

Tips and Tricks

A Few Suggestions For Working your Bees....

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Keeping Bees is Hard!



- Successful beekeepers need:
 - Knowledge
 - EXPERIENCE
 - A good location
 - Good weather
 - A generous dose of luck
- There is so much information to absorb that the first years can be very confusing.

Techniques for Keeping Bees are All Based on the Bees' Biology and Behavior

- Experienced beekeepers develop “tricks” – favorite techniques that work for them. These “tricks” arise from years of observation.
- Every old beekeeper has his or her own set of “tricks” but they share many in common.



Combining and Splitting

Never let your resources go to waste!

Combining Bees

- In fall, we combine weak colonies with stronger ones so the weak ones will not die in winter.
- There are many other times we might combine bees from two different colonies.
- Bees from different hives do not fight nearly as much as some of the literature suggests.
- Young nurse bees on healthy frames of brood are welcome in any colony at any time. Newspaper is usually unnecessary.

Young bees
are welcome
anywhere!



When to Use Newspaper?

- Use newspaper when a slow introduction is critical:
 - During a dearth. Bees are always testier in dearth.
 - When the colony with the good queen is weaker than the one you're combining it with. You may even consider caging the queen if this is the case, and releasing her yourself when you're sure the bees have accepted her.

Frames of Capped Brood and Bees are Like a Shot of Mega-Vitamins



- A few frames of capped brood and bees can work apparent miracles in a weak colony that has a good queen.
- Do NOT shake the bees off the frames of brood. Those bees are needed to keep the brood warm.
- Open brood (larvae) is a DRAIN on a colony because the brood must be fed. Only give open brood if you want the bees to raise a new queen, and always accompany it by at least one frame of capped brood and bees.

Strength



- Not enough emphasis is placed on the importance of a colony's strength, i.e., how many bees it contains.
- When you do your recordkeeping during an inspection, consider recording the approximate number of frames of bees in the hive.
- Doing this consistently can give you a lot of information, e.g. queen quality, if the colony has swarmed, possible disease issues....

“Critical” Strength

- Recognize that if the population of a colony falls below a certain critical level, that colony is too weak to grow because they do not have enough bees to feed and warm the brood.
- The “Critical” Strength is higher in winter because a wintering colony must also keep itself warm enough to move to its food stores.
- You can save good colonies whose populations have fallen below the “Critical” level by “injections” of bees and capped brood.

Equalizing Strength

- In spring, if you have two hives – one weak and one strong – take frames of capped brood and bees from the strong one and give them to the weak one.
- You can even take whole supers of brood and bees
- If possible, take from a hive in a different yard.



Equalizing Strength

- Now, instead of having one colony that will swarm (and not make honey), and one that is too weak to make honey, you have two colonies strong enough to produce honey but not swarm.
- Plus, both colonies have a better chance of surviving the winter.



Switching Hive Locations

- Another quick way of bolstering a weak colony is to switch its location with that of a strong hive.
- The weak hive will gain the strong hive's foragers.
- This is not, however, as good as moving frames of brood and nurse bees.
- It's a nice easy fix for nucs that don't have quite enough bees as it's very easy to move a nuc.



Splitting Bees

- Bees can be split four ways to Sunday, as long as each split has enough bees, brood, food, and either a queen or the resources to make one.
- The minimum strength of a nuc depends on the location and the time of year. In northern NJ, it's about 4 medium frames. In some areas SHB is a factor.
- ALWAYS move splits to a different location a mile or so distant for at least a few days or the foragers will all return to the original location. Sometimes the bees may even abandon the brood.
- The reasons for splitting determine the timing. Bad timing can cost you your honey crop or result in your bees starving in the winter.

Nucs are Splits



- A well-rounded operation maintains a number of nucs equal to about 10 to 20% of its production colonies.
- Nucs are a reservoir of bees, brood, and queens – ready to be used whenever and wherever they are needed.
- Using a nuc to requeen a production colony is by far the most reliable method of introducing a new queen.
- Super your nucs as you do your production hives. Those boxes of bees and brood can be removed to make more nucs or strengthen weak hives without compromising your honey crop.

Winter Nucs

- Any nucs not used during the growing season can be overwintered and used to replace winter dead-outs next spring.
- Winter nucs by putting two side-by-side, with entrances facing in opposite directions, and then wrapping. You'll need migratory covers to do this. The two nucs cluster against the common walls and share warmth.



Nucs as the Basis of a Sustainable Apiary



- Even a smaller operation with 15-20 hives can develop a system of queen-rearing and nucleus colonies that will enable you to:
 - Never buy another nuc.
 - Never buy another package.
 - Never buy another queen.
 - Create a line of bees that are perfectly adapted to your location.

How To Do This?



One Example: Gooserock Farm with 60 Production Hives

1. Overwinter about 40 nucs, each in three 5-medium frame stacks.
2. In early spring, sell 30 7-medium frame nucs. Stack the extra frames in boxes on the remaining 10 queenright nucs. This leaves ten queenright stacks that are 7 to 8 boxes high.
3. At the beginning of the main nectar flows, raise a batch or two of queens.
4. Use the resources in the ten nucs to make up about 60 mating nucs.

