pollen and Spores" to narrow down the family this pollen grain represents. The guide took me to the *Aceraceae* -- (Acer) family. The common name is Maple tree family.

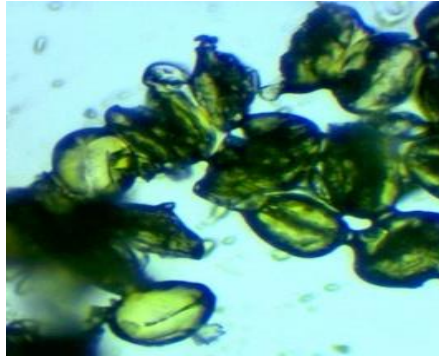
The guide describes the pollen shape as prolate spheroidal with the polar axis of the grain being longer than the equatorial diameter. Thus, football shaped. The surface is finely reticulate with prominent furrow membranes.

There are over 130 types of maple trees around the world. The United States is home to 45 species, both native and introduced. Numerous cultivars also exist that are selectively bred for several characteristics, such as size, profile, and color.

I collected a sample of pollen coming into my hive which looks much like the sample I took from the Maple trees above.



An enlarged view of the pollen on the bee's leg that I collected at my hive. The pollen ball was yellowish/tan as indicated above.

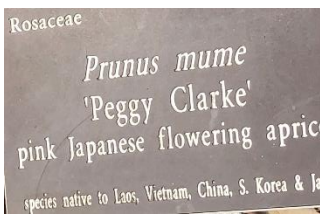


This is the x40 power of the pollen under the microscope.

Is it a silver maple? My identification is a rough guess. Norway maple, red maple all come to mind. But I feel my sample and the id are good enough to say it is a tree in the maple family.

There are a few trees and plants in bloom right now in Raleigh. Some of them were located at the JC Raulston Arboretum in Raleigh, N.C. Jan. 14, 2023

*Prunus mume* Flowering Apricot

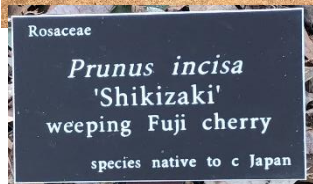


A large selection of Japanese flowering apricot trees (white, red & Pink) can be seen at the North Carolina State University Arboretum.



This one can be found in the Raleigh area growing on Six Forks Road just north of the I-540 exit going north.

Look for it in residential neighborhoods. Check it out at [Prunus mume - Wikipedia](https://en.wikipedia.org/wiki/Prunus_mume)

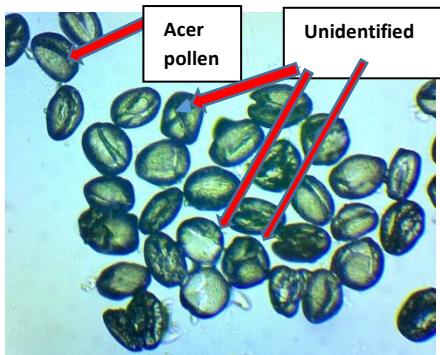


There is also another species of Prunus in bloom here in Raleigh.

*Prunus incisa* Fujii cherry many here call it a cherry tree.

Its pollen grain is very similar to maple pollen in shape. I visited three bee yards on Thursday and took pollen samples from each: I found what I think are pollen

grains from plants in the prunus family as well as the maple family.



The grains in this sample are not consistent. The maple pollen is easy to identify from the other shaped pollen. Some grains are larger. Some have different surface features. A sample like this indicate the bee collecting it visited several different species of plants.

I was recently asked if bees visited only one variety of plant on foraging trips. I have seen mostly consistent grains in pollen samples. As I started to examine the pellets yesterday, I found something rather interesting. In Raleigh at least, the pollen grains

being brought into hives are variable as shown in the microscope study I did yesterday. Size and shape of pollen grains are in some case similar and in others different.

Urban areas are more likely to give bees more choices where to gather pollen. When visiting urban neighborhoods, one may find something like this showing up in a pollen sample.



Many of the plants in bloom are in home landscapes especially in up-scale neighborhoods. This sample came from a hive not far from I 440. The pollen grains appear to be from acer and Hellebore. Further detective work under higher magnification will be required to narrow down positive identification.

One constant performer almost everywhere is the maple tree. I am finding maple in almost every sample I look at. Camellia and forsythia are in bloom but once other plants become available bees have no interest in them.

I found bees working mahonia grape holly, flowering apricot, flowering cherry, winter jasmine, birch, maple,

camellia, and Christmas rose so far. By far the largest amount of pollen coming into my hives is maple pollen. In fact, I see open cells of what I think is maple nectar being stored. Even that can be identified by microscopic examination.



Honeybee gathering pollen and maybe nectar from *Mahonia* grape holly. 1-14-23  
At JC Raulston Arboretum.

This is still winter and cold spells might affect the unbelievable warm record setting weather of this year.

This picture was taken of my backyard January 18, 2022.

Just one year ago I was staying inside.

Fortunately weather like this does not last long in North Carolina.



I have put together a collection of plants in bloom. Some provide important nectar and pollen to hives. Others maybe none at all.



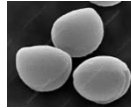
**Dandelion (*Taraxacum officinale*)** According to American Honey Plants by Frank C. Pellett the dandelion is one of the most widely distributed plants in the U.S. He says, "The beekeeper has little to complain of from these weeds, as there is nothing of greater value during the short period of bloom. Most of the nectar gathered will be consumed for brood rearing."

I have seen dandelions in bloom at several locations in the Raleigh area. I have not seen bees visiting them yet or seen any pollen grains which are distinctive.



**Hellebore Christmas roses.** They can be found in the eastern regions of the U.S. According to Pellett, it is probably not sufficient to be important to American beekeepers.

I have seen pollen this year that indicates the bees gather it early and most likely use it to feed brood. But the number of planting are limited to a few areas and are not visited when other more desirable plants are in bloom.



**Amaryllidaceae, or amaryllis family** includes daffodil, jonquil, and narcissus early blooming plants

I have seen bees visit daffodils but it never showed up in any of my samples. Frank Pellett did not include it in his American honey plant book. Thus, I assume it has little impact on spring build-up of my bees even though I see it growing in many locations including Ohio and North Carolina.



**Jasminum nudiflorum (Winter Jasmine)** A winter bloom shrub with long arching branches and willow stems.

I am glad I take pictures of tagged plants. This tag identifies the plant at the arboretum as a member of

the **Oleaceae** family.

I saw a bee visiting the flowers at JC Raulston Arboretum. However when I checked American Honey Plants I found this:



Well known plant growing from Virginia to Florida. It is reported to be poisonous to bees. The symptoms of the poisoning are: the abdomen becomes very much distended, and the bees act as though intoxicated. The bee, unless too far gone, slowly crawls out of the hive and very soon expires. This is not the same plant Pellett includes in his book (Yellow Jessamine – *Gelsemium sempervirens*). See added comments on next page. Flowers of both families are yellow and look similar.

[Side Effects of Eating Jasmine Flowers | Healthfully](#) A link to more information.

There are more than 200 varieties of plants belonging to either the **Oleaceae family** of true jasmine or the Loganiaceae family of false jasmine. The flowers of the former are nontoxic if eaten.

Within the Loganiaceae family, the flowers of gelsemium sempervirens Loganiaceae, also known as yellow jasmine, yellow jessamine or Carolina jasmine, are highly poisonous. When eaten they may cause a wide range of side effects in humans, animals and bees.

There are many plants just about to bloom. North Carolina is a large state stretching from the Atlantic Ocean to the Appalachian Mountains in the west.