

When It's Springtime In Atlanta. . .

February In Georgia, And The South In General, Can Be Tricky.

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At this point, it is too late to order packages, nucs, and even queens from most bee operations. Usually, by the end of the year, package, nuc, and queen supply houses will stop taking orders for the next season – especially for the early delivery dates. By the beginning of the New Year, the opportunity for Spring orders has passed, but there may still be hope for Summer shipments. When we have a research project that calls for more bees than we can provide, we place our order in the preceding year, between March and April.

But, not all is lost. Hopefully, established beekeepers will have bees that have survived the Winter and have built up colony populations to take advantage of the upcoming nectar flows. If this is the case, then you can split an original colony to make two or more colonies. Or, if you're new to the game of beekeeping and, this year, you were hoping to start with your first hive, pick up the phone and start making calls, beginning with the contact list of your local bee club. There's got to be a colony for sale somewhere.

However, for those who have colonies now, remember, the worst of Winter isn't over yet.

February in Georgia is always a critical time for honey bee colonies. For the last eight or nine months, they have survived off stored pollen and honey, fought off mites, beetles and other pests, shivered their way through several months of cold weather, and are now utterly at the whim of mother nature (or, if they're lucky, a gracious beekeeper!) to provide some much needed relief. I relate it to when I haven't been to the store in a while, and all that's in my cupboard is a paltry can of creamed corn

and a package of ramen noodles. Yum! Ok. Maybe, it's not exactly the same thing, but, for some reason, the idea brings back memories of the good ole days!

As many of you realize, Winter survival for bee colonies is not a given. Getting colonies to this point either means

that you did some important things very well last Fall or that your unmanaged bees have rolled the dice and somehow beaten the odds. Typically, successful Winter survival begins with late Summer and Fall preparations, including: ensuring queen health and productivity, assessing food stores, managing mite loads, and adjusting honey and pollen frames around the bees and brood. No matter what you did or didn't do, hopefully your bees are healthy and alive today. But, now is not the time to rest on your laurels (or luck!). Your bees could be in dire need of your assistance.

Weather patterns over the past several years here in Georgia (or everywhere) have really played a part in how well colonies survive. Winter seasons of late have had cold starts, warm middles and below-average temperatures towards the end. The 2013 spring season in the Piedmont region of Georgia brought

cold rains just as the blooms were opening. Unfortunately, our bees were stuck inside their hives as the long-awaited nectar flow was being washed out of the flowers and onto the ground. With the normal build up of populations in anticipation of Spring, the small amounts of the remaining food supplies were quickly exhausted and many colonies crashed.

Despite the cold temperatures, the longer days and ↗



Feeding bees. (Ben Rouse photo)

related early-Spring blooms of trees like Red Maple, Willow and American Elm arouse honey bee brood production. Once the warm days of Spring roll around, they will have enough worker force to accomplish their two major goals in life: to survive (forage) and reproduce (swarm)!

Spring management for the beekeeper begins with assessment. In Georgia, February will usually offer a few days, here and there, that are suitable enough to open hive covers and assess honey stores, pollen stores and population levels. However, much care must be taken.

Let's start from the beginning.

Temperature is an important factor to take into consideration when you're about to open a hive. But before you begin, look at what the bees are doing or not doing outside the hive. The other day, bees in my apiary were flying in ambient temperatures in the 40s (°F); however, it was in full sun with no wind, no clouds and low humidity. Because of this, lids were popped and honey frames examined. Given the cold weather, we quickly opened the hives to check stores and gauge populations, but the cluster was never compromised. In other words, the frames in which bees were clustered were not disturbed (pulled for examination). This is important. *Muy importante!* There is a common misconception that the bees keep the interior of the hive warm during the Winter. They do not. They only maintain temperature in the cluster. Removing hive covers will not harm bees in the conditions mentioned above. But, if covers are opened during cold, wet, blustery days, or if the cluster is broken by pulling brood and bee frames, there could be significant harm done. Remember that individual bees have very little body mass and chill easily, and chilled bees become immobile. When bees become separated from the cluster and fall onto the bottom board or the ground, they will typically not be able to crawl back and will die.

Keep this in mind as well when moving bees in extremely cold weather. Bees jarred out of the cluster may not be able to return. However, it is better to open covers and check whether the colony has ample food than to do nothing at all.