Sustainable Apiary, cont'd.

- Move the 60 mating nucs to a dedicated mating yard with excellent nectar sources and give each a queen cell.
- Leave the 10 queenright nucs in the nuc wintering yard, supering as needed.
- Build up the mating nucs to 2 to 3 boxes. When dearth arrives, move them to the wintering yard, feed, and continue to build up to strength.
- Cull queens and combine nucs as needed, use nucs to requeen and strengthen production hives. Winter the remaining nucs.
- Repeat.

Sustainable Apiary, cont'd.

- You will ALWAYS have the resources you need to fix any issues in your production colonies: queens, brood, stores.
- You will never have to weaken production colonies or compromise your honey crop to create mating nucs.
- You can cycle out old brood comb by putting it in nucs that you sell.
- You keep the best queens you raise in your operation for consideration as breeders in future years.

Fixing Drone-Layers and Laying Workers



My Queen's a Bum. What now?

I think I have Laying Workers. What now?

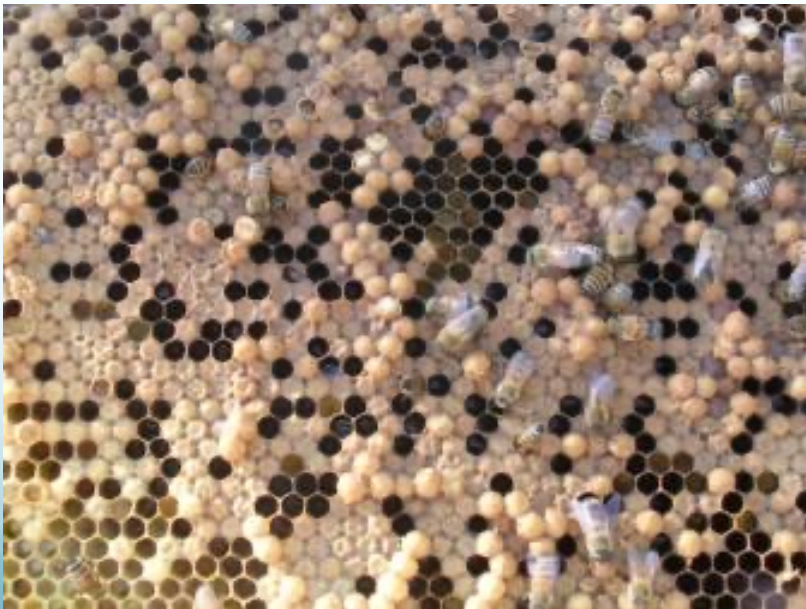
- These are problems that must be fixed NOW. New beekeepers often wait far too long, hoping the problem will go away, but it rarely does. Intervention is needed RIGHT AWAY.
- If you have a drone-laying queen, you must find her and kill her (or have the bees do it for you.)
- If you have laying workers, recognize that it's not just ONE laying worker, it's HUNDREDS. You need to enlist the bees from a queen-right colony to get rid of the laying workers before you can introduce a new queen.

Dumping out all the bees from a laying worker hive 50-100' away does not work.

It's a waste of time and energy, and kills bees. The laying workers are perfectly capable of flying back to the hive.

Laying Workers vs. Drone Layer: telling the difference

- Drone layer has solid pattern. Brood is grouped, with drone cells in the middle of worker brood. Even if there is NO worker brood, the drone brood is still in clumps.
- Laying workers (not one but hundreds) do not lay a pattern. There will be NO worker brood, and the drone brood is very scattered. You may see multiple eggs in a cell or eggs on the sides of cells.



Note that very young queens sometimes lay multiple eggs in a cell, so that is NOT 100% indicative of laying workers.

How to Fix It

- Both laying workers AND drone layers can be fixed with a strong queen-right colony.
- Consolidate the problem hive to the minimum number of boxes by removing empty or light frames.
- Choose a strong queen-right colony, remove the covers and any honey supers if the hive is very tall (give them to another hive temporarily), put a queen excluder on, and then add the boxes with the problem bees.
- The queen-right workers will go through the queen excluder and kill the laying workers or the drone layer.
- After about 5-7 days, you can remove the problem hive and give it some capped brood and nurse bees, and a new caged queen. Or, you can give it a queen-right nuc (even better!)



Laying Worker or
Drone Layer Colony
Queen Excluder

Strong queen-right
colony

Finding Queens



First ask: Do You Really Need to Find Her?
(Or Them!)

After a while, your brain will learn to “see” queens.

- Be fast and smooth. Don't get the colony all upset by using a lot of smoke or pulling every frame.
- Don't even bother looking in honey supers. She's almost never there. Take them right off and get into the brood nest.
- Observe which frame has the most bees on it and then GENTLY puff a LITTLE smoke. Pull that frame first. That's where she'll be a lot of the time. DON'T put the frame back in the box. Set it to the side.
- If you run 9 frames rather than 10, it's much easier to pull frames in the center without harming bees.
- If she's not there, look on the two adjacent frames next.

Finding Queens



Finding Queens, cont'd..