But if temperatures are too cold, you can lift a colony from the back, tipping it forward to feel the weight, but this may give a false impression of what's really going on if you're not attuned to the feel of weight variations. The other day, the crew and I were out in the field lifting colonies in the rain with temperatures in the 30s, as conditions were not suitable to opening hive covers. Upon cursory examination, all the colonies seemed to pass muster. So, back into the truck we went to warm our chilled bones. As we were about to drive away, I noticed one hive on the end with a few dead bees on the landing tongue of the bottom board. Back out into the cold I went to inspect closer. I knocked on the side of the hive and heard nothing. So, I knocked again even harder, but there was still no buzzing sound. With concern, I progressively began to dismantle the hive looking for signs of life. I did not find a single bee or a cell of honey. Hmmm? Yet, the box had felt heavy enough during our first Lift Test pass. While conditions may dictate limiting hive inspections to just the Lift Test, this example goes to show its

subjectivity and potential for error. We were just feeling the weight of the woodenware. Be careful when using this procedure. Make sure you are feeling the weight of the honey stores and not misinterpreting the weight of the woodenware, brood and bees. If you've ever picked up a frame packed from corner to corner with brood and bees, you know that it is dense and quite heavy. By February, some colonies may be busting with brood and bees. So, when possible, the best assessment method is to see for yourself whether there are adequate honey stores.

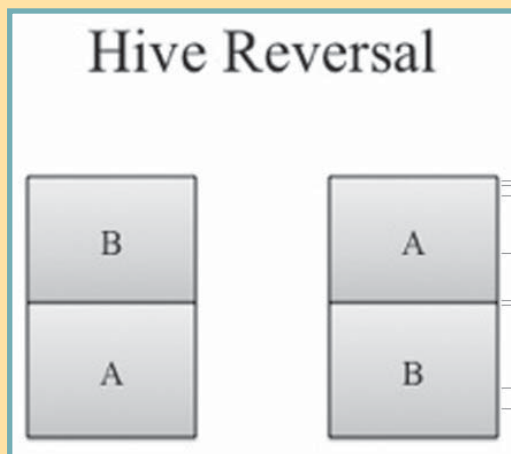
Now, if the colony is light on stores, you must feed, or they will starve. February in Georgia will offer only a few drops of nectar here and there, but what's mostly available is pollen from red maple trees. The heavy nectar flow won't begin until mid-March to April – depending on location (latitude). Then, there's always the question of what ratio (cane sugar to water, by weight) to feed: 2 to 1, or 1 to 1? Most literature recommends a 1 to 1 ratio at this time of year to stimulate the queen to lay eggs. A 1 to 1 ratio more closely resembles natural flower nectar. We've never been as meticulous at the UGA Bee Lab (or home) as to weigh components, we just have a feel for it. Granulated sugar is added to about the $\frac{3}{4}$ -full point in a five-gallon bucket and then hot water stirred in until full. I imagine that our concoction is somewhere in between.

Also, what's the best way to feed? After trying all the feeding contraptions out there, we've settled on two-holed (with 2-7/8" apertures), migratory covers with inverted half-gallon mason jars to feed our bees (see Figure 1). Top, entrance, and division board feeders will not deliver the needed syrup if temperatures are cold. The food delivery method needs to be right on top of the cluster; it cannot be to the side, at the entrance or in a top feeder where the bees have to travel up and around to access the syrup. If "the weather

outside is frightful," the bees will not be able to move any distance at all; therefore, they will starve. Bees in cluster can starve with pounds of honey just inches away. This usually occurs when extremely cold weather sets in for a few days. The bees eat all surrounding honey and can't move to access the rest. Normally, larger clusters are not as susceptible to this, but smaller clusters can lose the battle quickly if they get separated from the honey source. That's why, during warmer days (50's and above), it's a good idea to move those distant honey frames in closer and over the cluster.

Your apiary location will dictate how much pollen and honey can be foraged in a nectar flow season. Heavily-developed areas may not yield as much resources compared to fallow land with bramble and flowering weeds. However, friends of mine in downtown Atlanta have had several good honey yields in the recent past. So, who knows? But, the old proverb "location, location, location," is always applicable even though the harvest may vary from year to year. You wouldn't put a cow in a pine forest, because there is nothing to eat. Well, the same idea applies to a bee hive; it needs to be in a location that can provide enough food for the colony's survival.

Over the years, I've rarely had to feed pollen supplements. Bees seem to collect enough natural pollen in



our region. Pollen is the protein source for the bees, and an adequate supply is critical to brood production. If pollen stores are low, then you may want to consider adding a few patties. Typically, small hive beetles (SHB) are not a problem in early Spring, but, this year, we are seeing significant SHB populations over-wintering within the cluster of bees despite our efforts at trapping! Since pollen patties are an ideal media for SHB larvae growth, and SHB love to lay eggs in lingering pollen patties, I advise more smaller patties than fewer larger patties; this gives the bees more surface area from which to collect the material and speeds up the consumption rate. Also, note that when a given bee population is low, there is a tendency for beekeepers to add more pollen supplement for population growth. But, fewer bees means a slower consumption rate – thus, more time for SHB adulteration. All it takes is one “breeder hive” of SHB in an apiary to inundate all the hives in the area with beetles. Don't make this mistake.

One more thing to consider when opening hives; honey bees use propolis, a resinous substance collected from conifer (sap-bearing evergreen) trees, to seal cracks and crevices, and fill spaces between lids, inner covers, hive bodies and frames. They use this substance to protect the colony against the weather. It also helps to seal out (and sometimes confine or corral) invasive critters while undergirding a hive's structural integrity. Plus, its antibacterial properties serve to sterilize the interior of the hive as well. With that said, every time we crack open a colony we break those protective layers that the bees have so painstakingly applied. Further, since propolis is hard and brittle in cold temperatures, it won't conform to the contours of the hive body surfaces when haphazardly placed back into position. This renders useless the hard work of the bees to prepare their home for Winter. So, when making mid-Winter observations, be mindful of this by minimizing hive inspections, returning wood-ware in the same orientation that it was found, and avoiding the usual beekeeper impulse to scrape away excess propolis.

Another item on my list for upcoming bee duties is to reverse hive bodies. Reversing hive bodies will actually accomplish several things. First, the practice is an incentive for the beekeeper to inspect their hives and get a sense of what is going on with the bees when weather permits:

- Is there enough food (honey and pollen)?
- Has the queen started laying?
- How does her pattern look (only check this if it's warm enough to actually separate the frames and disturb the cluster)?
- How is the population level?
- Do you see Deformed Wing Virus, mites, beetles or other signs of disease?
- Has a sneaky little mouse moved into the bottom on the hive without paying a deposit?

However, don't reverse hive bodies until the nectar flow is on if a particular colony is out of resources and you are performing emergency feeding (as described above), otherwise the food source will be too far from the cluster.

The second reason to reverse the hives is to allow more space above the bees. This relieves congestion, which is a major step in swarm control and may buy you some extra time before the bees hit the trees (swarm). As



Inspecting honey. (photo by Ben Rouse)

the Winter months ticks on by, the bee cluster is slowly moving upward consuming their honey reserves. This leaves nice, drawn, empty comb below and, perhaps, some missed honey frames along the periphery. If the hive has honey frames, and the cluster is no longer in the bottom hive box, it is possible to reverse the boxes to put the bees and brood back on the bottom. Then, rearrange any remaining honey frames directly over the brood.

Another important strategy in reversing hive bodies is to maintain the integrity of the brood, i.e., keeping the same cluster arrangement as found. If the cluster spans across two supers, then keep those two supers together when moving them down (as a unit) onto the bottom board. We are only moving empty boxes from below and putting them on top. If you split the cluster, where half is on the bottom of one super and half is on the top of the other, the bees and brood will die.

Once temperatures have risen, don't leave too many empty supers on top since the excess room is a perfect place for unwanted pests like SHBs and wax moths to multiply. We just want enough room for the bees to be able to expand and store the incoming nectar. This is also a good time to put queen excluders between the brood chamber and those new, empty supers on top. This will keep the queen from laying in the honey frames. Just make doubly sure that the queen is not in any of those empty supers that you're reversing and, hence, trapped above the excluder.

February can be such a wonderful time for the beekeeper and the bees. Hints of Spring are turning up everywhere. You can smell it in the air, you can see it as tiny buds begin to break free and you can hear it as the high-pitched chorus of Spring peepers begin their mating calls. To the bees, it brings about the promise of limitless nectar hopefully just around the corner. Just make sure your bees are ready for all this excitement.

Be good to you and your bees.

See ya! **BC**