- Keep checking adjacent frames of brood. When you run out of brood frames and pull a frame of pollen, go to the next box.
- Again, observe which frame has the most bees and pull that one first.
- The queen is most likely on a frame of eggs and very young brood so don't spend a lot of time on frames of capped brood. Often one box is mostly capped and one has most of the open brood. Focus on the latter.
- If you can't find her, put queen excluders between all the boxes. Come back a few days later, separate the boxes, and see which one has eggs. Now you only have 9 or 10 frames to look at instead of 30 or 40.

Virgins and Queenless Hives

- Bees replace their queens much more frequently than most beekeepers realize. And they swarm.
- MOST of the time a beekeeper thinks a colony is queenless, they really are not. They have a virgin.
- There are behavior cues that help us determine if a colony is truly queenless or has a virgin.
- Don't bother trying to find the virgin unless it's in a small nuc. They're very hard to spot.

Behavior Clues



- Truly queenless bees are often noisy – the “queenless roar.”
- Queenless bees ACT nervous and unhappy. They may be more runny and sting more.
- Queenless bees often fan Nasanov pheromone .
- Bees with a virgin may be a bit more testy than a queenright colony but they are usually pretty calm and quiet.
- Do the arithmetic. You can calculate when you should be seeing eggs.
- **BE PATIENT.** If you throw a new mated queen in there and they have a virgin, they will often kill the mated queen.

Testing for Queenlessness

- If there are no eggs or young open brood and you think your bees might be queenless, take a frame of eggs and milk brood from a queenright colony, and give it to the one in question. Mark the frame with a thumbtack or magic marker.
- After a few days, carefully remove the frame. If the bees have started a queen cell or two, there's a good chance they really are queenless.

Working Hot Bees



Defensive Bees

- First, try to determine WHY your bees are hot.
 - Has a skunk or bear been at them?
 - Are they diseased? Do they have a heavy mite load?
 - Are they queenless?
 - Is their queen failing?
 - Is the weather bad?
 - Is there no nectar available (dearth)?
 - Could they have Africanized genetics?
- If you can determine what's making them unhappy, fix it. That's your job!
- If you can't, re-queen the colony. It will take about a month before you begin to see a difference in their temperament and closer to two months before the population has been completely replaced.

Working the Hot Hive

- Foragers are responsible for defense.
- Move the box you're working in to a spot 5-10' away from the hive stand. Examine it there. The foragers will fly home.
- Recognize that most of the foragers are in the bottom box. That's where you're most likely to be stung. Move the bottom box and let it sit a few minutes before you begin to work it.



Queen Excluders

- Why do queens lay in honey supers?
 - Answer: Because it's warmer near the top of the hive.
 - Queens are more likely to “chimney” in a weak colony that has trouble keeping the brood warm or during an early spring flow or a cold snap.
- Queen excluders DO keep workers out of the honey supers as well as queens.
- You will get LESS honey if you use queen excluders.
- Queen excluders DO cause more swarming.
- If you use all one size equipment (e.g., mediums) it doesn't matter that much if a queen lays in the honey supers.

Good Uses for Queen Excluders

- As a base to stack empty honey supers to keep mice out
- To “fix” laying worker or drone layer colonies
- In queen rearing
- Early on in an early season flow when there is not much nectar in the top brood box, to encourage the bees to make a honey barrier below the supers. Remove in about a week.



Double Screens (Snelgrove Boards)



- Created by L.E. Snelgrove as a swarm control device.
- Can also be used to:
 - Winter a weak colony above a strong one;
 - Stack supers of brood comb to keep wax moths out after freezing. Wax moths can get through queen excluders but not double screens;
 - Replace the inner and outer cover while moving bees to prevent overheating;
 - Be an impromptu bottom board for swarms or weak hives.



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SWARMING ITS CONTROL AND PREVENTION

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Swarm with Snelgrove “Bottom” Board



Moving Bees

- Cut window screen to size for blocking entrance the day before and border it with duct tape. Replace inner cover with a double screen and put the outer cover on top.
- OR: Replace the bottom board with a double screen as well as the inner cover. Leave entrance open until the evening, then close.
- The evening before the move, put the screen over the entrance. Remove outer cover and use a ratchet strap to secure supers together. Replace outer cover until the move in case of rain. Leave outer cover off during the move.
- ALWAYS move bees with frames running front to back, NEVER sideways.

Moving Bees, cont'd.

- Two man aluminum hive lifters work well.
- Unless you're doing a night move, move bees as early in the morning as possible.
- At the new location, set hive down on the stand, put outer cover on top, open Snelgrove Board entrance OR rip off moving screen from entrance and move away. (The bees will not generally be very happy.)
- Wait a day or two to put the hive back together: replace Snelgrove Board(s) with bottom board and inner cover, remove straps.

Keeping Bees Near People



Apiary Near People



- The standard recommendation for bees in a populated area is to create a barrier such as a 6' stockade fence if people walk near flight paths.
- This can shade the bees, though, and create problems.
- A double or even triple layer of deer netting in front of the hives can work just as well and permit light and air to circulate.

And Don't Forget to Share your own Tips with a New Beekeeper!

